

Page 1 of 120

September 13, 2022

1 (Exhibits 1001, 1005, 1006, 1007, 1008, 2 2008, 2009, and 2015 were previously marked for 3 identification and are attached to the 4 transcript.) 5 THE VIDEOGRAPHER: Here begins Media 6 No. 1 in the videotaped deposition of Brett Lucht, 7 Ph.D. in the matter of Amperex Technology Limited 8 v. Maxell, Ltd. in the United States Patent and 9 Trademark Office, Case No. IPR 2021-01440, again, 10 -01441, and, again, -01443. 11 Today's date is September 13th, 2022. 12 The time on the video monitor is 8:59 a.m. The 13 videographer today is Sarah Ohning, representing 14 Planet Depos. This video deposition is taking 15 place remotely. 16 Would counsel please voice-identify 17 themselves and state whom they represent. 18 MR. DOUGLAS: Good morning. This is 19 Christopher Douglas, on behalf of Petitioner 20 Amperex Technologies, and I'm with the law firm of 21 Alston & Bird. With me today is my colleague, 22 Miranda Sooter, also of Alston & Bird.	7 1 the law firm of Alston & Bird, and I'll be asking 2 you some questions today on behalf of Petitioner 3 Amperex Technology Limited. 4 A Okay. 5 Q Before we get started, I just wanted to 6 note on the record that all parties have agreed to 7 take this deposition remotely over video, so all 8 the parties have agreed and consented to be in 9 physically different locations, including the 10 court reporter. 11 Today's deposition relates to three IPR 12 proceedings: IPR 2021-01440, which involves 13 Patent No. 8,691,446; IPR 2021-01441, which 14 involves Patent No. 9,077,035; and IPR 2021-01443, 15 which involves Patent No. 9,350,019. And the 16 parties have agreed that the transcript from this 17 deposition of Dr. Lucht can be used across all 18 three of these IPRs proceedings which I 19 enumerated. 20 It's also our understanding the parties 21 have agreed that the portion of the transcript 22 from today's depositions including questions and
6 1 MS. WRIGHT: Good morning. You have 2 Paige Wright here from Vinson Elkins LLP, 3 representing the Patent Owner, Maxell, Ltd. 4 THE VIDEOGRAPHER: The court reporter 5 today is Cassidy Western, representing Planet 6 Depos. 7 Would the reporter please swear in the 8 witness. 9 BRETT LUCHT, Ph.D., 10 of lawful age, being first duly sworn or affirmed 11 to testify to the truth, the whole truth, and 12 nothing but the truth, was examined and testified 13 as follows: 14 EXAMINATION BY COUNSEL FOR THE PETITIONER, 15 AMPEREX TECHNOLOGY LIMITED 16 BY MR. DOUGLAS: 17 Q Morning, Dr. Lucht. 18 A Morning. 19 Q Did I pronounce that correctly? 20 A Yes. 21 Q Lucht? Is that fine? Okay. 22 My name is Chris Douglas and I'm with	8 1 testimony regarding your background and CV can 2 also be used in the 1442 proceeding. 3 Does that all sound correct as far as 4 you know, Dr. Lucht? 5 A Sure. Yeah. 6 Q Okay. 7 A As far as I know, yes. 8 Q Yeah, okay. Thanks. 9 Dr. Lucht, can you please state your 10 full name for the record. 11 A My full name is Brett Landon Lucht. 12 Q And where do you de- -- where do you 13 reside, Dr. Lucht? 14 A I reside in Kingston, Rhode Island, USA. 15 Q And where are you physically located 16 today? 17 A I am currently in my office, which is 18 also in Kingston, Rhode Island, USA. 19 Q And is there anyone else in the room 20 with you today? 21 A Nobody else in the room with me today. 22 Q Dr. Lucht, have you ever had your

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 2 of 120

September 13, 2022

1 deposition taken before? 2 A Yes. 3 Q And roughly how many times have you had 4 your deposition taken? 5 A I think this is the fifth time. Ish. I 6 don't know. Something around five. 7 Q Okay. And were any of those roughly 8 five depositions remote depositions like today? 9 A I think three of the five. Half of 10 them, I think. Something like that -- 11 Q Okay. 12 A -- roughly. 13 Q Sounds good. 14 And were any of those five depositions 15 in patent cases? 16 A Yes. 17 Q And how many of -- I'm sorry. Strike 18 that. 19 Roughly how many of your depositions 20 were in patent cases? 21 A Could you define "patent cases"? I 22 mean, at -- I mean, like IPRs, infringement, all	1 Q And to just -- just to make it little 2 bit easier on -- on the court reporter, did you 3 say "eBay," as in e-B-a -- 4 A No. 5 Q -- -y, or did -- 6 A Ube. 7 Q -- you say something -- 8 A Ube. Sorry. U-b-e. U-b-e. 9 Q Okay. Got it. 10 A Japanese electrolyte company. 11 Q Okay. Apologies for that. 12 A No, no problem. 13 Q And in the Ube case, do you recall if 14 you represented the patent owner or the 15 petitioner? 16 A Well, in that case, I was on the patent 17 owner's side. It was an Ube patent, and they were 18 accusing Samsung of infringing on the patent. 19 Q And in the Ascend case, do you recall if 20 you were testifying on behalf of the patent owner 21 or the petitioner? 22 A No, I was not. I was on the
1 these things? 2 Q Yes, sir. 3 How many of your depositions involved 4 cases in any venue that related to a -- a patent, 5 a U.S. patent? 6 A All of them. 7 Q And were any of those depositions 8 related to an inter partes review proceeding? 9 A Yes. 10 Q And roughly how many of your previous 11 depositions related to an inter partes review 12 proceeding? 13 A I think two. 14 Q And do you recall the parties that were 15 involved in those two proceedings? 16 A So the first one, I believe, was Ube. 17 And I was on Ube's side and it was against 18 Samsung, I think. 19 And then the second one was a small 20 company in Houston called Ascend, and I was on 21 Ascend's side. And I think Samsung, again, was on 22 the other side.	1 petitioner's side. It was a Samsung patent. 2 Q Okay. 3 A Once again, I think it was Samsung. 4 Q And what was the most recent case in 5 which you were deposed? 6 A This case, the whole claim construction. 7 Your -- your video just went all over 8 the place. 9 Q Well, that's -- that's going to be a fun 10 twist today. I'm sorry about that in- -- 11 interruption. 12 I think that you had said that it -- it 13 was this case was the most recent? 14 A Claim construction for this series of 15 patents. 16 Q Dr. Lucht, have you ever testified at 17 trial before? 18 A No, I have not. 19 Q And -- and -- and in this case, you 20 represent and work for Maxell. Is that correct? 21 A Yes. 22 Q And outside of these IPRs and the

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 3 of 120

September 13, 2022

1 district court litigation that you just mentioned, 2 have you done any other work for Maxell? 3 A No. 4 Q And have you ever worked as an expert 5 adverse to Maxell? 6 A No. 7 Q All right. Before we -- we -- we go too 8 much further, I mean, it sounds like you've -- 9 you've done this before, Dr. Lucht, and it sounds 10 like you recently also had a deposition in a 11 related matter. But before we proceed, this is a 12 good time to review some ground rules. 13 Of course I'm going to be asking you 14 questions today, and you are under oath to answer 15 them truthfully and to the best of your ability. 16 Do you understand that? 17 A Yes. 18 Q And if you do not understand a question, 19 please let me know so that I can clarify or 20 rephrase it. If you do not tell me otherwise, I 21 will assume you understand my question. 22 Is that fair?	15 1 answer the question before we break. 2 Fair enough? 3 A Yes. 4 Q And during your deposition today, will 5 you agree to not use email or instant messaging to 6 communicate with others about the subject matter 7 of your testimony? 8 A Yes. 9 Q And if you get disconnected, just to be 10 clear, I -- it's totally fine to -- to reach out 11 to Ms. Wright or the court reporters or -- or -- 12 or anybody else. We'll just stop and, you know, 13 get everything sorted. 14 Is that okay? 15 A Yes. That's -- yeah. Thank you. 16 Q Are you on any medications that would 17 affect your ability to testify today, Dr. Lucht? 18 A No. 19 Q And is there any other reason you would 20 not be able to give complete and truthful answers 21 to my questions today? 22 A Not that I can think of.
14 1 A Yes. 2 Q And during the deposition, your counsel 3 might object to certain questions. Do you 4 understand that you must answer my questions 5 unless your counsel instructs you otherwise? 6 A Yes. 7 Q And of course because the court reporter 8 can only track one person at a time, can you agree 9 that you will let me finish my questions before 10 responding, and in turn, I will let you finish 11 your answer before I ask my question? 12 A I will try my best. 13 Q I appreciate that. So will I. 14 And in the same vein, especially because 15 we're remote, will you please respond verbally, no 16 headshakes, nods, uh-huhs, so that the court 17 reporter can accurately transcribe your answers? 18 A Yes. 19 Q We will take breaks roughly every hour, 20 but of course at any time you feel you need a 21 break, please just -- just let me know. However, 22 if a question is pending, I ask that you please	16 1 Q Okay. So just as a matter of -- of 2 housekeeping, Dr. Lucht, will you understand that 3 if I re- -- refer to ATL or the Petitioner that 4 I'm referring to Amperex Technology Limited? 5 A Yes. 6 Q And will you understand if I refer to 7 Maxell or Patent Owner that I'm referring to 8 Maxell, Ltd.? 9 A Yes. 10 Q Okay. So -- and then when I refer to 11 the '446 patent, will you understand that I'm 12 referring to U.S. Patent No. 8,691,446? 13 A Yes. 14 Q And do you understand that the '446 15 patent has been marked as Exhibit 1001 in 16 IPR 2021-01440? 17 A Yes. 18 Q And when I say the '035 patent, do you 19 understand that I'm referring to U.S. Patent 20 No. 9,077,035? 21 A Yes. 22 Q And do you understand that the '035

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 4 of 120

September 13, 2022

1 patent has been marked as Exhibit 1001 in 2 IPR 2021-01441? 3 A Yes. 4 Q Almost done. 5 When I say the '019 patent, do you 6 understand that I'm referring to U.S. Patent 7 No. 9,350,019? 8 A Yes. 9 Q And do you understand that the '019 10 patent has been marked as Exhibit 1001 in 11 IPR 2021-01443? 12 A Yes. 13 Q And if I refer to the cathode patents, 14 will you understand that I'm referring to the '446 15 patent, the '035 patent, and the '019 patent? 16 A Yes. 17 Q Dr. Lucht, do you understand why you are 18 here today? 19 A I'm here today to be deposed on the IPR 20 cases for which I've already, I guess, put in 21 declarations. Is that what it's called? Put in. 22 I don't know, issue.	1 history for each of the three cathode patents -- 2 A I -- 3 Q -- that we're talking -- 4 A I -- I -- I -- I -- I've looked through 5 them for all of them, but more recently, I only 6 looked through it for one. I -- the way the 7 things are presented is not natural to me, so it's 8 not -- it's kind of hard to read through it. 9 Q Understood. 10 And it -- it sounds like you reviewed, I 11 think you called it the court order allowing the 12 IPRs or the institution decisions. 13 Did you -- did you review those 14 decisions for all three of the cathode cases? 15 A I think I did. Yes, I think I reviewed 16 all three of those. They were all pretty short. 17 Q And did you meet with counsel in 18 preparation for this deposition? 19 A Yes, I did. 20 Q And with whom did you meet? 21 A Paige. 22 Q And was there anyone else present at
1 Q Yes. Excellent. 2 And -- and how did you prepare for 3 today's deposition, Dr. Lucht? 4 A I read back through the patents, the 5 declarations, my declarations, the opposing 6 expert's declarations, some of the other documents 7 that were associated with the cases. 8 Q And do you recall what those other 9 documents were that were associated with the 10 cases? 11 A I mean, one of the main ones was the 12 court order that allowed the IPR to proceed. I 13 don't know what the name of that is exactly. But 14 I read through that. I mean, I looked also at 15 some of the -- the patents that ATL claimed were 16 prior art. So I looked at several of those, or 17 most of them, I guess. 18 Those were the primary things. Oh, and 19 I guess I looked through the -- what's it called? 20 The -- the patent history or the case file 21 patent -- is that what it's called? Case history. 22 Q And did you review the -- the file	1 those meetings? 2 A An assistant of Paige's, which I don't 3 remember what her name was. It was up there 4 yesterday, but I don't recall. 5 Q Okay. 6 A I haven't met her very many times. 7 Q And about how many times did you meet 8 with -- with counsel prior to this deposition? 9 A Total? For all the different things 10 related to this ca- -- with -- with these -- the 11 IPR and infringement cases and everything else? 12 Q Apologies, doc- -- doc- -- Dr. Lucht. 13 I -- I -- I just mean about how long did you spend 14 preparing for this partic- -- or strike that. 15 And about how many times did you meet 16 with Ms. Wright preparing for this particular 17 deposition? 18 A I think just yesterday, really, 19 specifically for this deposition. I mean, we did 20 the -- we had several meetings related to the 21 declaration, which in some ways, I guess, is more 22 or less preparation for the deposition. But I

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 5 of 120

September 13, 2022

21 1 think just the one yesterday. 2 Q All right. And about how long did you 3 spend, Dr. Lucht, preparing for this deposition? 4 A Well, our meeting yesterday was about 5 two and a half hours. And, you know, before that, 6 I probably spent, in the last week or week and a 7 half, maybe another six or eight hours reading 8 documents. Something along those lines. 9 Q And in preparation for -- for this 10 deposition, do you recall whether you read the 11 petitions filed in these cathode patent IPRs? 12 A I think I may have looked through one of 13 them quickly. But they're, you know, not -- it 14 wasn't one of the main things I looked at. 15 Q And, Dr. Lucht, did you review any other 16 articles or materials, other than what I believe 17 you referred to as the prior art references, in 18 preparation for this deposition? 19 A Not -- no, I mean, the only things I 20 really read through were the prior art. I mean, 21 and, like I said, my declarations and then the 22 declarations of your expert and those things. I	23 1 declaration of Brett Lucht '446 patent. 2 A Yep. Declaration of Brett Lucht '446 3 patent. I got it right here in front of me. 4 Q Excellent. 5 And, sir, if you'll turn to Page 3, 6 Paragraph 8. 7 A Page 3, Paragraph 8. Yes. 8 Q And in Paragraph 8, there's a listing of 9 documents that you reviewed in advance of 10 preparing this declaration. 11 Is -- is that correct? 12 A Yes. 13 Q Other than the institution decisions 14 which you told me about a few minutes ago, is this 15 list of exhibits, Exhibit 1001 through 1008, a 16 fair characterization of the documents you 17 reviewed in preparation for this deposition? 18 A I mean, this and then, of course, my 19 declarations, and then also the declarations of 20 your expert witness. 21 Q Okay. Understood. 22 So -- so this declaration we're looking
22 1 don't think there was any other documents. 2 Q And, Dr. Lucht, do you -- do you have 3 your declarations with you today? 4 A Yes. I have binders, which -- you 5 lawyers love trees -- binders -- 6 Q Yes. 7 A -- with all of these things. Yeah. 8 Q Excellent. 9 Dr. Lucht, will you look at your 10 declaration, please, in the 1440 matter. It's 11 Exhibit 2008. 12 A Wait, what do you -- my -- my 13 declaration? Okay. 14 Q Yes, sir. 15 A Sorry. It's in the front. Most of the 16 stuff's all numbered, but my two declarations are 17 in the front and not numbered in what's here. But 18 that's okay. 19 So you want my declaration? 20 Q Yes, sir. 21 A Okay. 22 Q Yes. Yes. It's -- it's labeled as	24 1 at now, Paragraph 8, Page 3, did not have your 2 second declaration, of course, and -- and that -- 3 A Yeah. 4 Q That -- a second declaration that came 5 and is listed as Exhibit 2015, and -- 6 A Which I reviewed. 7 Q Okay. And in preparation for this 8 deposition, did you speak with any of your 9 colleagues or former colleagues about today -- 10 about the subject matter of today's deposition? 11 A No. 12 Q And at any time, have you spoken to 13 anyone besides Patent Owner's attorneys about the 14 subject matter of these IPRs or the cathode 15 patents? 16 A No. 17 Q And at any time, have you spoken to 18 anyone at Maxell about these IPRs or the cathode 19 patents? 20 A No. 21 Q And, Dr. Lucht, have you had any contact 22 with -- with any of the inventors of the patents

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 6 of 120

September 13, 2022

25 1 at issue in today's deposition? 2 A Not to my knowledge. 3 Q And do you recall, Dr. Lucht, when you 4 were first retained by Maxell in regards to these 5 IPRs or the district court litigation? 6 A I don't recall exactly. It's been a 7 while. 12 to 18 months, it might have been -- I 8 don't -- it's been a while. I don't remember. 9 I'd -- I'd have to look back at my emails and 10 stuff to see when I originally started. Over a 11 year, though, I think. 12 Q And do you recall whether you were first 13 retained for the IPRs or first retained for the 14 district court litigation? 15 A I think I was first -- I'm not certain. 16 I'm not certain. 17 Q And do you recall who first contacted 18 you regarding being retained as an expert for 19 Maxell? 20 A A headhunter. Basically a company 21 that -- that -- you know -- I assume you guys have 22 those also -- that places -- places experts.	27 1 his declarations and the exhibits to the 2 declarations, but no other exhibits, just so that 3 you know. 4 MR. DOUGLAS: I certainly understand, 5 but his CV is an exhibit to his declaration. 6 MS. WRIGHT: Which declaration has the 7 CV listed as an exhibit? I might be missing it. 8 MR. DOUGLAS: I mean, are you taking the 9 position that he's not -- he's not relying on his 10 CV to show his expertise? 11 MS. WRIGHT: Oh, I'm taking the position 12 that he doesn't have a hard copy in front of him, 13 so you may need to put it on screen. 14 MR. DOUGLAS: I mean, if you're -- if 15 you want to take the position that you're not 16 relying on the -- Exhibit 2009, I'm -- I'm fine to 17 do that. Otherwise, it seems to be a necessary 18 exhibit to his -- his declaration. 19 MS. WRIGHT: I think that we can still 20 use it as an exhibit today. That's not the 21 position I'm taking. 22 I'm just letting you know that he
26 1 Q Understood. 2 And, Dr. Lucht, were you aware of the 3 '446 patent before being retained in this case? 4 A Not that I recall. 5 Q And were you aware of the '019 patent 6 before being retained in this case? 7 A Not that I recall. 8 Q And were you aware of the '035 patent 9 before being retained in this case? 10 A Not that I recall. 11 Q All right. Dr. Lucht, I would like to 12 now turn to your CV, and it has been marked as 13 Exhibit 2009 in each of the three IPRs at -- at 14 issue, the '440, '441 and -- and 1443. 15 A Okay. 16 Q (Indiscernible.) 17 A I found it. Oh, it's only in one of 18 them. Hang on. Let me get it. 19 What -- what did you say it was again? 20 Q It's marked Exhibit 2009. 21 A I don't think it's in any of these. 22 MS. WRIGHT: Counsel, we sent copies of	28 1 doesn't have a printed hard copy, so in order to 2 pull that exhibit today, you'd need to show it on 3 screen, which I take no exception to. 4 He just doesn't have it printed in front 5 of him. 6 MR. DOUGLAS: Oh, I understand. Okay. 7 Can -- can we go -- Ms. Wright, do you 8 mind if we go off the record quickly? 9 MS. WRIGHT: No problem. Let's do it. 10 THE VIDEOGRAPHER: It is 9:25 a.m. and 11 we are going off the record. 12 (Brief pause off the record.) 13 THE VIDEOGRAPHER: We are back on the 14 video record. The time is 9:26 a.m. 15 BY MR. DOUGLAS: 16 Q Thanks, Dr. Lucht, for the brief pause 17 while we figured out screen sharing here. 18 What we've put up on the screen has been 19 marked as Exhibit 2009 in each of these IPR 20 proceedings that we're talking about today. 21 Do you recognize what is up on the 22 screen as Exhibit 2009?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 7 of 120

September 13, 2022

29 1 A Yes. 2 Q And what is Exhibit 2009, Dr. Lucht? 3 A It appears to be my CV. 4 Q And, Dr. Lucht, do you recall submitting 5 a CV in this -- in these proceedings? 6 A Yes. 7 Q And with the understanding that this is 8 on the screen and we'll scroll through it to 9 assist you in whatever way possible, Dr. Lucht, 10 can you confirm that this CV is accurate? 11 A It is -- once again, if it's what I 12 sent, I assume that it's -- that -- that it was 13 accurate the date that I sent it. I may have 14 published a few papers since this was originally 15 submitted. But in general, yes, this is -- I'm 16 sure -- I assume it's accurate. 17 Q And -- and, Dr. Lucht, in your -- this 18 CV was submitted at the same time as your first 19 declarations, which were dated January 12th, 2022. 20 Does that -- does that sound right to you? 21 A Yes. 22 Q And if this ac- -- and -- and provided	31 1 A Yes, I actually do. It's -- some 2 universities give you master's degrees under 3 weight of Ph.Ds, some don't. Cornell does. So 4 technically speaking, I do have a master's degree, 5 but I usually don't include it on my résumé. 6 Q And so just -- just so I understand it, 7 would that be master -- would that master's degree 8 would have been conferred in -- conferred in 1996? 9 A No. The master's degree was probably 10 conferred in '91, after two years. 11 Q And -- 12 A (Indiscernible.) 13 Q I'm sorry. 14 And -- and would that master's degree 15 have been in chemistry or organic chemistry? 16 A The master's degree was che- -- in 17 chemistry from Cornell. 18 Q Okay. And did you study batteries in 19 your undergraduate program at the University of 20 Puget Sound? 21 A No. 22 Q And did you study batteries in your
30 1 that this CV was accurate as of January 2022, do 2 you recall of any updates that -- that you would 3 have made between today's date and January of this 4 year? 5 A I mean, as I said, I've -- I've 6 published another five or six papers, I think, and 7 I became a fellow of The Electrochemical Society. 8 Those are probably the only two major updates. 9 Q But other than additions, there's no 10 other changes, deletions, anything else that -- 11 that we need to be aware of? 12 A Not that I'm aware of. 13 Q Excellent. 14 Okay. Let's walk quickly through your 15 education. Will you let us know where and when 16 did you receive your undergraduate degree? 17 A I received my undergraduate degree from 18 the University of Puget Sound in Tacoma, 19 Washington in 1991. 20 Q Excellent. 21 And do you have a master's degree, 22 Dr. Lucht?	32 1 master's program at Cornell University? 2 A No. 3 Q And did you study batteries in your 4 Ph.D. program at Cornell University? 5 A No. 6 Q And would it be fair to say that you 7 also did not work with batteries, then, in your 8 Ph.D. program at Cornell University? 9 A I did not study batteries during my 10 Ph.D. program. 11 Q And did you study electrolytes during 12 your undergraduate program at University of Puget 13 Sound? 14 A No. 15 Q And did you study electrolytes during 16 your master's degree at Cornell University? 17 A I studied lithium salt -- the solution 18 structure of lithium salts, which in terms of a 19 broad definition, I guess, would be electrolyte, 20 but it wouldn't be considered electrolytes for 21 batteries. But I studied lithium solvation. 22 Q And did you work with electrolytes

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 8 of 120

September 13, 2022

1 during your Ph.D. program at Cornell University? 2 A Once again, the Ph.D. program was on the 3 same thing as the master's degree, which was the 4 solution structures of lithium salts. 5 Q And, Dr. Lucht, what was the subject of 6 your Ph.D. thesis? 7 A What was the what? 8 Q I apologize. 9 What was the subject of your Ph.D. 10 thesis? 11 A The solution structure of lithium 12 hexamethyldisilazide. Although I'm not sure if 13 that's the exact title of what it was. I'd have 14 to look. But it's -- you know. 15 Q Okay. And, Dr. Lucht, did you begin 16 working for the University of Rhode Island 17 directly after receiving your Ph.D.? 18 A No. 19 Q And what -- what did you do after 20 receiving your Ph.D.? 21 A I was a post-doctoral associate at the 22 University of California at Berkeley in Berkeley,	1 A Lithium-ion batteries. 2 Q And what types of work did you do with 3 lithium-ion batteries during the time frame of 4 1998 to 2002 when you were an assistant professor? 5 A Primary -- primarily studying 6 electrolytes, but I was collaborating with a 7 company called Yardney Technical Products that 8 actually manufactured lithium batteries for the 9 military, and I went to a lot of their group 10 meetings during that time frame -- or started -- 11 probably started around 2000. 12 So they were doing all aspects of 13 batteries in terms of battery manufacturing. They 14 didn't -- they didn't manufacture cathode 15 particles or, you know -- or anode particles or 16 electrodes and things like that. They just 17 built -- they bought a bunch of components and 18 built batteries. 19 Q And did you design or develop 20 electrolytes for Yarden [sic] at the time? 21 A I would say in terms of designing 22 electrolytes, that probably started around the
1 California. 2 Q And what was the subject of your work at 3 the University of California Berkeley while you 4 were a post-doc fellow? 5 A Primarily the synthesis and 6 characterization of conjugated polymers. 7 Q And -- and when did you transition from 8 being a post-doc fellow at the University of 9 California Berkeley to working for the University 10 of Rhode Island? 11 A I was hired in 1998. 12 Q And at that time, you were an assistant 13 professor? 14 A I was an assistant professor when I was 15 hired, yes. 16 Q And during that time period that you 17 were an assistant professor from 1998 to 2002, did 18 you work with batteries? 19 A Yes. 20 Q And what type of batteries did you work 21 with during the time period in which you were an 22 assistant professor from 1998 to 2002?	1 2002 time frame. It might have been started in 2 2001. Once again, I'd have to kind of look more 3 detail at -- at my, you know, résumé stuff. 4 Something around there. 5 Q And so did that work -- strike that. 6 Dr. Lucht, did -- did I hear you 7 correctly that it's Yarden Technical Products? 8 Y- -- 9 A Yard -- 10 Q -- -a- -- 11 A Yardney, Y-a-r-d-n-e-y. They -- they're 12 now part of a company called EaglePicher, but they 13 were an independently-owned company. I don't 14 think -- up 'til about 2010 or something like 15 that. 16 Q Thank you. 17 And then in the time -- so then from 18 2002 to 2006, I understand that you were an 19 associate professor at the University of Rhode 20 Island. 21 Is that -- is that correct? 22 A Yes.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 9 of 120

September 13, 2022

37 1 Q And during 2000 -- during that time 2 period in which you were an associate professor, 3 did you work with batteries? 4 A Yes. 5 Q And what type of batteries did you work 6 with during the time that you were an associate 7 professor? 8 A Lithium-ion batteries. 9 Q And, Dr. Lucht, what type of work did 10 you do with lithium-ion batteries during the time 11 that you were an associate professor? 12 A Mostly studying electrolytes. But at 13 the same time, I think during that time frame, I 14 continued to collaborate and go to group meetings 15 at Yardney Technical Products. And then -- wait, 16 when's that? It's 2 -- 2006 as an associate 17 professor. I think also during that time, I did a 18 sabbatical at NASA Jet Propulsion Laboratory 19 exclusively on lithium-ion batteries with Marshall 20 Smart. 21 I'd have to look back and see. I think 22 it was 2 -- let me see. My son was born in 2004.	39 1 Q And do you recall the -- what additives 2 that you were studying that improved the stability 3 of the electrolytes? 4 A One of them was dimethylacetamide. We 5 looked at some phosphazenes also. We also looked 6 at phos- -- I mean HMPA, hexamethylphosphoramide. 7 A few other ones. I mean, we had -- it's -- 8 there's a paper we published on it, I think, in 9 2005. 10 Q Dr. Lucht, we're just changing the 11 screen to show you Page 4 of -- of your CV. I 12 think -- I think you mentioned that you published 13 a paper on the electrolytes we were just talking 14 about? 15 A Yeah, there it is. "Thermal Stabilizing 16 Additives for LiPF₆-Carbonate Electrolytes, Wentao 17 Li, Chris Campion, Brett Lucht." 2005, I was 18 right. 2005. 19 Q Excellent. 20 And so that's No. 29 on your -- on your 21 CV? 22 A Yep.
38 1 Yeah. So I think it was January 2005 that I did 2 the sabbatical. 3 Q Okay. And during that time period from 4 2002 to 2006, you said you worked on electrolytes. 5 Is that correct? 6 A Yes, primarily. Although we -- you 7 know, we -- I -- I got -- I -- during that time 8 frame, I definitely started getting much more 9 involved with batteries as a whole. I mean, but 10 my focus has still primarily been on electrolytes. 11 But we started looking a lot more at 12 electrolyte-electrode interfaces too during that 13 time frame. 14 Q And do you recall any specific 15 electrolytes that you were working on in that 2002 16 to 2006 time frame? 17 A I mean, yes. I mean, we were primarily 18 investigating the standard LiPF₆ and carbonate 19 electrolytes and the thermal stability of it. And 20 then we also developed a series of additives 21 that -- that improve the thermal stability of the 22 bulk electrolyte.	40 1 Q Okay. Excellent. 2 And then during that same time period, 3 you, again, said, Dr. Lucht, that you were working 4 with -- with Yardney Tech? 5 A Yes. I was still -- I was still 6 collaborating with Yardney. And as I said, 7 during -- around this time frame of 2005 was when 8 I went and did a sabbatical at NASA's Jet 9 Propulsion Lab. At least I think it was 10 January 2005. I'm not positive. I'd have to look 11 back again at all my -- I think it was 2005. 12 Q And during your work with Yardney during 13 this time per- -- period from 2002 to roughly 14 2006, were you designing and developing 15 electrolytes for them? 16 A Yes. With them, I would say, as opposed 17 to for them, but with them. Yeah, we were 18 collaborating on studying electrolytes, yeah. 19 Q And -- and do you recall what 20 electrolytes you were collaborating on at the time 21 with Yardney? 22 A Once again, the electrolytes were

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 10 of 120

September 13, 2022

41 1 predom- -- were basically standard electrolytes. 2 Lith- -- LiPF6 and carbonates, which originally 3 was EC with a -- well, it was one to one to one 4 EC:DMC:DEC was originally. And then we kind of 5 morphed into three to seven EC:EMC. And then we 6 were designing electrolyte additives to put into 7 those for- -- or we weren't even design -- at that 8 time we were purchasing commercial off the shelf 9 some. 10 But we were -- we were -- I -- no, we 11 did synthesize. So we did synthesize a couple 12 things. 13 But we were -- we were designing 14 additives for those standard electrolytes to 15 improve the performance of the standard 16 electrolytes. 17 Q And do you recall, Dr. Lucht, what 18 additives you were either purchasing or 19 synthesizing for Yardney? 20 A During this time, as I -- as I said a 21 few minutes ago, one of them was 22 dimethylacetamide. The ones we were syn- -- I	43 1 Products because Yardney Technical Products had 2 research contracts with NASA. 3 And so I was studying similar things 4 and -- but I took -- since I was on sabbatical, I 5 took time and actually worked in the lab full-time 6 building batteries, testing batteries, taking 7 batteries apart, all stuff myself. Which prior to 8 that time, I had just been managing students that 9 were doing this either in my lab or at Yardney in 10 collaboration with -- with researchers there. 11 Q And during your time at -- at NASA, 12 Dr. Lucht, were you still working with 13 electrolytes? 14 A Yes. And once again, primarily. 15 There's -- if we scan down a little bit further, I 16 can show you the publications that we had from the 17 work that I did. 18 Q Okay. We're -- we're scanning. 19 A Let me see here. It was with Marshall 20 Smart. So I don't see -- investigating, Daniel 21 Abraham, surface reaction. It must be further 22 down.
42 1 think we were synthesizing the phosphazenes. We 2 looked at some pyridine species and we looked at 3 other phosphates and phosphoramides, which is what 4 -- right there, hexamethylphosphoramide, Reference 5 No. -- Citation Nos. 26, Hex- -- 6 "Hexamethylphosphoramide as a Flame Retarding 7 Additive." 8 So we were looking at flame retardants 9 too, but I mean, it was also thermal stabilizing. 10 Q And then I know, Dr. Lucht, that -- that 11 it was generally in the 2005 time frame that -- 12 that you took a sabbatical and -- and went to NASA 13 and -- and it's fine if that's rough timing. 14 But will you provide a little bit of 15 detail of what you were doing for -- for NASA 16 during your sabbatical? 17 A Yeah. So I went and spent a month. 18 So -- so Yardney Technical Products manufactures 19 specialty batteries for the military and for NASA. 20 So when I went to NASA's Jet Propulsion 21 Laboratory, I was basically doing similar 22 collaborative work with NASA and Yardney Technical	44 1 There it is right there. 40, 2 "Electrochemical Characteristics of MCMC Lithium 3 Nickel Cobalt Oxide Electrodes in Electrolytes 4 with Stabilizing Additives." So that was in 2008. 5 It took a while to publish that. And the next one 6 after that too, 41. 7 Q And do you recall, Dr. Lucht, what the 8 stabilizing additives were? 9 A They were the -- they were -- a lot of 10 them were the same ones that we've been looking at 11 with Yardney. Dimethyl -- I'd have to look back 12 at the papers. I've got 170 papers; it's hard to 13 remember what's in each one of them specifically. 14 But I think -- you know, we -- we were 15 looking at the same types of additives as far -- 16 as far as I recall. 17 Q And -- and the title of the paper talks 18 about stabilizing additives. 19 Do you see that? 20 A Yep. 21 Q And -- and what does it mean for an 22 additive to be stabilizing, Dr. Lucht?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

45 1 A Well, it -- it depends. I mean, in -- 2 in the context of this, we were looking at thermal 3 stabilizing additives for the bulk electrolyte 4 that inhibited the decomposition of the LiPF₆ 5 salt. And so that was what it meant in that 6 context. 7 But, I mean, in the broader context of 8 battery stabilizing, there's -- there's many 9 different ways that you could potentially call 10 something stabilizing in terms of an electrolyte. 11 Q Okay. And for the purposes of -- of 12 what you were doing, I think you referred to it as 13 thermal stabilizing. 14 Can you define for me what it -- what 15 thermal -- "thermal stabilizing" means? 16 A In the context of these papers, the work 17 that we were doing is that LiPF₆ is a salt, 18 thermally disassociates into lithium chloride and 19 PF₅. PF₅ is a really strong Lewis acid that 20 degrades the electrolyte, and the additives that 21 we were developing inhibit that decomposition 22 reaction -- or I shouldn't say inhibit -- yeah,	47 1 A Yes. 2 Q And what types of batteries were you 3 working with during that time period? 4 A Lithium-ion batteries. 5 Q And what types of work were you doing on 6 lithium-ion batteries during the time period of 7 2007 to 2010? 8 A We were still primarily studying 9 electrolytes, but certainly we expanded 10 significantly into interfaces, the reactions that 11 were occurring at the interfaces of the 12 electrodes, both the cathode and the anode, which 13 were usually driven by the electrolyte. 14 And then in 2000 -- I also started kind 15 of collaborating -- around that time collaborating 16 with some companies on some separator technology. 17 Q And do you recall during the time period 18 of 2007 to 2010 what electrolytes you were 19 studying? 20 A Once again, predominantly the standard 21 LiPF₆ and carbonates, LiPF₆, EC, dialkyl 22 carbonates, with some form of additives to improve
46 1 they inhibit it, yeah. 2 Q And then turning back to your CV from 3 2007 to 2010, you list that you were the 4 codirector energy partnership at the -- 5 A Yep. 6 Q -- University of Rhode Island. Is that 7 correct? 8 A Yes. 9 Q And if you don't mind describing it, 10 what does it mean to be the codirector energy 11 partnership at the University of Rhode Island? 12 A Okay. So the university provided a pool 13 of funding for groups of researchers that were 14 studying related problems, and so myself and my 15 collaborator, Marion Gold, put in a proposal and 16 it was funded. And basically, they gave us a 17 small amount of money to kind of try and do 18 collaborative things with other people in the 19 broad area of energy. 20 Q And during that time from 2- -- from 21 2007 to 2010 as the codirector of energy 22 partnership, were you working with batteries?	48 1 their performance. 2 Q And do you recall what additives you 3 were working with to improve performance in the 4 2007 to -- 5 A Yeah. 6 Q -- 2010 -- 7 A Yeah. At that time, I was -- things -- 8 things -- things expanded quite a bit. We started 9 looking at LiBOB, Lithium bis(oxalato)borate quite 10 a bit. And then we developed a new salt that we 11 thought was going to be awesome and we were going 12 to try and file a patent and make tons of money, 13 but it doesn't always work out that easily. And 14 so -- which was lithium tetrafluoro oxalato 15 phosphate. 16 We started looking at a lot of different 17 oxalato-type species, and then various other 18 additives. We were -- you know, at this point, I 19 was really kind of expanding into -- to -- 20 starting to develop additives around -- starting 21 in 2010. 22 Q And you also said that you were working

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 12 of 120

September 13, 2022

1 on interphases. Can you provide examples of the 2 interphases you were working on? 3 A So the most important interphase in a 4 lithium-ion battery is the solid-electrolyte 5 interphase, or the SEI, on the anode. And so we 6 spent a lot of time during this time frame 7 studying the effects of additives on structure, 8 stability, composition of this SEI. 9 And then also starting about 2010, we 10 started looking at surface films on cathode parts 11 also. 12 Q And so what -- what is a surface film on 13 cathode parts? 14 A Well, in the context of what we were 15 doing in this 2007 to 2010 framework, especially 16 as you go to high oxidation potential, the 17 electrolyte's not particularly stable to the 18 surface of the cathode, and so the electrolyte can 19 decompose on the surface of the cathode. Some of 20 the decomposition products are insoluble and are 21 deposited on the surface of the cathode, which is 22 what the film is.	1 And then I started working with a 2 company called Optodot in Mass, I think around 3 2010ish, maybe 2011. 4 Q Okay. And then on your CV, you list 5 2006 to present as professor. And so can I read 6 from your résumé that from 2010 to 2022, you 7 continued your role as professor? Can you just 8 explain that a little bit more to me, Dr. Lucht? 9 A Yeah. So at 2006, I got promoted to 10 professor. I'm still a professor. 11 Q Yeah. Got it. 12 A Until I retire. 13 Q Oh, I got it. So -- so you were 14 professor and codirector simultaneously? 15 A I was professor and codirector, yeah. 16 Q Okay. 17 A The codirector thing was un- -- it was 18 really unrelated to being -- I mean, it's just a 19 side thing. It's like doing this or me being 20 an -- 21 Q Okay. 22 A -- editor. You know, which is down
1 Q And were you able to develop a solution 2 for the films on the cathode parts? 3 A We developed some additives that gave 4 some performance improvements after 2010 in the 5 2011 to, say, 2015 time frame. Although I would 6 still say as of today that, industry-wide, it's an 7 unsolved problem. 8 Q All right. And then going back, you 9 also indicated that you had started working with 10 separators in -- in that 2007 to 2010 -- 11 A I -- 12 Q -- time frame. 13 A I think -- 14 Q Is that correct? 15 A -- so, roughly. I had a couple small -- 16 you know, I was -- I was -- I was a young 17 professor trying to make success, and I was 18 working with anybody that would work with me. And 19 there was another small company that I think was 20 trying to make separators over in Connecticut. 21 And I went and met with them a few times. I don't 22 think I ever had a formal contract with them.	1 there -- you know, it's like you -- as a profe- -- 2 one of the nice things with being a professor is 3 you can take on a bunch of side gigs. 4 Q Understood. Understood. Thank you for 5 that. 6 And so do you hold any other -- or do 7 you currently hold any other positions besides 8 professor at the University of Rhode Island? 9 A Well, I'm currently a professor at the 10 University of Rhode Island; I'm currently an 11 associate director for the Journal of The 12 Electrochemical Society, which is -- there's an 13 honorarium associated with it; and I'm currently 14 the vice chair of the battery division of The 15 Electrochemical Society and will most likely 16 become the chair in about two weeks. 17 Q And have you ever -- strike that. 18 Other than Yardney, which you told us 19 about, have you ever worked for a battery supplier 20 either as an employee or as a consultant? 21 A I've had research contracts with 22 companies. I'm trying to think of -- and I've

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 13 of 120

September 13, 2022

53 1 consulted too at some points, so yes. 2 Q And which -- which companies have you 3 worked with as a consultant? Strike that. 4 Which battery supply companies have you 5 worked with as a consultant? 6 A I'm not sure. I mean, I did a couple 7 small consulting things a while back, but it was 8 never -- I really never did that much consulting 9 until -- until the litigation stuff started, like, 10 three or four years ago. I did -- and most of the 11 companies that I did do consulting with were kind 12 of small businesses like Optodot. I think I did 13 originally consult with them before then going on 14 to getting a research contract. Because you can't 15 -- you generally can't consult and do a research 16 contract. Although I currently have a consulting 17 contract with a company called Albemarle, which 18 makes lithium metal. 19 So -- but I had several other small 20 businesses a while ago for contracts. I mean, 21 for -- for -- for consulting. It's not including 22 research contracts.	55 1 very large research contract with BASF. I also 2 had a contract with Samsung. 3 Yardney. I currently have a contract 4 with Albemarle. Let's see. Keep going down 5 further. There it is. There's all the Yardney 6 contracts. You can see. See all of them? A 7 whole bunch of them. Keep going down further. 8 There's a row of them. Not battery stuff. 9 Yardney. 10 See, it was jet -- NASA Jet Propulsion 11 Laboratory. I had a research contract with them 12 too. Companies -- a little further down. 13 Yardney, Yardney, Yardney, Yardney, Yardney, 14 Yardney. 15 Coda. That was -- that was a Chinese 16 battery company. I forgot about that one. Coda 17 was a Chinese battery company with -- with 18 Yardney. Duracell. Novolyte is an electrolyte 19 company that I worked with. BASF. Maxwell, which 20 makes lithium ion capacitors. Optodot. There's 21 the Optodot in 2011. 22 2012. Oh, I was good. I was -- I
54 1 Q And so just -- just so I'm clear, the -- 2 the work that you did for Yardney, was that a 3 consultant position or was that a research 4 contract? 5 A Most of my -- most of my work has been 6 research contracts -- 7 Q Okay. 8 A -- or grants. But most -- with 9 companies they're typically contracts. 10 So yeah, most -- most -- like, all the 11 work -- I don't recall, but I don't think I ever 12 consulted for Yardney. I think all of -- there -- 13 there's a certain type of research funding called 14 SBIR, small research -- Small Business Innovation 15 Research government grants that are pretty small. 16 And so I had a series of subcontracts off these 17 government grants from Yardney. 18 Q And do you recall, as you sit here 19 today, other battery suppliers with which you had 20 a research contract? 21 A Yes, that I do, which is on the résumé 22 down below. The primary ones are BASF. I had a	56 1 started working with them before that. I was -- I 2 remembered that correctly. As you can see, 3 there's a lot of contracts that I've had. 4 There's Samsung there at 2013 and 2014. 5 And somewhere around that -- there's the 6 BASF, 1.7 million. And then if you keep going 7 down further, you've got the current ones that 8 I've got. Gotion, which is another Chinese 9 battery car manufacturer. And Albemarle. 10 Yeah. I've had a lot of contracts. 11 Q And so if we go back to Page 17, Page 17 12 has a header that says, Have received over 13 14 million in external research grants and 14 contracts since initial appointment. 15 A Yep. 16 Q That's what we were just walking through 17 as the long list of -- of research contracts 18 that -- that you've had, Dr. Lucht? 19 A Yeah. 20 Q Okay. Got it. 21 A And allow me to -- you know, part of 22 you -- when you're asking about the consulting

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 14 of 120

September 13, 2022

57 1 stuff, I don't always put the consulting stuff in 2 my résumé, or I didn't used to, because the résumé 3 was primarily something for the university. And 4 that's kind of -- you know, so I -- that's -- when 5 I -- it's hard for me to remember exactly. It's 6 easy for me to remember the contracts because 7 they're in the résumé. 8 Q That's very helpful. Thank you for -- 9 for -- for stepping through that explanation. 10 Dr. Lucht, have you ever designed or 11 developed a commercial battery? 12 A No. Well, I mean -- I mean, I worked 13 with Yardney while they were developing things. 14 Did I ever do it myself? No, but I was sitting in 15 on meetings where they were doing stuff. And did 16 they take some of my advice on things? Maybe. 17 Q Understood. 18 And in addition to electrolytes, which 19 we've walked through quite a bit already today, do 20 you have experience with selecting other 21 components for batteries? 22 A So one thing that you saw down there, I	59 1 Q And are these patents generally related 2 to electrolytes? 3 A Well, the first four are not, but the 4 second five are. We were doing thermochromic 5 polymers. I was doing that originally. I mean, I 6 was also doing batteries at the time too that 7 we -- that we filed a bunch of those patents 8 (indiscernible). 9 And we also had a few other patents that 10 we tried to file stuff and then didn't get issued. 11 Q Understood. 12 MR. DOUGLAS: I think we've been going 13 about an hour. Would this be a good time for a 14 first break, Dr. Lucht? 15 THE WITNESS: Okay. 16 THE VIDEOGRAPHER: We are going off the 17 video record. The time is 10:02 a.m. 18 (Whereupon, there was a recess in the 19 proceedings.) 20 THE VIDEOGRAPHER: We are back on the 21 video record. The time is 10:19 a.m. 22
58 1 had the one contract in 2010 with Optodot, or 2 2011. Optodot was developing separators. They 3 were developing separator technology and so that, 4 I did do with them. 5 And -- but most of the stuff's all been 6 electrolyte work. We've done some surface 7 modification of active materials too before 8 building cells. So that's not really electrolyte 9 work. But most of the stuff is related to the 10 surfaces of materials or the electrolytes. 11 Q Understood. And, Dr. Lucht, do you -- 12 do you hold any patents? 13 A Yeah. If you scan down -- or maybe it's 14 up. I think this is a public thing that's above 15 this. I think -- I think there's nine. But I'm 16 not -- sometimes I don't always keep good track of 17 the -- there's the -- there they are. Patent -- 18 so there's several of them that are issued and 19 then some that are still pending. 20 Q And so those patents start at what 21 appears to be Page 15 of your CV, Dr. Lucht? 22 A Yeah, it looks like it.	60 1 BY MR. DOUGLAS: 2 Q Welcome back, Dr. Lucht. 3 Before the break, we were talking a lot 4 about Yardney. Do you recall that? 5 A Yes. 6 Q And I believe that -- that you testified 7 that Yardney developed batteries for military 8 applications. Did I get that correctly? 9 A Yes. 10 Q And do you recall what types of military 11 applications those batteries from Yardney were 12 developed for? 13 A So two of the things that I recall them 14 making batteries for specifically was they had 15 batteries for the B-2 bomber that they were 16 designing and also through their collaboration 17 with NASA, Yardney's batteries are the batteries 18 that power the Mars rovers. 19 Q And for the electrolytes and additives 20 that you worked on with Yardney, were -- would 21 those electrolytes and additives only be 22 applicable to military applications?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 15 of 120

September 13, 2022

61 1 A Not necessarily. 2 Q What other technologies could the 3 electrolytes and additives that we talked about 4 earlier today and that you developed for Yardney 5 could -- could be -- could they be used for? 6 A Wait. Could we restate -- restate the 7 question? 8 Q Yes, sir. Thank you. 9 What other technologies could the 10 Yardney electrolytes and additives be used for? 11 A They could potentially be used for 12 consumer electronics or automotive applications. 13 Q And turning back to the papers that we 14 discussed earlier, I believe we were looking at 15 the 2005 papers, and specifically Paper No. 29. 16 It has the electrolytes and additives that you 17 developed for Yardney. 18 Is that correct? 19 A That was one of the first ones, yes. 20 The first series of ones. 21 Q And do you recall in -- in Paper 29 or 22 any of the -- well, strike that.	63 1 exactly what all -- we were looking at a lot of 2 things. But I don't think at that time 3 fluorinated organic solvents was one of our 4 primary additives that we were looking at. 5 Q And prior to 2006, outside of your work 6 with Yardney, do you recall looking at nitriles as 7 an additive? 8 A Prior to 2006, pretty much all of my 9 battery work was with Yardney -- 10 Q Okay. 11 A -- collaborative. 12 Q And so it would be fair to say that you 13 did not look at nitriles as an additive prior to 14 2006? 15 A I think what I said is I don't recall 16 exactly, but it wasn't the primary -- it was not 17 one of the primary additive structures that we 18 were focused on. 19 Q And after 2006, do you recall 20 investigating the use of nitriles as an additive 21 to an electrolyte? 22 A Yes.
62 1 Do -- do you recall if you talked about 2 or relied on nitriles in Paper 29 that you wrote 3 with respect to your Yardney work? 4 A In Paper 29? I don't recall exactly. I 5 don't think so. But it may -- we looked at 6 several different things at the time and I'm not 7 sure exactly what's on that paper. I haven't 8 looked at it lately. 9 Q And do you recall whether you worked 10 with nitriles during that 2002 to 2006 time frame 11 when you were working with Yardney? 12 A I don't really recall. I -- that was 13 not the primary electrolyte additive that we were 14 focused on or type class of add -- additives. We 15 looked at a lot of different things, and it may 16 have been something we looked at. But I -- it 17 wasn't the primary focus. 18 Q And do you recall during your time with 19 Yardney between 2002 and 2006 looking at 20 electrolytes that contained fluorine-containing 21 organic solvents? 22 A No. I -- I don't recall, once again,	64 1 Q And after 2006, what investigations did 2 you do with respect to nitriles as an additive to 3 an electrolyte? 4 A So during my collaboration with BASF, we 5 were looking at high voltage stability stabilizing 6 additives, and they recommended us looking at 7 nitriles, and so we did. 8 Q And do you recall, Dr. Lucht, whether 9 you published papers related to nitriles and your 10 work with BASF? 11 A I don't recall exactly, but I don't 12 think we did because I don't think our results 13 were good enough or convincing enough to publish. 14 Q And prior to 2006, do you recall working 15 with electrolytes containing fluorine-containing 16 organic solvents? 17 A Once again, I don't recall exactly, but 18 fluorine-containing solvents were not our pri -- 19 the primary focus of our research prior to 2006. 20 Q And after 2006, do you recall working 21 with electrolytes containing fluorine-containing 22 organic solvents?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 16 of 120

September 13, 2022

65 1 A Yes. 2 Q And after 2006, what work did you do 3 with electrolytes containing fluorine-containing 4 organic solvents? 5 A I published, I don't know, probably at 6 least a half a dozen papers on fluoroethylene 7 carbonate as an additive for lithium-ion 8 batteries. 9 Q And, Dr. Lucht, do you recall the -- the 10 time frame in which you published those papers? 11 A Well, we can look -- scan down. My 12 guess is the first paper with FEC was probably 13 around 2010 or 2012 or something like that. 14 Because we looked at VC a bunch. There's propane 15 sultone. 16 Further down. Keep going. There's VC. 17 Keep going. Keep going. Keep going. Further. 18 Probably go a little further. A little further. 19 We're silicon now, so this is -- we're getting 20 closer to where we probably were looking at it 21 because it was a good after silicon. 22 Keep going. Hmm. So later than I was	67 1 supplemental declaration. Is that what you mean 2 by two? 3 Q Yes, sir. 4 And so I would like you to look first at 5 what I have as Exhibit 2008, which is your first 6 declaration, but I understand, Dr. Lucht, that you 7 just have it marked as -- as your declaration? 8 A Yes. 9 Q So I'm -- and for the purpose of the 10 record, that -- your first declaration has been 11 marked as Exhibit 2008. 12 A Yes. 13 Q Do you recognize the declaration as the 14 first declaration that you provided in 15 IPR 2021-01440? 16 A Yes, it appears to be that. 17 Q And if you'll please turn to Page 26, or 18 the last page. 19 A Yes. 20 Q Is that your signature, Dr. Lucht, on 21 Page -- 22 A That is, yes.
66 1 thinking. There's -- 91, "Comparative Study of 2 Fluoroethylene Carbonate and Vinylene Carbonate." 3 I didn't -- I wasn't looking. There may have been 4 something before that. But we published it in 5 2014 so we probably started working on it 6 something like 2012, maybe 2011. 7 Q Okay. Excellent. We can stop sharing 8 the -- the CV. 9 All right, Dr. Lucht. I would like to 10 look at your declarations in these matters and -- 11 and try to get them all straight. So going into 12 this, I'd like to apologize as we sort of jump 13 around a little bit. 14 But I would like to at least just make 15 sure that we have all the right declarations and 16 we're calling them the right things, if that's 17 fair enough to you? 18 A Yes. 19 Q Okay. So I'd like to start with the 20 01440 proceeding. And, Dr. Lucht, you recall 21 submitting two declarations in that proceeding? 22 A Yes. The declaration and then a	68 1 Q -- 26? 2 For the purposes of trying to keep -- 3 keep this straight, if I refer to this 4 declaration, Exhibit 2008, in the 01440 case as 5 your first '446 declaration, would you understand 6 that I'm referring to the declaration we're 7 currently looking at, Exhibit 2008? 8 A Yes. 9 Q Thank you. 10 Now will you please turn to your 11 supplemental declaration in IPR 2021-01440. 12 A Yes. 13 Q And if you turn to Page 9, will you 14 confirm to me that that is your signature? 15 A Yes. 16 Q So if I refer to your second '446 17 declaration today, would you understand that I'm 18 referring to Exhibit 2015 entitled "Declaration of 19 Brett Lucht, Ph.D." that was filed in 20 IPR 2021-01440 on July 8th, 2022? 21 A Yes. 22 Q All right. And, Dr. Lucht, you also

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 17 of 120

September 13, 2022

1 submitted two declarations in the IPR 2021-01443 2 proceeding. Correct? 3 A Oops. 4 Yes. 5 Q And do you have those declarations in 6 front of you, Dr. Lucht? 7 A Yes. 8 Q And so looking at your first 9 declaration, will you please turn to Page 25 of 10 that document. 11 A Yes. 12 Q And on Page 25, is that your signature, 13 Dr. Lucht? 14 A Yes. 15 Q So if I refer to your first declarat- -- 16 your first '019 declaration today, would you 17 understand that I'm referring to Exhibit 2008, 18 entitled "Declaration of Brett Lucht, Ph.D." that 19 was filed in IPR 2021-01443 on January 18th, 2022? 20 A Yes. 21 Q Okay. And then will you turn to your 22 supplemental declaration in the 01443 matter.	1 the first '446 declaration and your first '019 2 declaration and let me know if you identify any 3 substantial differences between the two. 4 A I'm not sure if I understand what your 5 question is. 6 Q Fair enough. 7 And if you turn to the second '446 8 declaration and your second '019 declaration, 9 would you agree with me that there's substantial 10 overlap between these two declarations? 11 A Once again, looking through them quickly 12 here, there are similarities between the two. 13 Q And, Dr. Lucht, can we turn to your 14 first declaration in the 01441 IPR. 15 A Yes. 16 Q And will you turn to Page 30 of that 17 declaration please. 18 A Excuse me, what -- what -- the first 19 of -- this is the 441? 20 Q Yes, sir. The first declaration in the 21 0144 -- 1441 proceeding in the '035 patent. 22 A Hold on. I think these are backwards,
1 A Yes. 2 Q And will you turn to Page 9 with me, 3 Dr. Lucht. 4 A Yes. 5 Q And is that your signature on Page 9, 6 Dr. Lucht? 7 A Yes. 8 Q And if I refer to your second '019 9 declaration today, would you understand that I'm 10 referring to Exhibit 2015 entitled "Declaration of 11 Brett Lucht, Ph.D." that was filed in 12 IPR 2021-01443 on July 8th, 2022? 13 A Yes. 14 Q And would -- looking at both the first 15 declara- -- the first '446 declaration and the 16 first '019 declaration, would you agree that there 17 is substantial overlap between these two 18 declarations? 19 A I would have to look through them, but 20 yes, my recollection is that there is some 21 overlap. 22 Q And, Dr. Lucht, will you look at both	1 the exhibits. 2 They gave me two of the supplementals 3 declaration. I do not have the original 4 declaration. I got two copies of the 5 supplemental. Both dated July -- with my 6 signature, July 8th, 2022. I could look through 7 it more thoroughly, but that's what's there. 8 MS. WRIGHT: Counsel -- 9 BY MR. DOUGLAS: 10 Q So -- 11 MS. WRIGHT: Oh. 12 MR. DOUGLAS: Oh, sorry. Go ahead. 13 Yeah. Go ahead. 14 MS. WRIGHT: Yeah, Counsel. We did 15 that -- we did that by mistake, so you may need to 16 put that on screen also. 17 BY MR. DOUGLAS: 18 Q Dr. Lucht, would you have the ability to 19 print that first declaration on a break if -- 20 if -- 21 A I can, yeah. I -- I -- I'd have to look 22 on my computer for the file. I think I've got it,

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

73 1 so I can print it. Yeah. 2 How many pages is it? 30, you said? 3 Q It's -- it's -- it's 30. Maybe just for 4 the purpose -- maybe for the purposes of keeping 5 things going, we'll -- we'll share it on the 6 screen so we can -- 7 A Okay. 8 Q -- make sure that we -- 9 A I can just -- I can call it up on my 10 computer if you prefer it that way too. 11 Q Yeah. I -- I think that will be fine. 12 If you -- if you have access to a clean version of 13 it, that -- that would be fine. 14 A Yes, I do. 15 Q Okay. I'll just give you a moment to -- 16 to find that, Dr. Lucht. 17 A Yeah, let me just -- my -- my -- same 18 thing. Let me just make sure that I've got it 19 before I say that I do. 20 Q Of course. Of course. 21 A Sorry, the computer's slow. 22 Q No problem.	75 1 Q And if I refer to your second '035 2 declaration today, would you understand that I'm 3 referring to Exhibit 2015 entitled "Declaration of 4 Brett Lucht, Ph.D." that was filed in 5 IPR 2021-01441 on July 8th, 2022? 6 A Yes. 7 Q Okay. So I'd like to talk about the 8 preparation of your first declarations in the 9 '441, '019 and '035 proceedings. 10 A Okay. 11 Q Do you recall being asked to prepare 12 these first declarations? 13 A Yes. 14 Q And do you recall about when you were 15 asked to prepare these first declarations? 16 A Not exactly. When -- they were January, 17 so it was probab- -- January 2022. I -- I 18 don't -- sometime in late '21. 19 Q Okay. And do you recall about how much 20 time you spent preparing the first declarations? 21 A Once again, not exactly. You know, 22 sev- -- 10 to 20, maybe 30 hours or something. I
74 1 A Opening it so I can look at the page you 2 want. Let's see. 3 Okay. I have that file open. The 4 declaration for the 441 patent -- or, I mean, for 5 the 441 IPR, Patent '035. And on Page 30, there 6 is my signature dated January 12th, 2022. 7 Q Excellent. 8 And if I refer to your first '035 9 declaration today, would you understand that I'm 10 referring to Exhibit 2008 entitled "Declaration of 11 Brett Lucht, Ph.D." that was filed in 12 IPR 2021-01441 on January 12th, 2022? 13 A Yes. 14 Q Excellent. 15 And then turning to your second 16 declaration, which I believe you do have a copy 17 of, in the '035 matter. 18 A Yes. 19 Q And if you'll turn to Page 7, Dr. Lucht. 20 A Yes. 21 Q And is that your signature on Page 7? 22 A Yes.	76 1 don't recall exactly. 2 Q And I would like to also ask about the 3 preparation of the second declarations in the 4 '446, '019, and '035 matters. 5 And do you recall being asked to prepare 6 the second declarations? 7 A Yes. 8 Q And do you recall -- oh, sorry. 9 Do -- do you recall when you were asked 10 to prepare the second declarations? 11 A I think it was shortly after the 12 deposition of your expert witness, which happened 13 to occur on my birthday, 23rd of June. 14 Q Sorry about that. 15 A It's okay. 16 Q And do -- do you recall about how much 17 time you spent preparing the second declarations? 18 A Once again, I'd have to look back at my 19 notes in terms of the hours that I logged. But 20 less than for the first depositions. 21 Q Okay. 22 A Or declarations. Sorry, declaration.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 19 of 120

September 13, 2022

1 Q All right. Now I'd like to turn back to 2 the first '446 declaration, Exhibit 2008 in 01440. 3 And do you have that, Dr. Lucht? 4 A Yes, I have the -- my first declaration 5 from the '446 patent. 6 Q Excellent. 7 And if you would turn with me to 8 Paragraph 8 on Page 3. 9 A Yes. 10 Q And is this a complete list of the 11 documents that you considered and relied upon for 12 opinions set forth in the first '446 declaration? 13 A As far as I recall. 14 Q And are there any other documents that 15 you relied upon when preparing this declaration? 16 A Not that I recall. 17 Q And I would like to turn to the first 18 '019 declaration. 19 A Yep. 20 Q And I'd like to point you to Paragraph 8 21 of Page 3 of Exhibit 2008 of the -- in the 1443 22 case.	1 that you relied upon when preparing your first 2 '035 declaration? 3 A Not that I can recall. 4 Q Okay. I would like to now turn to the 5 second declaration in the '446 case. 6 And if you turn to me -- if you turn 7 your attention to Paragraph 8 on Page 3 of 8 Exhibit 2015 in IPR 0 -- 2021-01440. 9 A Yes. 10 Q Is -- is this a complete list of 11 documents that you considered and relied upon for 12 your opinions set forth in the second '446 13 declaration? 14 A As far as I recall. 15 Q And do you recall any other documents 16 that you relied upon when preparing your second 17 '446 declaration? 18 A Not that I can recall. 19 Q All right. I would like to turn your 20 attention to Paragraph 8 on Page 3 of the second 21 '019 declaration please. 22 A Wait a second. Too many different
1 A Yes. 2 Q And is this the complete list of 3 documents that you considered and relied upon for 4 opinions set forth in the first '019 declaration? 5 A As far as I recall. 6 Q And are there any other documents that 7 you relied on when preparing your first 8 declaration in the '019 case? 9 A Not that I recall. 10 Q I would like to now turn to the first 11 '035 declaration. 12 A Okay. 13 Q And if you'd turn with me to Page 8. 14 A Paragraph 8? 15 Q I'm sorry. Thank you, Dr. Lucht. 16 Page 3, Paragraph 8. 17 And is this -- in Paragraph 8, is this a 18 complete list of the documents you considered and 19 relied upon for the opinions set forth in the 20 first '035 declaration? 21 A As far as I recall. 22 Q And do you recall any other documents	1 things. What -- 2 Q Sorry about this. It's -- 3 A Is this '441, '442, or '443? 4 Q This -- this is 1443, '019 patent. 5 A 1443. Okay. Sorry. 6 Q No problem. 7 A I'm at -- I'm at 1443, my second dep- -- 8 8 declaration, yes. 9 Q Yes, sir. 10 And looking at your second declaration, 11 which has been marked as Exhibit 2015 in 12 IPR 2021-01442, Paragraph 8, is this a complete 13 list of documents that you considered and relied 14 upon for opinions set forth in the second '019 15 declaration? 16 A Yeah, I've got this as '443. Is that 17 correct? 18 Q I -- I'm sorry, Dr. Lucht. Mine -- my 19 copy's cut off. I -- I -- I apologize. Not -- 20 A That's -- 21 Q -- trying -- 22 A -- fair.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 Q -- to -- 2 A No. So -- yeah. Those -- those -- 3 those exhibits appear to be what I reviewed, I 4 think. As far as I recall. 5 Q And -- and do you recall any other 6 documents that you relied upon when preparing your 7 second '019 declaration? 8 A I do not recall any other document. 9 Q And now I would like you to turn to your 10 second '035 declaration please. And that's in the 11 1441 matter. 12 A Yes. 13 Q And if you will turn to Paragraph 8 on 14 Page 3 with me. 15 A Yes. 16 Q Is this a complete list of documents 17 that you considered and relied upon for the 18 opinions set forth in the second '035 declaration? 19 A As far -- far as I recall. 20 Q And do you recall any other documents 21 that you relied upon when preparing your second 22 '035 declaration?	81 1 first '446 declaration and the second '446 2 declaration the documents that -- that you 3 specifically relied upon. And I -- and I would 4 like to understand whether there are any other 5 documents that you relied upon for either of those 6 declarations that I should know about. 7 A As -- as I think I already said -- 8 MS. WRIGHT: Objection; form. 9 THE WITNESS: -- the documents that are 10 listed here are the documents that, as far as I 11 recall, were the primary documents, the documents 12 that I used to form the declarations. 13 BY MR. DOUGLAS: 14 Q So turning to the -- turning to your 15 declaration -- your first declaration in the '446 16 case. 17 A Yes. 18 Q And turning back to Paragraph 8 on 19 Page 3. 20 A Yes. 21 Q Do you recall reviewing and relying on 22 any other exhibits in the 01440 case when
82 1 A Not that I can recall. 2 Q And with respect to your first and 3 second declarations in the '446 case, will you 4 agree with me that if -- if a document or exhibit 5 was not listed in these tables, you did not 6 consider it as part of your opinions? 7 A Could you restate that question? 8 Q Yes. 9 And with respect to your first '446 10 declaration and your second '446 declaration, will 11 you agree with me that if a document or exhibit 12 was not listed in these tables in Paragraph 8 of 13 each of these declarations, that you did not 14 consider it as part of rendering your opinion? 15 A I guess I don't really understand what 16 you mean by "considering it." I mean, I -- I read 17 lots and lots of battery papers on lots and lots 18 of things. So I -- I can't say that something 19 that I read somewhere didn't have some influence 20 on something that I expounded upon. 21 Q And I appreciate that, Dr. Lucht. I -- 22 I -- I am trying to understand with respect to the	84 1 preparing your declaration? 2 MS. WRIGHT: Objection; form. 3 THE WITNESS: I mean, I -- my 4 declaration says, In the preparation of this 5 declaration, I have reviewed the following 6 documents. And those documents I reviewed 7 specifically for the declaration. 8 BY MR. DOUGLAS: 9 Q And would it be fair to say that -- that 10 that statement that you made that you reviewed the 11 following documents in preparation of the 12 declaration, that applies across all six of your 13 declarations? 14 A I believe -- I mean, that's -- that -- 15 once again, what's stated in the declarations that 16 I reviewed those following -- these documents for 17 the declaration. Yes. 18 Q Okay. Okay. Dr. Lucht, would you 19 consider that the ca- -- strike that. 20 Dr. Lucht, are the cathode patents that 21 we're here to talk about today related to 22 secondary batteries?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 21 of 120

September 13, 2022

85 1 A Could you please -- 2 MS. WRIGHT: Objection; form. 3 THE WITNESS: Could you please restate 4 your question? 5 BY MR. DOUGLAS: 6 Q Yes. 7 Doc- -- Dr. Lucht, are you familiar with 8 the term "secondary battery"? 9 A Yes. 10 Q What is a secondary battery? 11 A A secondary battery is a rechargeable 12 battery. 13 Q And how is a secondary battery different 14 from a primary battery? 15 A Primary batteries are not rechargeable. 16 They're one use. 17 Q And what are some examples of a 18 secondary battery, Dr. Lucht? 19 A Lithium-ion batteries, for one. 20 Nickel-metal hydride, NiCad, lead acid. 21 Q And you said a lithium-ion battery could 22 be a secondary battery?	87 1 Q And in your experience, what are the 2 common components of the cathode? 3 A They're typically lithiate -- lithiated 4 metal oxides or lithiated metal phosphates. 5 Q And would those -- would those common 6 components that you just listed have been the 7 common components in 2006? 8 A Things have somewhat evolved, but 9 they're similar. 10 Q And -- and what would the common 11 components of the cathode have been in 2006? 12 A In 2006? As I recall, most batteries 13 were either lithium cobalt oxide cathodes, or when 14 I was working with Yardney, they used NCA, lithium 15 nickel cobalt aluminum. 16 Q And, Dr. Lucht, what is the purpose of 17 the anode in a lithium-ion secondary battery? 18 A Once again, the anode acts as the anode 19 of the battery. So when you charge it, it's where 20 the lithium goes. 21 Q And in your experience, what are the 22 common components of the anode?
86 1 A Lithium-ion batteries are secondary 2 batteries. 3 Q And what are the main components of a 4 lithium-ion secondary battery? 5 A The primary components of a lithium-ion 6 battery are the cathode, which is typically a 7 lithiated metal oxide; the anode, which is mostly 8 graphite and other things; there's an electrolyte 9 which usually contains some kind of solvent that 10 dissolves a salt which allows the ions to go back 11 and forth; and then a separator. There's also the 12 current collectors in the housing. 13 Q And what role does the cathode provide 14 in a lithium-ion secondary battery? 15 A Could you restate your question? 16 Q Sure. 17 What -- what is the primary purpose of a 18 cathode in a lithium-ion secondary battery? 19 A Well, the -- the cathode acts as the 20 cathode, and the lithium battery is also the 21 source of the lithium ions, the primary source of 22 the lithium ions which are cycling back and forth.	88 1 A I mean, most common is graphite. 2 Silicon's also been used in silicon graphite 3 composites. 4 Q And, Dr. Lucht, were graphites and 5 silicons common components in about 2006? 6 A Various forms of graphite or other hard 7 carbons were the primary components in 2006. 8 Q And, Dr. Lucht, what role does lithium 9 provide in the lithium-ion secondary battery? 10 A I don't really understand your question. 11 Q What is the purpose of lithium in a 12 lithium-ion secondary battery? 13 A Well, I mean, it's -- it's the ions 14 being transported back and forth. So, you know, 15 the electrons compensate for the charge of the 16 lithium cation which goes back and forth. 17 Q And what -- what happens in a 18 lithium-ion secondary battery during charge and 19 discharge? 20 A Well, as you charge it, the lithium ions 21 leave the cathode, go through the electrolyte, and 22 into the anode to store energy.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 22 of 120

September 13, 2022

89 1 And then as you discharge it, the 2 lithium cations leave the anode, go through the 3 electrolyte and into the cathode, and the 4 electrons go and do work. 5 Q Are you familiar with the term 6 "intercalation" [sic] as it results -- as it 7 relates to lithium-ion secondary batteries? 8 MS. WRIGHT: Objection; form. 9 THE WITNESS: I am familiar with the 10 word -- the term "intercalation." 11 BY MR. DOUGLAS: 12 Q And what does the term "intercalation" 13 mean with respect to lithium-ion secondary 14 batteries? 15 A It's one of the mechanisms in which 16 lithium can be taken into or out of electrode 17 materials. 18 Q And are you familiar with the term 19 "deintercalation" with respect to lithium-ion 20 secondary batteries? 21 A Yes. 22 Q And what does the term "deintercalation"	91 1 nickel manganese oxide. There's lithium -- as I 2 said, from Yardney, nickel cobalt aluminum, NCA. 3 And then there's the mixed lithium manganese -- 4 cobalt nickel manganese, NCMs. 5 Q Are you familiar with the term 6 "transition metal"? 7 A Yes. 8 Q And what does the term "transition 9 metal" mean? 10 A "Transition metal" refers to the metals 11 that are in the transition series of the periodic 12 chart -- periodic table of elements. 13 Q And what role do transition metals serve 14 in a lithium-containing transition metal oxide 15 used in lithium-ion secondary batteries? 16 A Could you restate that question? 17 Q Yes. 18 What is the -- what is the purpose of 19 transition metals in a lithium-containing 20 transition metal oxide used in lithium-ion 21 secondary batteries? 22 A The -- the main -- I mean, they're --
90 1 mean with respect to lithium-ion secondary 2 batteries? 3 A "Deintercalation" means when the lithium 4 ions leave the electrode material. Certain types 5 of (indiscernible). 6 Q And are you familiar with the term 7 "lithium-containing transact- -- transition metal 8 oxide"? 9 A Yes. 10 Q And what does the term 11 "lithium-containing transition metal oxide" mean? 12 A It's a -- it's a -- it's a transition 13 metal oxide which has lithium in it, which is a 14 common cathode. Gen- -- general classification of 15 cathode materials. 16 Q And what are some examples of 17 lithium-containing transition metal oxides used in 18 lithium-ion secondary batteries? 19 A Lithium cobalt oxide. Lithium manganese 20 oxide. 21 Q Are there any others, Dr. Lucht? 22 A There are others, yeah. There's lithium	92 1 they're what the cathode is composed of. They're 2 the transition metal oxide. The main purpose of 3 the transition metals being in the oxide are that 4 they can change their oxidation state, which 5 allows them to basically -- battery charge and 6 discharge. 7 Q And in your experience, Dr. Lucht, what 8 are some examples of transition metals used in 9 lithium-ion secondary batteries? 10 A Well, as I said a moment ago, the 11 primary ones for -- wait, did you say metal oxide? 12 Q Just transi- -- transition metals, 13 Dr. Lucht. 14 A I'm sorry. Could you -- could you 15 restate the question in terms of what -- what the 16 cathode was that you were describing? 17 Q Absolutely. 18 In your experience, what are some -- some 19 examples of transition metals used in lithium-ion 20 second -- secondary batteries? 21 A Cobalt, nickel, manganese, iron are the 22 primary ones.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 23 of 120

September 13, 2022

93 1 Q What about in 2006? What are some 2 examples of transition metals that were used in 3 lithium-ion secondary batteries? 4 A In 2006, probably the same ones. 5 Cobalt, nickel, manganese, and iron. 6 Q And when you were working with Yardney, 7 developing a lithium-ion secondary battery -- 8 strike that. 9 Do I understand you correctly that when 10 you were working with Yardney, you were developing 11 lithium-ion secondary batteries? 12 A I was collaborating with Yardney, and 13 Yardney was manufacturing and developing 14 lithium -- secondary lithium-ion batteries. 15 Q And do you recall when you were 16 collaborating with Yardney, what transition metals 17 were used in the lithium-ion secondary batteries? 18 A Most of their systems at the time, as I 19 recall, used cobalt and nickel. 20 Q And do you recall why those transition 21 metals were selected for the Yardney lithium-ion 22 secondary batteries?	95 1 as a transition metal. Is that correct? 2 A Yes. 3 Q And do you recall, Dr. Lucht, using 4 manganese as a transition metal in any of these 5 batteries that you de- -- that you collaborated on 6 with Yardney or any of your other collaborations? 7 A Yes. 8 Q And why did you select manganese as a 9 transition metal in those cases? 10 A Well, we used those materials because 11 that's what Yardney was using. I mean, we were 12 collaborating with companies that were studying 13 various types of cathode materials, and that was 14 what was in them. 15 Q And are you aware, as you sit here 16 today, Dr. Lucht, why Yardney would have selected 17 manganese as a cathode material? 18 A Because it has multiple oxidation states 19 and lithium manganese oxide is a good stable 20 cathode material, as is NCM. And -- and as is 21 lithium nickel manganese oxide. 22 Q And do you recall why Yardney would have
94 1 A The military applications that they were 2 working on were high-energy-density, and so that's 3 why they used the nickel cobalt system. 4 Q Is it common to have used cobalt for 5 high-energy-density applications? 6 A Could you restate that question again? 7 Q Sure. 8 Was it common to use cobalt as a 9 transition metal when you were working with 10 high-energy-density applications? 11 A For the systems that Yardney used and 12 NASA used at the time, their primary system was 13 nickel cobalt. So cobalt was common, yes. 14 Q And were -- were nickel cobalt used as 15 transition metals for applications outside of 16 military applications? 17 A Those were used outside, yes. I -- I 18 think cobalt was more so at that time. I think 19 lithium cobalt oxide was more widely used outside 20 for consumer electronics and things. But I'm not 21 positive of that. 22 Q And I believe that you listed manganese	96 1 selected nickel as a transition metal in its 2 cathode? 3 A The nickel-based materials were higher 4 capacity. 5 Q And do you recall why Yardney selected 6 cobalt as a transition metal as part of its 7 cathode material? 8 A My recollection is that the cobalt makes 9 the layered lithium metal oxides more stable. 10 It's kind of required, for the most part. 11 Q And, Dr. Lucht, have you -- are you 12 familiar with the term "doping" as it relates to 13 lithium-containing transition metal oxides? 14 A Yes. 15 Q And what does the term "doping" mean 16 with respect to lithium-containing transition 17 metal oxides? 18 A Doping generally is considered when 19 you're adding very low concentrations of some 20 other metal into the metal oxide. 21 Q Are you familiar with the term "doping 22 element," Dr. Lucht?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 24 of 120

September 13, 2022

97 1 A I am. The doping element is dopant. I 2 mean, they're -- they're similar terms, you know, 3 in terms of doping element, I guess. Yes. I know 4 what you're -- I know what you mean by "doping 5 element." 6 Q Okay. What -- what -- would it be fair 7 to use the terms "doping," "doping element," or 8 "dopants" interchangeably? 9 Is -- is that fair, Dr. Lucht? 10 A I -- I -- from -- from my perspective, a 11 doping element is a dopant. Or -- I mean, 12 everything's an element, so -- 13 Q Okay. Fair -- fair enough. 14 So when -- when developing a lithium-ion 15 secondary battery, is it common to dope with 16 transition metals? 17 A Are you referring to what was happening 18 in 2006? 19 Q Sure. Let's -- going back to 2006, when 20 developing a lithium-ion secondary battery, was it 21 common to dope with transition metals? 22 A I'm not aware of it being really common	99 1 they were buying commercial car -- commercial 2 cathode particles that were doped with transition 3 metals in the 2006 time period? 4 A They were primarily using NCA, nickel 5 cobalt aluminum. 6 Q And when developing a lithium-containing 7 transition metal oxide, do you ever dope with 8 non-transition metals? 9 A Once again, I -- what time frame are you 10 talking about? 11 Q Fair enough. 12 When developing a lithium-containing 13 transition metal oxide in the 2006 time frame, do 14 you -- did you dope with non-transition metals? 15 A Well, the -- the NCA material contains 16 5 percent aluminum. I think it was 5 percent. So 17 it's kind of high for what I would call a dopant. 18 But maybe it's called a dopant. 19 So I don't know. I think -- I think 20 their NCA was 80 percent nickel, 15 percent 21 cobalt, 5 percent aluminum. But I'd have to look 22 back at the papers.
98 1 to dope with transition metals at that time. 2 Q Did it become more common, Dr. Lucht, to 3 dope with transition metals after 2006? 4 A I think it became more common after 5 that, yeah. 6 Q And do you recall about what time period 7 it became common to dope with transition metals? 8 A I -- I would say I'm not really certain. 9 I mean, when I started working with Yardney and 10 also with BASF in about 2012 or 2013, there were a 11 lot of people that were using a lot of dopants at 12 that time. So I think it was fairly -- you know, 13 it was -- it was -- it was something people were 14 doing. How much -- how much it was going on 15 before that, I'm not sure. 16 Q And do you recall whether Yardney was 17 doping with transition metals in that 2006 time 18 period? 19 A Well, I mean, they weren't doing any 20 doping of things that I'm aware of. They were 21 buying commercial cathode particles. 22 Q And do you recall, Dr. Lucht, whether	100 1 Q And just to make sure the record is 2 clear, will you define "non-transition metals" 3 please. 4 A They are the metals that are not in the 5 transition period. 6 Q Dr. Lucht, are you familiar with the 7 process by which one dopes a lithium-containing 8 transition metal oxide? 9 A I mean, I'm generally familiar with the 10 method of synthesis of cathode materials, and 11 through the synthetic process, one can add 12 dopants. 13 Q And, as you sit here today, do you 14 recall examples of dopants in the 2006 time frame 15 that were used with respect to lithium-containing 16 transition metal oxides in a secondary battery? 17 A Once again, at that time frame, I don't 18 really recall transition metal dopants from -- 19 from the work that I was doing. I mean, as I 20 said, Yardney used NCA which had 5 percent 21 aluminum. But I -- I don't -- I -- that's kind of 22 high for what I would call a dopant.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 25 of 120

September 13, 2022

1 Q Then after 2006, are you aware of 2 examples of dopants that were used with respect to 3 lithium-containing transitional -- transition 4 metal oxides in secondary batteries? 5 A So -- so once again, you know, starting 6 when I was working with BASF, one of BASF's 7 primary objectives was synthesizing cathode 8 materials on large-scale for production product 9 purposes. And some of the research projects at 10 that time were using both transition metals 11 dopants and other dopants. Many different metals. 12 I don't remember all the specifics, but 13 there were a lot of different metals people were 14 using. 15 Q And so I believe, Dr. Lucht, your -- 16 your last answer related to transition metals. 17 Let me ask my question again with respect to 18 non- -- non-transition metals. 19 What are some examples of dopants -- 20 strike that. 21 What are some examples of non-transition 22 metal dopants that you're aware of that have been	101 1 the BASF years. (Indiscernible) something that 2 was supposed to be. 3 Q And have you developed batteries with 4 zirco- -- zirconium as a dopant? 5 A Not to my knowledge. Most of the work 6 that we did was really on, you know, not 7 complicated cathodes materials, you know. 8 Q Is it fair to say that zirconium wasn't 9 chosen because of its complexity? 10 MS. WRIGHT: Objection; form. 11 THE WITNESS: I don't really understand 12 your question. 13 BY MR. DOUGLAS: 14 Q That's fair. 15 Dr. Lucht, as you sit here today, why do 16 you believe that you have not worked on batteries 17 with zirconium as a dopant? 18 A Most of the work that I do is on 19 electrolytes, and we study commercially-supplied 20 cathode particles. 21 Q Okay. 22 A And most of those don't contain dopants,
102 1 used with respect to lithium-containing transition 2 metal oxides in a secondary battery? 3 A Well, aluminum from the NCA. That 4 wasn't a dopant at that point, I would say. 5 As in these patents, magnesium, people 6 starting using. I think people used germanium and 7 tin. They're non-transition. I think sometimes 8 things were doped with calcium maybe or potassium 9 or sodium. But I don't -- you know, once again, 10 people looked at a lot of different things. 11 I mean, since -- you know, once again, 12 since 2016 -- 20- -- 2006 -- later. I mean, 13 recently -- I don't -- I don't recall it being a 14 common thing in 2006. But once again, when I was 15 working with BASF starting in 2012, 2013, it was 16 more common. 17 Q Okay. Are you familiar with zirconium 18 being used as a dopant in lithium-containing 19 transition metal oxides? 20 A I saw it in these series of patents that 21 are being discussed here, and I think it was 22 something that was used by some -- by -- during	103 1 to my knowledge. 2 Q Okay. And, as you sit here today, 3 Dr. Lucht, are you aware of any benefits of using 4 zirconium as a dopant? 5 A Specifically benefits of zirconium? I'm 6 not sure if I know specific benefits of very many 7 of the transition metals related to why they would 8 be in -- I mean -- but specifically zirconium, I'm 9 not certain. I don't know. 10 Q And I know we -- we talked about 11 aluminum as potentially a dopant, potentially not 12 just based on -- on the volume used with -- with 13 Yardney. 14 Do I understand that correctly? 15 A Yes. I mean, it was -- the aluminum -- 16 what they were looking at was a commonly utilized 17 cathode material at that time, NCA. Like I said, 18 I think it was 80 percent nickel, 15 percent 19 cobalt, 5 percent aluminum. 20 Q And do you recall why Yardney selected a 21 lithium-containing transition metal oxide with 22 aluminum as a dopant?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 26 of 120

September 13, 2022

105 1 A Well, as I said, I'm not sure if I 2 consider the level of 5 percent a dopant. 3 But the reason that they used NCA and 4 other people were using NCA at the time was due to 5 the stability of the material. It was relatively 6 stability, but still high energy. 7 Q I believe you also mentioned magnesium 8 as a dopant that you were familiar with. Is -- is 9 that correct? 10 A I think I said that in these patents 11 that we've read through that magnesium was one of 12 the things listed. 13 Q Okay. And have you collaborated on any 14 batteries that used magnesium as a dopant? 15 A Not to my knowledge. 16 Q And based on your experience with -- in 17 those collaborations, do you have an opinion as to 18 why those batteries did not use magnesium as a 19 dopant? 20 A Are -- is your question related to the 21 2006 time frame? 22 Q Let's -- let's start with the 2006 time	107 1 MR. DOUGLAS: We've been going about 2 another hour. Does this seem to be a -- a good 3 time for -- for a second break? 4 THE WITNESS: Fine by me. 5 MR. DOUGLAS: Okay. Let's go off the 6 record. 7 THE VIDEOGRAPHER: We are going off the 8 video record. The time is 11:24 a.m. 9 (Whereupon, there was a recess in the 10 proceedings.) 11 THE VIDEOGRAPHER: We are back on the 12 video record. The time is 11:40 a.m. 13 BY MR. DOUGLAS: 14 Q All right. Welcome back, Dr. Lucht. 15 Before the break, we were talking about 16 dopants. Do you recall that discussion? 17 A Yes. 18 Q And we talked about a few example -- or 19 potential examples of dopants. And I have a few 20 more questions along -- along that line. 21 In your experience, is nickel ever 22 considered a dopant?
106 1 frame, yes, please, Dr. Lucht. 2 A So could you restate the question again, 3 then? 4 Q I would be happy to. 5 And based on your experience and your 6 collaborations, do you have an opinion as to why 7 batteries in 2006 did not use magnesium as a 8 dopant? 9 A I don't -- you know, I don't really know 10 what that -- I mean, at that time, people were 11 using what worked, as far as I knew. And so the 12 NCA material gave you high energy and -- and it 13 was reasonably safe. Why they used the aluminum 14 instead of magnesium at that time, I don't -- I 15 don't know. 16 Q And since 2006, do you have an opinion 17 as to why the batteries that you collaborated on 18 did not use magnesium as a dopant? 19 A I don't really know why they didn't. I 20 mean, that's what the companies gave us as 21 supplies (indiscernible) we were working on. They 22 worked well enough.	108 1 A To my knowledge, nickel's not usually 2 considered a dopant. It's usually one of the 3 primary metals. 4 Q And in your experience, is tin a dopant 5 used in dopi- -- lith- -- in doping 6 lithium-containing transition metal oxides? 7 A So I -- as I recall, tin is one of the 8 metals that was listed in one of these many 9 patents that were part of the prior art or 10 whatever this -- for this case. So I've seen it 11 there. I may have seen it elsewhere. 12 Q Have you ever collaborated on batteries 13 that used tin as a dopant? 14 A Not to my knowledge. Although with 15 that, I did publish a paper on tin anodes. 16 Q And, as you sit here today, do you have 17 an opinion as to why the companies that you worked 18 with did not select tin as a dopant? 19 A I mean, once again, the materials that I 20 worked with in my lab with my students, to my 21 knowledge, don't generally contain dopants. 22 Q As you sit here today, do you have an

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 opinion as to whether there would be benefits of 2 using tin as a dopant? 3 A I'm not sure what the benefits 4 specifically of tin would be. 5 Q Is titanium a dopant used in dopant -- 6 doping lithium-containing transition metal oxide? 7 A Once again, upon looking through all of 8 the prior art and patents associated with these 9 proceedings, titanium is an element that's listed 10 as a potential dopant. 11 Q Have you ever collaborated on batteries 12 that used titanium as a dopant? 13 A To my knowledge, the students that I've 14 worked with, we haven't generally used dope -- 15 dope cathodes. 16 Q And, as you sit here today, are you 17 aware of any benefits of using titanium as a 18 dopant? 19 A Once again, we haven't specifically 20 worked with titanium, and, you know, I can't 21 specifically remember papers highlighting why 22 titanium's benefit -- beneficial.	1 A That was a long question. Could you 2 rephrase it -- or restate it again? 3 Q Yeah. Apologies. 4 In the 2006 time frame, what 5 considerations were made when determining whether 6 to use a dopant or dopants when designing a 7 lithium-ion secondary battery? 8 MS. WRIGHT: Objection; form. 9 THE WITNESS: Once again, I think that 10 they were being incorporated to improve some 11 property of cathode material, which to my 12 knowledge was most frequently either conductivity 13 of the particle or stability of the particle. 14 BY MR. DOUGLAS: 15 Q And when you use the term "stability of 16 the particle," can you explain what you mean? 17 A Well, most of the doping that I'm aware 18 of was related to layered metal oxide, and one of 19 the problems with the layered metal oxides is you 20 can have it, especially at high voltage, oxygen 21 evolution which can cause the batteries to go into 22 overcharging, explode or whatever, which you
1 Q And more generally, Dr. Lucht, are -- as 2 you sit here today, do you have an opinion as to 3 whether -- or do you have an opinion as to the 4 benefits of using dopants generally? 5 A Well, as -- so are you referring to this 6 in the context of 2016 or the context of today? 7 Q Let's -- let's start with 2006. 8 In -- in the time frame of -- of 2006, 9 were you aware of the benefits of using dopants? 10 A I mean, upon re -- reviewing all of 11 these documents that were provided to me related 12 to this case, the primary reasons around 2006 that 13 people were using some kind of a dopant was to 14 improve the stability or perhaps the conductivity 15 of the cathode. 16 Q And in the 2006 time frame -- strike 17 that. 18 In the 2006 time frame, do you have an 19 opinion, Dr. Lucht, of the considerations that 20 were made when determining whether to use a dopant 21 or dopants when designing a lithium-ion secondary 22 battery?	1 really don't want. 2 And so if the dopants are stabilizing 3 the cathode, usually my understanding was that 4 they're, you know, making that process less 5 likely. Or it's occurring at a higher temperature 6 or higher potential (indiscernible). 7 Q And I believe you also referred to 8 conductivity of the particle when talking about 9 considerations of using a dopant. 10 Is that correct? 11 A Yes. I believe that was something that 12 was stated in one of these or multiple of these 13 patents. 14 Q And what do you mean -- strike that. 15 Do you have an appreciation of the 16 definition of "conductivity of the particle" as 17 you used it in your answer? 18 A So once again, from reading through all 19 the prior art and/or the patents under question, 20 my understanding was it's referring to the 21 electrical conductivity of the particle, which is 22 an important component.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 28 of 120

September 13, 2022

113 1 It could also be related to the ionic 2 conductivity – ionic conductivity, the ability to 3 transport the ion into and out of the particle. 4 But I think it was referring to electrical 5 conductivity. 6 Q And do dopants participate in the 7 electrochemical reaction in a lithium-ion 8 secondary battery? 9 A They could or they could not. 10 Q And in what situations could they 11 participate in the electrochemical reaction? 12 A If the dopant is a transition metal that 13 has multiple oxidation states in the range that 14 you're cycling the battery. 15 Q And in what situations would the dopant 16 not participate in the electrochemical reaction? 17 A In cases where they don't have a change 18 in oxidation state in the potential range of the 19 battery. 20 Q And is it a benefit to the lithium-ion 21 secondary battery if the dopants participate in 22 the electrochemical reaction?	115 1 the properties? 2 A Well, okay. In – in – in – you know, 3 once again, going back to the NCA material that 4 Yardney was using – well, I don't know if I'd 5 necessarily call the aluminum a dopant at 6 5 percent but, you know, we can think of it -- 7 that for the moment using a material I'm familiar 8 with. 9 In that case the aluminum is providing 10 good stabilization to the cathode particle. 11 That's why it's presumably being added. However, 12 if you had NCA with 50 percent aluminum, your 13 aluminum is not an electrochemical active, and so 14 you'd lose 50 percent of the capacity of the 15 cathode. 16 Q Okay. 17 A In that case, the concentration's 18 important. 19 Q And is the solu- -- solubility of a 20 dopant important when devel- -- developing a 21 lithium-ion secondary batteries? 22 A Could you – could you define
114 1 A I'm not su- -- I mean, it could 2 potentially be a benefit in terms of the elec- -- 3 the me- -- the stor- -- the -- the qua- -- the -- 4 the capacity of the cathode. 5 Q And could dopants participate in the 6 electrochemical reaction be a hindrance to the 7 lithium-ion secondary battery? 8 A I'm not certain, but possibly. I mean, 9 certainly if -- if the oxidation state results in 10 the transition metal dissolution, that could be 11 problematic. 12 Q And in your opinion, Dr. Lucht, is the 13 amount of the dopant a consideration when 14 designing or developing a lithium-ion secondary 15 battery? 16 A I would think the concentration has a -- 17 has a significant effect on the properties. 18 Q And how does the concentration have a 19 significant effect on the properties? 20 A Well, that can be complicated. 21 Q Are you able to provide an example of 22 how the concentration has a significant effect on	116 1 "solubility"? 2 Q Dr. Lucht, what is your understanding of 3 the term "solubility"? 4 A Well, I'm not sure if you're talking 5 about the solubility of the dopant in the metal 6 oxide or the solubility of the dopant dissolving 7 into the electrolyte. 8 Q For the purpose of my question, I would 9 like to talk about the solubility of the dopant in 10 the metal oxide. 11 A So that would be something that's 12 important because in order to get, you know, even 13 distribution of the dopant into the metal oxide, 14 you'd want it to have high solubility in that 15 metal oxide that you're putting it into. 16 Q And you've mentioned oxidation states 17 with respect to dopants. Is -- is that correct? 18 A I believe I mentioned something about 19 oxidation states in dopants, yes. 20 Q And are the oxidation states of a dopant 21 a consideration when developing a lithium-ion 22 battery?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 29 of 120

September 13, 2022

117 1 A I mean, available oxidation states of 2 the transition metal -- or of any of the metals 3 you're putting in the cathode particle are going 4 to be important, yes. 5 Q And does the number of oxidation states 6 matter with respect to a dopant when developing a 7 lithium-ion battery? 8 A I mean, once again, all of the aspects 9 of the available oxidation states are potentially 10 going to affect the properties of the dopant. 11 Q Is the size of a dopant element a 12 consideration when developing a lithium-ion 13 secondary battery? 14 A Once again, that -- that can affect 15 things, yes. 16 Q And how can size of a dopant element 17 affect things in -- when developing a lithium-ion 18 secondary battery? 19 MS. WRIGHT: Objection; form. 20 THE WITNESS: Well, I mean, usually, 21 you're wanting things of similar size to fit into 22 the -- the crystal structure.	119 1 Q And in your experience, what types of 2 electrolytes are used in a lithium-ion secondary 3 battery? 4 A To my understanding, in 20- -- 2006 time 5 frame, virtually all electrolytes for lithium-ion 6 batteries were a lithium hexafluorophosphate 7 dissolved in carbonate solvents, which pretty much 8 all included ethylene carbonate, along with 9 dialkyl carbonates, and then possibly some 10 electrolyte additives. 11 Q And are you familiar with the term 12 "nonaqueous" as it relates to electrolytes? 13 A Yes. 14 Q And what does the term "nonaqueous" mean 15 with respect to electrolytes? 16 A There's no water. 17 Q And are you familiar with the term 18 "aqueous" as it relates to electrolytes? 19 A Yes. 20 Q And what does the term "aqueous" mean 21 with respect to electrolytes? 22 A An aqueous electrolyte is an electrolyte
118 1 (Reporter clarification.) 2 THE WITNESS: Usually you want, you 3 know, metals of similar size so they don't disrupt 4 the overall crystal structure of the material. 5 BY MR. DOUGLAS: 6 Q In your experience, Dr. Lucht, is cost 7 of a dopant a consideration when developing a 8 lithium-ion secondary battery? 9 A In terms of lithium batteries, cost is 10 always a concern for pretty much everything. 11 Q Fair enough. Fair enough. 12 So we talked a little bit earlier, 13 Dr. Lucht, about electrolytes, and I believe that 14 you said that the electrolyte is one of the main 15 components of a lithium-ion secondary battery. 16 Is that correct? 17 A Yes. 18 Q And what role does the electrolyte 19 provide in a lithium-ion secondary battery? 20 A The electrolyte allows the lithium ion 21 to transport back and forth from the cathode to 22 the anode.	120 1 that's composed of water, primarily as a solvent. 2 Q And so, Dr. Lucht, when you are 3 designing or collaborating on a secondary -- 4 secondary lithium-ion battery, what considerations 5 do you make when selecting an electrolyte 6 formulation? 7 A Could you restate that question again? 8 It wasn't really very clear to me what you were 9 trying to ask. 10 Q Fair enough. Apologies. 11 What considerations do you make when 12 determining an electrolyte formulation when 13 designing or collaborating on a secondary battery? 14 A It's a broad question. I mean, the 15 electrolyte, you want the electrolyte to be stable 16 to the anode when it's charged. You want the 17 electrolyte to be stable to the cathode when it's 18 charged. You want the electrolyte to be good at 19 transporting ions. You want it to have a good low 20 temperature performance, good high temperature 21 performance. You want it to last 20 years. 22 It's not asking a lot.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 Q And in your experience, what are the 2 main components of an electrolyte formulation in a 3 lithium-ion secondary battery? 4 A The main components are the lithium 5 salt, which to my knowledge in virtually all 6 lithium-ion batteries is lithium 7 hexafluorophosphate. You need a solvent to 8 dissolve the salt, which for most all lithium-ion 9 batteries is composed primarily of carbonates, 10 pretty much exclusively ethylene carbonate is 11 always present because it's important for 12 generating the SEI on the anode. 13 There's usually dialkyl carbonates which 14 lower the melting point, and then frequently some 15 kind of additive. 16 Q And would your answer change if we were 17 talking about the main components of an 18 electrolyte formulation in a lithium-ion secondary 19 battery in the 2006 time frame? 20 A No. Those are the same -- those are the 21 primary components. 22 I -- I would say the only thing that	121 1 borate is another one. 2 I mean, there's a lot of different 3 additives. 4 Q And in your experience, do the fluorine 5 compounds we just talked about provide any benefit 6 as an additive to electrolytes? 7 A The fluorine-containing solvents. So is 8 that fluoroethylene carbonate? It can provide 9 benefits. 10 Q And what are the benefits that FEC can 11 provide to electrolyte formulations? 12 A It's really good for silicon anodes for 13 whatever reason. It can be okay with graphite. 14 I've seen reports of it being good for cathodes at 15 high potential, but it's not clear why. 16 Q And did I understand you earlier that 17 you worked with FEC with respect to your work at 18 BASF? Is that correct? 19 A No. 20 Q Oh. Sorry about that. 21 Did we -- strike that. 22 With respect to -- strike that. 123
122 1 might be slightly different is, back in 2006, I 2 think less elec- -- less additives were 3 incorporated into batteries in 2006. And now here 4 in 2022, there's more additives that are 5 incorporated. 6 Q Okay. I know we talked about it a 7 little bit earlier with respect to Yardney, but 8 what are some examples of additives with respect 9 to electrolyte formulation when designing a 10 lithium-ion secondary battery? 11 A Well, the most widely utilized addit- 12 additive is vinylene carbonate, VC. As far as I 13 can know, it's in most lithium -- commercial 14 lithium-ion batteries. 15 Then outside of that, there's a whole 16 range of different additives that people look at. 17 I mean, some of the ones that were, you know, 18 described in these patents -- patents, such as the 19 nitriles and FEC, are utilized currently in 20 some -- in some systems. Lithium 21 difluorophosphate's another one that's fairly 22 frequently utilized. Lithium bis(oxalato)bo- --	124 1 Have you -- have you developed or 2 collaborated on lithium-ion secondary batteries 3 with fluorine compounds? 4 A With fluorine compounds? Lithium 5 hexafluorophosphate's a lithium -- a 6 fluorine-containing compound in every -- 7 everything I've ever -- well, not every. Most 8 everything I've done has contained 9 hexafluorophosphate. 10 Q Have you -- have you developed or 11 collaborated on any lithium-ion secondary 12 batteries that use FEC as an additive to 13 electrolyte -- the electrolyte formulations? 14 A Yes. 15 Q And what batteries have you collaborated 16 on where FEC was used as an additive to the 17 electrolyte? 18 A I had a department of Energy funded 19 grant with Brown University. And we spent a lot 20 of time studying the effect of FEC on silicon 21 anodes in lithium batteries. I also collaborated 22 with other professors here at URI on those

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 31 of 120

September 13, 2022

125 1 projects. 2 Q And do you recall why you selected FEC 3 as the additive for the DOE grant project? 4 A Because I heard it through the grapevine 5 that it worked and nobody published papers on it, 6 so I thought I would. 7 Q Fair enough. 8 A few minutes ago, you also mentioned 9 nitriles as they relate to -- as they relate to an 10 additive to electrolyte formulation. 11 Do you recall saying that? 12 A Yes. 13 Q And what is a nitrile? 14 A A nitrile's a carbon-containing molecule 15 or organic molecule with a the carbon-nitrogen 16 triple bond. 17 Q And are you aware of any benefits that 18 nitrile compounds provide to electrolyte 19 formulations? 20 A Yes, they somehow improve the 21 performance of cathodes at high potentials is what 22 I've generally heard them being used for.	127 1 that was provided here, several mononitriles have 2 been -- been mentioned as additives. 3 Q And do you recall, as -- as you sit here 4 today, the names of those particular additives? 5 A Two of them that I remember seeing were 6 acetonitrile and benzonitrile. There may have 7 been others. I'm not sure. But I remember those 8 two. 9 Q Are you familiar with the term 10 "aliphatic nitrile compound"? 11 A Yes. Once again, I teach organic 12 chemistry. 13 Q Fair enough. 14 What is the definition of an aliphatic 15 compound, Dr. Lucht? 16 A An aliphatic compound is a compound just 17 contains carbon-hydrogen and carbon-carbon single 18 bonds. And so an aliphatic nitrile is a molecule 19 which contains just carbon-carbon and 20 carbon-hydrogen single bonds and the nitrile. 21 Q And would you characterize those two 22 examples, acetonitrile and benzonitrile as
126 1 Q And have you used nitriles additives to 2 electrolytes in -- in your research? 3 A As I said previously, yes, we did 4 investigate it when -- with collaboration with 5 BASF, but I don't think we published them. 6 Q And are you familiar with the term 7 "mononitrile"? 8 A Yes. 9 Q And what is a mononitrile? 10 A It's an organic molecule that contains a 11 single carbon-nitrogen triple bond. 12 Q And are you aware of any examples of 13 mononitriles? 14 A I'm not -- I'm not sure what your 15 question is. I teach organic chemistry, so I -- 16 there's thousands of molecules with nitrile. 17 Q Fair. Are -- Dr. Lucht, are you 18 familiar with -- with ex- -- any examples of 19 mononitriles that have been used as additives to 20 lithium-ion secondary batteries? 21 A Yeah. I mean, once again in the -- in 22 the series of patents and -- and prior art that --	128 1 aliphatic compounds? 2 A No. Acetonitriles. 3 Q So acetonitrile is an aliphatic nitrile 4 compound? 5 A Yes. 6 Q Are you familiar with the term "aromatic 7 nitrile compound"? 8 A Yes. 9 Q And what is the definition of an 10 aromatic nitrile compound? 11 A It's a molecule which contains an 12 aromatic species or aromatic component, typically 13 a ring of carbons, benzene being the most frequent 14 one, six carbons and six hydrogens and alternating 15 carbon-carbon single and carbon-carbon double 16 bonds. And so that's an aromatic (indiscernible) 17 can have multiple rings. But a nitrile would be 18 attached to it. So an aromatic nitrile would be 19 an aromatic species that has a nitrile. 20 Q Understood. And would it be fair to 21 characterize the benzonitrile that you used in 22 your example previously as an aromatic nitrile

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 32 of 120

September 13, 2022

1 compound? 2 A Yes. 3 Q And do you recall using mononitrile -- 4 mononitrile additives in any of your research or 5 collaborations? 6 A You know, I don't recall. The main 7 focus of the work that we were doing I think was 8 on dinitriles. My research -- I really try and 9 understand the fundamental, basic science behind 10 things. And so, therefore, we may have also 11 utilized mononitriles as a comparative study to 12 try and understand why the dinitriles function 13 different. But I don't recall exactly because 14 once again, we didn't publish it. 15 Q That's fair. And then just -- just so 16 the record is clear, we've used the word 17 "dinitrile" a couple times now. 18 What -- what is a dinitrile? 19 A Dinitrile is some organic molecule which 20 has two carbon-nitrogen triple bonds. 21 Q And, as we sit here today, are you aware 22 of any examples of dinitriles that have been used	131 1 or collaborated on a battery that used the 2 succinonitrile as the additive to electrolytes -- 3 the electrolyte formulation? 4 A I mean, once again, at the request of 5 BASF, we investigated it in systems, so we did 6 build cells and cycled cells and we took apart and 7 analyze them. 8 Q Yeah. And then going back to sometime 9 ago, the last component of the battery -- or the 10 lithium-ion secondary battery that we haven't 11 talked about is the separator. 12 Just to close out the record, what -- 13 what is a "separator," Dr. Lucht? 14 A Separators are usually some kind of 15 non-electrically conducting material that's very 16 porous that allows the electrolyte to kind of go 17 through it easily but it provides electrical 18 separation between -- or separation between the 19 cathode and the anode so you don't get a short 20 circuit. 21 Q And in your experience in 2006, what 22 were the common components of a separator in the
130 1 with electrolyte formulations in lithium-ion 2 secondary batteries? 3 A To my -- to my knowledge, 4 succinonitriles have been utilized. There may 5 have been -- 6 (Reporter clarification.) 7 THE WITNESS: Succinonitrile. 8 S-u-c-c-i-n-o- -- I'm not a good speller. 9 Succinonitrile. 10 BY MR. DOUGLAS: 11 Q And you previously had said that you'd 12 used or at least looked at dinitrile additives in 13 your research and -- and collaboration? 14 A Yes. 15 Q Is that correct? 16 A Yes. 17 Q And do you recall if you used 18 succinonitriles as -- in your research? 19 A As I recall, what we were looking at was 20 succinonitrile. 21 Q Okay. Thank you. 22 And do you recall whether you developed	132 1 lithium-ion secondary battery? 2 A Back in 2006, as far as I know, they 3 were predominantly polyolefins -- polypropylene. 4 I think anyway. They were predominantly poly. 5 Q And is that -- 6 (Reporter clarification.) 7 THE WITNESS: They're typically 8 polyolefin. I think most frequently 9 polypropylene. 10 BY MR. DOUGLAS: 11 Q And have those common components of a 12 separator changed since 2006 Dr. Lucht? 13 A Yes. 14 Q And, as you sit here today, what are the 15 common components of a separator in a lithium-ion 16 secondary battery? 17 A Well, they're still -- one of the parts 18 of it is the -- the polypropylene, but now most of 19 them have some kind of ceramic coating on it that 20 faces the cathode side. 21 Q I'd like to turn your attention, 22 Dr. Lucht, to the Choi reference.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 33 of 120

September 13, 2022

133 1 A Okay. 2 Q As you might recall, there are multiple 3 Choi references. 4 A Yes. Which one are you looking at? 5 Which -- which -- which patent? 6 Q Yes. And so I am looking at Choi that 7 is marked as Exhibit 1005 in the '446 patent case, 8 or alternatively, if it's easier for you, 9 Dr. Lucht, the 1440 IPR. 10 A Okay. I got the 1440 IPR, '446. And 11 you said 5? 12 Q Exhibit 5, yes, sir. 13 A Yeah, let me flip through all -- 14 Q 1005, I'm sorry. I'm sorry. 15 A Yeah, 1005, just got to get to it. 16 Q Yep. 17 A These binders take -- you don't -- you 18 don't want to try to flip all the paper at the 19 same time. 20 Q Indeed. Indeed. 21 A Okay. I'm there. 22 Q Okay. And -- and just because we -- we	135 1 And in each of those four formula -- 2 each of those four formulas lists a 3 lithium-containing transition metal oxide. 4 Correct? 5 A Yes. 6 Q Okay. All right. Just -- just to make 7 things more fun, Dr. Lucht, do -- do you have a -- 8 like, a sticky or something to -- to stay so we 9 can go back to that page easily? Perfect. 10 Certainly not a requirement, but it might just 11 make flipping of the pages a little bit easier. 12 And now I'd like to -- to switch to the 13 Kim reference in the same patent -- the same 14 proceeding, the 1440 proceeding. And that's 15 Exhibit 1006. 16 A 1006, yep. 17 Q And just so we're on the same page, in 18 the upper right-hand corner of Exhibit 1006 in the 19 1440 IPR, it says, next to Paren 10, Pub. No. 20 U.S. 2005/0208371. 21 Do you see that? 22 A Yep.
134 1 are in different locations to make sure we're -- 2 we're on the same page, about five lines down in 3 the very middle on the first page, Dr. Lucht, in 4 brackets, there's the number 21, and then it says, 5 App. No. 6 A Yep. Application No. 200610004421.7. 7 Q Yes, sir. We are -- we are on the same 8 page. Thank you for -- for bearing with me here. 9 Okay. And I would like to point you to 10 Claim 1, which is just on the second page of 11 that -- of that reference at the very top. It 12 starts with the number 1. 13 A Yes. 14 Q Okay. And will you please review 15 Claim 1 and just let me know when you've had a 16 chance to -- to look at that. 17 A Okay. Yes. 18 Q And in Claim 1 of Exhibit 1005, the Choi 19 reference, do you see that there are four formulas 20 listed? 21 A Yes. 22 Q Do you see that?	136 1 Q Okay. So looking at Exhibit 1006, will 2 you please turn to Paragraph 36 of this reference, 3 Exhibit 1006. 4 A What's the page again? Sorry. I didn't 5 hear you well. 6 Q I'm sorry. Will you please turn to 7 Paragraph 36. 8 A Paragraph 36. 9 Yes, here -- "hereto after the present 10 invention will be described in detail." 11 Q I'm sorry. I'm -- maybe go back to -- 12 to kindergarten here. Paragraph 69. I'm sorry. 13 A Okay. Okay. 69. Okay. "Generally." 14 Q Yes, sir. Will you please read 15 Paragraph 69 and just let me know when you've had 16 a chance to -- to review that paragraph. 17 A Okay. Yes. 18 Q And in Paragraph 69, about the fifth 19 line, Kim discloses a number of examples. 20 Do you see that? 21 A Yep. 22 Q And starting at Line 5, Kim lists

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 lithium cobalt oxide. 2 Do you see that? 3 A Yes. 4 Q And in that list of -- or -- or in that 5 group in Paragraph 69, would you agree with me 6 that each of these examples are examples of 7 lithium-containing transition metal oxide to be 8 used as a cathode active material? 9 A Well, they are -- there is a list of 10 lithium transition metal oxides, and that the ones 11 that are listed could potentially be used as 12 cathode materials. 13 Q Okay. And just coming back to the -- 14 the first sentence of -- of Paragraph 69 at the 15 very top, where it starts with "generally." Then 16 it says: 17 The lithium secondary battery contains a 18 lithium-containing transition metal oxide as a 19 cathode active material, and examples of the 20 lithium-containing transition metal oxides are at 21 least one selected from the group consisting of 22 lithium cobalt oxide, lithium nickel oxide.	137 139 1 A Yep. 2 Q And you see at about the third line, it 3 talks -- this Paragraph on Page 10 of Exhibit 1005 4 provides examples of materials that could be used 5 for -- as cathode active materials. 6 Do you see that? 7 A I see "examples of this material 8 include," yes. 9 Q And would you agree with me that one of 10 the examples is lithium nickel oxide? 11 A Lithium nickel oxide is listed as -- in 12 the paragraph, yes. 13 Q And in terms of this paragraph, is Choi 14 referring to lithium nickel oxide as an example of 15 a cathode active material? 16 A (Indiscernible) they're saying it's 17 component of the cathode is that -- and it is 18 listed there in the paragraph, yes. 19 Q And would you agree with me that Kim, 20 which we were just looking at Exhibit 1006 21 Paragraph 69, also listed lithium nickel oxide as 22 one example of a lithium containing transi- --
1 Do you see that list? 2 A Yes. Yeah. 3 Q And would you agree with me that -- that 4 that list relates to cathode active materials 5 based on the language of Paragraph 69? 6 A Yeah. You -- you read the paragraph. 7 And I agree with you that that's what the 8 paragraph states. 9 Q All right. So let's flip back to the 10 Choi reference, Exhibit 1005 in the 1440 matter. 11 And we looked at Claim 1 last time, but 12 I would like you to turn now to Page 10 of 13 Exhibit 1005. 14 A 10. Okay. 15 Q And on Page 10, the first full Paragraph 16 starts with the word "thus." 17 Do you see that? 18 A Yes. 19 Q Okay. It says, Thus, it is preferred, 20 and then it continues. 21 Will you please review that Paragraph, 22 starting with "thus."	138 140 1 transition metal oxide? 2 A I can agree that lithium nickel oxide is 3 listed on the page that is there. 4 Q All right. And I'm sorry if I'm -- 5 if -- if I'm flipping. Just -- just stop -- stop 6 me, Dr. Lucht, if I have over-flipped. 7 I'm going -- can we go back to the Choi 8 reference, Exhibit 1005 at -- at Page 10? 9 A Yeah. 10 Q And you'll recall that we looked at the 11 first full paragraph starting with "thus, it is 12 preferred." 13 Do you recall looking at that Paragraph? 14 A Yep. 15 Q And about the third line, there were a 16 list of examples. 17 A Yes. 18 Q Do you recall looking at that? 19 And one of the examples, it's the 20 third-to-last example, is a lithium nickel cobalt 21 oxide with 90 percent nickel and 10 percent 22 cobalt.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 Do you see that? 2 A I see that. 3 Q And so now, if we turn back to 4 Paragraph 69 of Exhibit 1006, Paragraph 69 in 5 the -- starting at the end of the fifth line, 6 transitioning to the sixth line, there's a formula 7 for li- -- lithium nickel cobalt oxide where -- 8 where X is between zero and one. 9 Do you see that? 10 A Yes, I see that. 11 Q And would you agree with me that lithium 12 nickel cobalt oxide with 90 percent nickel, 13 10 percent cobalt falls within Kim's formula in 14 Paragraph 69? 15 A I can say that with -- you know, with 16 the formula that is in the -- what is this 17 reference again here -- the Kim reference of 18 lithium nickel X cobalt XO₂ where X is between 19 zero and one, yes, a compound with 90 percent 20 nickel and (indiscernible) -- yeah, with 21 90 percent nickel and 10 percent cobalt would fall 22 in that range. Yes.	141 1 A Lithium manganese oxide is listed on the 2 list. 3 Q And then turning back to the Kim 4 reference, Paragraph 69, Exhibit 1006, the 1440 5 matter. 6 A Lithium manganese oxide is listed on the 7 list. 8 Q All right. Turning back now to the Choi 9 reference, Exhibit 1005, this time, can we go to 10 paragraph -- or paragraph -- Page 13, please, of 11 Choi, Exhibit 1005. 12 A Yes. 13 Q And you'll see at the very bottom of the 14 page -- two lines from the bottom, it says, 15 Example 1, and then right below that, it starts 16 with "1.4 grams of" -- do -- do you see that? 17 A Wait a second. I'm confused. We're on 18 Page 13, or page -- we're on Page 16 -- there's 19 two different page numbers here, so I'm confused 20 for a second. 21 Q Will you please look at the -- the page 22 number on the very bottom right-hand --
142 1 Q And if we can turn back to -- that's 2 Exhibit 1005 in the 1440 IPR. 3 A Yes. 4 Q And the next paragraph starts with 5 "Then, as the small diameter cathode." Do you see 6 that? It's about -- 7 A Yes. 8 Q -- 10 lines down, roughly. 9 Would you please review that paragraph? 10 A The whole paragraph? 11 Q Yes, please. 12 A Yep. 13 Q And toward the end of that paragraph, 14 starting at about Line 16, Choi disclose -- 15 discloses certain compounds that correspond to 16 formulas two, three, and four. 17 Do you see that? 18 A Yes. 19 Q And do you see that there's an example 20 in there that's lithium manganese oxide? Is 21 that -- is that right? The -- it's the second 22 option?	144 1 A Yeah. 2 Q -- corner. 3 A So which -- which page are we on, again? 4 Sorry. 5 Q 13, sir. 6 A 13. I'm sorry. I went to the other 13. 7 That's my bad. 8 Okay. There. I'm on Page 13 now. 9 Q Okay. And then near the bottom, it 10 says, Examples, preparation of composite cathode 11 active -- 12 A Yes. 13 Q -- materials and cathodes. 14 Do you see that? 15 Okay. Good. We're -- we're on the same 16 page. 17 A Yep. Sorry. 18 Q And then it says, Example 1 right below 19 that. 20 A Yes. 21 Q Will you please review Example 1. 22 A Yes.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 Q And -- and when looking at Example 1, 2 what two lithium-containing transa- -- transition 3 metal oxides does Choi disclose? 4 A Well, the first one is li- -- lithium 5 nickel cobalt manganese oxide, 80, 10, 10, with an 6 average particle diameter of 14 microns. 7 And the other one is lithium cobalt 8 oxide with an average particle diameter of 9 2 microns. 10 Q And so it's fair to say that in Example 11 1, Choi identifies lithium cobalt oxide as an 12 example of a lithium-containing transition metal 13 oxide to be used in a cathode active material? 14 A Can you state that again? 15 Q Sure. 16 So in Example 1, Choi identifies lithium 17 cobalt oxide as an example of a lithium-containing 18 transition metal oxide to be used in the cathode 19 active material. Correct? 20 A Choi utilizes lithium cobalt oxide with 21 an average particle diameter of 2 microns as part 22 of its preparation of a composite cathode active	145 1 A I think so. I'd have to flip back to 2 the front page, but I -- yeah. 3 Q Yeah. 4 A This is -- it says -- no, it doesn't say 5 on the page. Yes, I assume -- yes, I assume that 6 is correct. I think this is the 1440. I can look 7 at the other one more easily and make sure it's 8 not. 9 Yeah, 1440. Sorry. 10 Q And would it be fair to say that these 11 same two references, the Choi Exhibit 1005 and Kim 12 exac- -- Exhibit 1006 are also at issue in the 13 1443 IPR relating to patent 9,350,019? 14 A So I -- could -- wait. Could you 15 restate that question? It just -- it was kind of 16 an odd way of saying something. Sorry. 17 Q Fair -- fair -- fair -- fair enough. 18 What I'm trying to get to is, you know, 19 just establishing that these same two references 20 are at issue in both -- in both proceedings. 21 So, Dr. Lucht, if you could also look at 22 IPR 2021-1443 related to the '019 patent.
146 1 material. 2 Q And just continuing now on Page 14 and 3 looking at Example 2, Choi -- Choi also identifies 4 lithium cobalt oxide as one of the 5 lithium-containing transition metal oxides to be 6 used in the cathode active material. Correct? 7 A In Example 2, lithium cobalt oxide is 8 listed with a particle size -- particle diameter 9 of 1.3 microns to be used in the preparation of a 10 composite cathode. 11 Q And then turning back to Exhibit 1006, 12 Paragraph 69, would you agree with me that lithium 13 cobalt oxide is one of the examples of 14 lithium-containing transitional -- transition 15 metal oxides that Kim discloses in Paragraph 69? 16 A Lithium -- Paragraph 69, lithium cobalt 17 oxide is listed as a lithium-containing transition 18 metal oxide as the cath- -- cathad- -- cathode 19 active material. 20 Q Dr. Lucht, we've been talking about 21 Exhibits 1005 and 1006 in the 1440 IPR. Is that 22 correct?	147 1 A Hold on here. 1443? Is that what you 2 said? 3 Q Yes, sir. 4 A Yeah. And it looks -- it looks like 5 these same two, the Choi and the Kim are exhibits 6 105 and 106 in this. 7 Q Yes, sir. 8 A According to (indiscernible). 9 Q Yes, sir. And -- and would your answers 10 to the questions that I just asked you about 11 Exhibit 1005 and 1006 in the 1440 matter change if 12 I asked you the same questions with respect to 13 these same two exhibits, Exhibit 1005 and 1006 in 14 the 1443 matter? 15 A Considering it's my understanding that 16 they're the exact same documents, yes, my answers 17 would be the same. 18 Q Okay. Okay. 19 All right. Now I'd like to switch 20 to (indiscernible) -- hold on a second. 21 All right. Now I'd like to change -- 22 switch gears to the '035 patent, which is the 1441 148

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 37 of 120

September 13, 2022

1 IPR please. 2 A At least I'm getting some exercise today 3 using the recliner chair. 4 Q Exactly. 5 Will you please turn, Dr. Lucht, to 6 Exhibit 1005 in the 1441 case? 7 A It's going to take -- 8 Q (Indiscernible.) 9 A -- a -- it's going to take a bit. 10 Q Yes. Yes. 11 A Okay. I'm there. 12 Q Okay. So we switched to the 1441 IPR, 13 and the '035 patent, and now we're again at 14 Exhibit 1005. And we're again talking about a 15 Choi reference. 16 But this time, we're talking about a 17 Choi with -- in the upper right-hand corner, 18 publication No. U.S. 2006/0257745. 19 Do you see that? 20 A Yes. 21 Q Okay. Excellent. 22 And then if you turn to me -- turn with	1 A And X is S. 2 Q And reviewing Formulas 1 through 4 in 3 Claim 1 of Exhibit 1005, will you provide an 4 example of -- in which one of the formulas is a 5 lithium-containing transition metal oxide? 6 A You know, in a case where alpha is equal 7 to zero. 8 Q Now, staying with Exhibit 1005, will you 9 please turn with me to Paragraph 65. 10 A Paragraph 65. Yep. 11 Q Will you please review Paragraph 65 and 12 66. 13 A Okay. Yes. 14 Q And in Paragraph 65, Choi provides 15 example preparations of composite cathode active 16 materials. Correct? 17 A The examples are -- for Example 1, 18 "preparation of composite cathode active materials 19 and cathodes." Yes. 20 Q And what two lithium-containing 21 transition metal oxides does Choi disclose in 22 Example 1.
1 me to Claim 1 of Exhibit 1005 in the '035 case. 2 A Which is on Page 12? 3 Q Yes, sir. 4 A The claim is, "one, a composite active 5 cathode material comprising"? 6 Q Yes, sir. 7 And will you review Claim 1 please. 8 A Sure. 9 Okay. 10 Q And in Claim 1, do you see a listing of 11 four formulas? 12 A Yes. 13 Q And would you agree with me that those 14 four formulas of Choi Claim 1 are 15 lithium-containing transitional metal oxides? 16 A They could or they could not be. 17 Q And looking at Formulas 1 through 4, 18 will you provide an example of a situation where 19 one of the formulas would not be a 20 lithium-containing transition metal oxide? 21 A Yes. When alpha is two. 22 Q Okay.	1 A He first discloses lithium nickel cobalt 2 manganese, oxide 80, 10, 10, having a particle 3 size of 14 microns and combining that with lithium 4 cobalt oxide with an average particle diameter of 5 2 microns. 6 Q And so in Example 1, Choi identifies 7 lithium nickel cobalt oxide as an example of a 8 lithium-containing transition metal oxide to be 9 used in a cathode active material. Correct? 10 A Lithium cobalt oxide with an average 11 diameter of 2 microns is listed as part of a 12 component to prepare for the preparation of 13 composite cathode. 14 Q I'll have you turn with me to Paragraph 15 67 in Example 2. 16 A Yes. 17 Q And in Example 2, is lithium cobalt 18 oxide one of the examples of lithium-containing 19 transition metal oxides -- 20 A Example -- 21 Q -- that -- sorry. 22 A Sorry. You done?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 Q Yeah. 2 A Example 2 lists lithium cobalt oxide 3 with an average particle diameter of 1.3 microns 4 as a component for the preparation of composite 5 cathode. 6 Q And then if we turn to Exhibit 1006 in 7 the same IPR, the 1441 IPR -- 8 A Yep. 9 Noh. 10 Q Correct. The Noh reference. 11 So I'm looking at 1006, Noh, and in the 12 upper right-hand corner, Pub. No. U.S. 13 2004/0197667? 14 A Yep. 15 Q Okay. 16 A Yes. 17 Q And will you turn with me to Paragraph 18 64 and 65 of Noh? It's on Page 11. 19 A 64. Yes. 20 Q And will you please review Paragraph 64 21 and 65. 22 A Okay.	153 1 worked out that you found the link. 2 So earlier today, we were talking about 3 the main components of a lithium-ion secondary 4 battery as being the cathode, anode, separator and 5 electrolytes. 6 Do you recall those discussions? 7 A Yes. 8 Q And would you consider the -- the 9 cathode formulation during the design and 10 development phase of a battery? 11 A Can you restate that? 12 Q Yes. 13 Would you consider the composition of 14 the cathode as you're designing and developing a 15 battery? 16 A I think when you're designing a battery, 17 you have to consider all of the active materials, 18 both the cathode and the anode. 19 Q And would you also have to consider the 20 separator during the design and development phase 21 of a battery? 22 A You would have to consider all
154 1 Q And looking specifically at Paragraph 2 65, would you agree with me that lithium cobalt 3 oxide is one of the examples of lithium-containing 4 transition metal oxides that Noh discloses in 5 Paragraph 65 of Exhibit 1006? 6 A 65 states that lithium cobalt oxide is a 7 positive active material. Which the positive 8 active material is the cathode. 9 Q Okay. 10 MR. DOUGLAS: I think we've been going 11 again about an hour, maybe a little bit more. Are 12 you ready for a break, Dr. Lucht? 13 THE WITNESS: Sure. 14 MR. DOUGLAS: Okay. 15 THE VIDEOGRAPHER: We are going off the 16 video record. The time is 12:47 p.m. 17 (Whereupon, there was a recess in the 18 proceedings.) 19 THE VIDEOGRAPHER: We are back on the 20 video record. The time is 1:35 p.m. 21 BY MR. DOUGLAS: 22 Q Welcome back, Dr. Lucht. I'm glad all	155 1 components, everything. 2 Q And that would include the electrolyte 3 formulation? 4 A That would include the electrolyte 5 formulation, the current collectors. Lithium 6 batteries are very, very sensitive to very small 7 changes. 8 Q Got it. And so when you -- would you 9 consider the formulation of the cathode materials 10 as a mechanism or nob you might adjust during the 11 design and develop -- development of a battery? 12 A I mean, I would say in terms of when 13 you're designing and developing a battery, all of 14 the different components, including the cathode, 15 are things that could be adjusted. 16 Q And so could you adjust the types of 17 elements in the cathode formulation to obtain 18 certain characteristics of the battery? 19 A Could you state that again? 20 Q Yes, I can. 21 For example, could you adjust the types 22 of elements in the cathode formulation to obtain

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

157 1 certain battery characteristics? 2 A I mean, you might want to change 3 materials to optimize different properties, but 4 anytime you change one thing, it can cause both 5 advan- -- advantageous changes and disadvantageous 6 changes. 7 Q And could you adjust the elements 8 themselves in the cathode formulation to obtain 9 certain battery characteris- -- characteristics? 10 A I mean, I don't -- you're -- the way 11 you're phrasing the question's not really making a 12 lot of sense to me from a chemistry or material 13 science standpoint. 14 Q Okay. Fair criticism. 15 Could you change the elements in the 16 cathode formulation to obtain certain desired 17 battery characteristics? 18 A I mean, you can. But once again, 19 anytime you change something, it can cause both 20 good problems and bad problems. I mean, that's 21 why the -- I mean, specific materials are used in 22 cathodes and anodes and electrolytes because	159 1 other electrolyte formulations? 2 A I would say the electrolyte formulation 3 frequently has a significant impact on the overall 4 calendar life and -- and -- and cycling life 5 performance of the battery. 6 Q And do some electrolyte formulations 7 provide improved safety of the battery compared to 8 other electrolyte formulations? 9 A Well, there -- there are many aspects of 10 the battery that could modify the overall safety 11 of the battery and the electrolyte is one of them. 12 Q And do electrolyte formulations protect 13 the electrode surfaces of the battery? 14 A Say that again. 15 Q Do some electrolyte formulations protect 16 the electrode surfaces of the battery? 17 A That's a complicated question. I mean, 18 on -- on the anode side, the electrolyte degrades 19 on the first cycle to generate a solid electrolyte 20 interphase. And you can modify the electrolyte 21 formulation to change the structure and the 22 stability of that solid-electrolyte interphase.
158 1 that's what works. And if you change anything, it 2 may cause you problems. 3 Q Understood. And would -- strike that. 4 Is electrolyte formulation a mechanism 5 or nob you would adjust during the design and 6 development of a battery? 7 A Certainly. I mean, that's what my main 8 expertise is. 9 Q Okay. And do electrolyte formulations 10 allow or enable the lithium ions to move between 11 the anode and cathode? 12 A I mean, the primary function of the 13 electrolyte is to allow the lithium ions to move 14 back and forth between the cathode and the anode. 15 Q And would it be accurate to say that 16 some electrolyte formulations work better than 17 others at such ion movement? 18 A Some electrolyte formulations are better 19 at conducting ions than other electrolyte 20 formulations. 21 Q And do some electrolyte formulations 22 extend the lifespan of the battery compared to	160 1 On the cathode side, the electrolyte can 2 potentially react on the surface of the cathode, 3 but I would generally say the understanding of 4 those reactions in surface films is not nearly as 5 good as it is on the anode side. 6 Q And do some electrolyte formulations 7 work better than others at protecting the 8 electrode surfaces that you just described? 9 A Well, so once again, I mean, yes. Some 10 of them do. For example, VC makes a good SEI on 11 the anode. 12 Q And do some electrolyte formulations 13 reduce or prevent gas generation in the battery 14 caused by a reaction between the electrolyte 15 solution and the cathode? 16 A The electrolyte has an influence on the 17 gassing and changing the electrolyte formulation 18 can change the gassing as well as most -- a lot of 19 other events. 20 Q And do some electrolyte formulations 21 reduce battery swelling? 22 A Well, I mean, the swelling is usually

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 40 of 120

September 13, 2022

1 caused from the gas generation, which is from the 2 electrolyte. And so I -- it -- it -- I -- gas 3 generation's from the electrolyte in the first 4 place usually. So you -- by changing it, you can 5 change the amount of gas evolution. 6 Q And do some electrolyte formulations 7 protect metallic inner surfaces of a battery case? 8 A Yeah. I mean, especially on the cathode 9 side. I mean, LiPF6 helps passivate the aluminum. 10 Q And do some electrolyte formulations 11 enhance the discharge capacity of a battery? 12 A Once again, the electrolyte's going to 13 affect pretty much everything. So we can -- you 14 know, the -- the -- the electrolyte can change the 15 discharge capacity. 16 Q And do some electrolyte formulations 17 work better than others by not lowering the 18 initial discharge capacity? 19 MS. WRIGHT: Objection; form. 20 THE WITNESS: That was -- I -- I don't 21 know what you're trying to ask there. 22	1 A No, it's okay. That's okay. 2 Let's see here, the '446 patent. 3 Q Yes. And -- 4 A Is that what we're -- 5 Q -- you -- 6 A -- talking about? 7 Q -- have -- and you've reviewed the '446 8 patent, Dr. Lucht? 9 A I've reviewed the '446 patent, yes. 10 Q Excellent. 11 Will you please turn to Column 2 of the 12 '446 patent, Page 5 of the document? 13 A Column 2, yes. 14 Q And will you please look at Column 2, 15 Lines 35 to 45. It's the last -- well, it's the 16 last paragraph before "Summary of the Invention." 17 Do you see that? 18 A Yep. 35 and -- do you want to read 19 that? 20 Q Yeah. Will you please review 35 to 45 21 please. 22 A Okay. Yep.
1 BY MR. DOUGLAS: 2 Q Do some electrolyte formulations work 3 better than others with respect to the discharge 4 capacity of a battery? 5 A I think I already said that they can, 6 yes. 7 Q Okay. Fair. 8 All right. Can we please turn to the 9 '446 patent, which is Exhibit 1001 in the 1440 10 case. 11 A 1440 case. The patent, which is the -- 12 which example -- which Exhibit is that? 13 Q 1001, the -- the patent -- 14 A Oh, it's -- 15 Q -- at issue. 16 A It's just the first one? Okay, well -- 17 Q Yes. Yes. Less -- less turning for you 18 on this one, I hope. 19 A Well, no, I got to go all way back cause 20 I was already -- I was -- I was at the back so now 21 turning the other direction. 22 Q I'm sorry.	1 Q And Column 2, Lines 35 through 45 are in 2 a section of the '446 patent called "Related Art." 3 Is that correct? 4 A Yes. "Field of Invention," "Related 5 Art." 6 Q And Column 2 Lines 35 to 45 7 characterizes a known problem of an electrolyte 8 solution. Is that correct? 9 A Well, I mean, it describes it as a 10 problem with charging above 4.2. Yeah. With the 11 electrolytes. 12 Q And what problem does Column 2 Lines 35 13 through 45 describe with respect to charging above 14 4.2 volts? 15 A Well, it describes -- it says that 16 there's a shortening of the charge/discharge cycle 17 life or the decrease of the thermal stability. 18 Q And does Column 2, Lines 35 through 45 19 also discuss a passivation film? 20 A Yeah. It says that you generate a 21 passivation film on the surface which causes 22 increases to the internal resistance of the

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

165 1 battery. 2 Q And does the creation -- strike that. 3 Does Column 2, Lines 35 through 45 4 characterize a problem with respect to the 5 passivation film that is formed on the surface of 6 the positive electrode? 7 A Well, it says the: 8 Passivation film is formed on the 9 surface of the positive electrode and thus the 10 internal resistance of the battery increases so as 11 the load characteristics may deteriorate. 12 So increased resistance is going to be 13 bad. 14 Q Okay. And will you please turn with me 15 to Exhibit 1001 in the '019 patent IPR No. 1443. 16 A 1443? 1443. 17 Q Yeah. 18 A 1001? 19 Q Yes, sir. 20 A Okay. 21 Q And -- 22 A Yes.	167 1 Dr. Lucht? 2 A Yes. That, I -- I'm aware of. 3 Q Okay. And reviewing Column 2, Line -- 4 starting at -- the Paragraph starting at Line 44 5 of Exhibit 1001, is there anything in that 6 Paragraph that would change the answers that you 7 gave to me with respect to Column 2, Lines 35 to 8 45 in the '446 case? 9 A I don't think -- not that I'm aware of. 10 Q All right. Will you please turn to 11 Exhibit 1001 in the '035 patent case, which is 12 1441. 13 A '035? It's going to take a minute. I 14 got to flip all the way back again. 15 Q Yep. Sorry about that. 16 A No, no. It's okay. It's -- 17 So one -- 1001. Right? 18 Q Yes, sir. 19 A Okay. 20 Q And will you please turn to Column 2 21 starting at Line 40 of Exhibit 1001 in the 1441 22 IPR.
166 1 Q Okay. Great. 2 And will you turn with me to Column 1 3 and 2. 4 A Yes. 5 Q And if you look at Column 2, Line 44, it 6 starts with "Under a charging condition." 7 Do you see that? 8 A Yep. 9 Q And will you review that paragraph that 10 starts at Column 2, Line 44? 11 A Yes. 12 Q Would you agree with me that that 13 line -- paragraph starting at Column 2, Line 44 in 14 Exhibit 1001 in the 1443 case is the same 15 paragraph that we just talked about in 16 Exhibit 1001 in the 1440 case? 17 A I can say they say similar things. I 18 can't -- I'd have to look in more detail to see if 19 they say the same thing word-for-word, but they 20 are similar. 21 Q Okay. And do you understand that the 22 '446 patent and the '019 patent are related,	168 1 A Yep. 2 Q And this Paragraph also starts "Under a 3 charging condition." 4 Do you see that? 5 A Yep. 6 Q Will you please review that Paragraph at 7 Column 2, Lines 40 through 50. 8 A Okay. 9 Okay. 10 Q And Column 2, Lines 40 through 50 are in 11 the section entitled "Related Art" of the '035 12 patent? 13 A Yes. 14 Q And are there any differences that you 15 can identify between Column 2, Lines 40 through 50 16 in the '035 patent with what we talked about at 17 Column 2, Lines 35 through 45 of the '446 patent? 18 A Once again, they look pretty similar. 19 I'd have to look more detail to see if they're 20 word-for-word identical, but they -- they 21 certainly discuss similar things. 22 Q And in Column 2, Lines 40 through 50,

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 42 of 120

September 13, 2022

1 does the '035 patent discuss a passivation film? 2 A It says: 3 Whereby a passivation film is formed on 4 the surface of the positive electrode and thus the 5 internal resistance the battery increases. 6 Q And would you characterize the 7 internal -- increasing the internal resistance of 8 the battery and the deterioration of the load 9 characteristic a problem? 10 A Those are not good things. 11 Q Now, will you please turn with me in the 12 same patent, we'll start with the '035. Would you 13 please turn with me to Column 4 Lines 6 through 14 16? 15 A 6 through 16. Okay. 16 Q Yes, sir. 17 So Column 4, Lines 6 through 16. 18 A Yep. 19 Q And that's -- that's right under the -- 20 the title "Detailed Description of the Invention." 21 Do you see that? 22 A Yes.	169 1 combination is the density of the positive 2 electrode mixture layer is increased? 3 MS. WRIGHT: Objection; form. 4 THE WITNESS: Could you restate that 5 again? 6 BY MR. DOUGLAS: 7 Q Yeah, fair -- fair enough. 8 And in -- in Column 4, Line 6 through 9 16, the '035 patent describes that the benefit of 10 smaller particle sizes and larger par -- particle 11 sizes is an increased density of the positive 12 electrode mixture layer. Correct? 13 A I think what it is saying is that, you 14 know, one of the advantages of the mixture of the 15 large and small particles is the density of the 16 positive electrode mixture layer is increased and 17 therefore the a battery -- the capacity of the 18 battery is increased. 19 Q And are there any other benefits to the 20 use of larger particle sizes and smaller particle 21 sizes? 22 A I would have to read through the rest of
170 1 Q And the first line says, The positive 2 electrode used. Do you see that? 3 A Yep. 4 Q Will you please read that -- that 5 paragraph. 6 A Yep. 7 Okay. Yep. 8 Q And in Column 4, Lines 6 through 16, the 9 '035 patent is discussing large and small particle 10 sizes. Is that correct? 11 A Yes. It's describing two different 12 particle sizes having different average particle 13 sizes, one smaller, one larger. 14 Q And starting at Line 14 of Column 4, the 15 '035 patent is talking about increased density. 16 Do you see that? 17 A Yes. 18 Accordingly, the density of the positive 19 electrode mixture layer is increased and, in turn, 20 the capacity of the battery is increased. 21 Q And do you agree with -- do you agree 22 that a benefit of small and large particles in	172 1 the patent to answer that question effectively. 2 Q And, as you sit here today, are you 3 aware, Dr. Lucht, of other benefits of using 4 smaller and larger particle sizes? 5 A Restate that question. 6 Q And, as you sit here today, Dr. Lucht, 7 are you aware of any other benefits of using 8 smaller and larger particle sizes in cathode 9 materials? 10 A Off the top of my head, not really right 11 now. But there may be. I mean, I think the 12 primary benefit would be to increase the capacity 13 of the cathode. 14 Q And then in the next paragraph, in 15 Column 4, Lines 17 through 29. Do you see that? 16 A 17 through 29. Okay. 17 Q Starting with -- starting with the 18 sentence, "The mixture of." Do you see that? 19 A Yep. 20 Q Will you please review that -- that 21 paragraph, Dr. Lucht. 22 A Okay.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 43 of 120

September 13, 2022

1 Q And this paragraph is talking about the 2 mixture of at least two lithium-containing 3 transition metal oxides having different average 4 particle sizes. Correct? 5 A That's the first two -- or basically 6 first two lines of the de- -- of that paragraph, 7 yes. 8 Q And then later, around Line 25 through 9 27, that paragraph discusses average particle 10 size. 11 Do you see that? 12 A Yes. It mentions -- 13 Q And what -- 14 A -- average particle size. 15 Q Yes. 16 And what is an average particle size? 17 A What is an average particle size? 18 Q Yes. 19 A So if you had all of the particles that 20 were there, it'd be the -- the -- and you sum them 21 all up, it would be average size. The one -- you 22 know, basically where half of them are larger and	173 1 through 16 of Column 4. 2 Q Yes, sir. Yes, sir. 3 And what does -- what does the term 4 "capacity" mean as it's used in Column 4, Lines 14 5 through 16? 6 A It's talking about the capacity of the 7 cathode. The amount of -- basically the amount of 8 potential charge or current you can have in the 9 battery. 10 Q And is that different than a discharge 11 capacity, Dr. Lucht? 12 A I mean, the -- there are a few different 13 terms one can use when referring to capacity. I 14 mean, discharge capacity is one, charge capacity 15 is another. And then usually -- you know, the 16 theoretical capacity is what you theoretically 17 started with. 18 Q And just so I understand, are -- would 19 you use discharge capacity and charge capacity as 20 synonyms of each other, or are they different -- 21 or they have different definitions? 22 A They're different. One's the capacity
174 1 half of them are smaller. 2 Q And -- and in parentheses, it uses 3 something that looks like D sub50? 4 A Yeah. 5 Q Are you familiar with that notation? 6 A I mean, slightly. It's not something 7 that I typically use. I've seen it in these 8 patents. 9 Q And -- and what does -- what is D sub50 10 mean in context of the '035 patent? 11 A I -- I think it means the 50 percent -- 12 you know, middle of the average, what the average 13 is. 14 Q Okay. So it'd be fair enough to -- to 15 say that the average particle size is this thing, 16 D sub50? 17 A I think so. 18 Q So when we were talking about, just a 19 few moments ago, increased density, you were 20 talking about increased capacity. 21 Do -- do you remember that, Dr. Lucht? 22 A Yes, the lines of -- of -- I think 14	175 1 on charge and one's the capacity on discharge. 2 In -- in most good, commercial lithium-ion 3 batteries, those two numbers are basically the 4 same after the first few charge cycles. 5 Q And in your opinion, would the -- would 6 a person of skill in the art want to improve 7 capacity as it's used in Column 4, Lines 14 8 through 16? 9 A I mean, in general, improving the 10 capacity is what is desired as long as you don't 11 have other detrimental effects at the same time. 12 Q I believe we talked a little bit 13 earlier, Dr. Lucht, about stability. Do you -- do 14 you remember that discussion? 15 A Yes. 16 Q And we talked about -- I've also seen 17 the term "voltage stability" used. Have -- have 18 you seen that term, "voltage stability"? 19 A I've seen the term "voltage stability," 20 but it's -- you know, it depends on what use 21 people are using it in. 22 Q And with respect to lithium-ion
176	176

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 44 of 120

September 13, 2022

1 secondary batteries, have you used the term 2 "voltage stability"? 3 A I mean, I guess we've probably used the 4 term "improving the voltage stability" or 5 something like that. 6 Q And -- and when you say "improving the 7 voltage stability," what do you mean by that? 8 A That would mean allowing the battery to 9 be charged to a higher voltage or higher 10 potential. 11 Q And would the person of skill in the art 12 want a battery with improved voltage stability? 13 A I mean, once again, that's what's 14 desired as long as you don't lose something else 15 in the tradeoff. 16 Q All right. I would like to go back to 17 Exhibit 1006 in the 1440 case, so it's going to 18 make you -- 19 A 1440. 20 Q -- flip those pages again. 21 A Yeah, that's fine. That's not a 22 problem. 1440.	177 1 by Formula 1 in Paragraph 37 of Kim Exhibit 1006? 2 A Well, 37 refers to as an aliphatic 3 nitrile and then the structure shows two nitriles 4 connected by an R group which R is usually 5 considered to be an aliphatic component. 6 Q And is R an alkane group having one to 7 15 carbons? 8 A That's what's stated in Paragraph 38. 9 Q And what is an alkane group? 10 A An alkane group is a carbon hydrogen 11 fragment with no unsaturation. Just -- just 12 carbon hy- -- carbon-carbon single bonds and 13 carbon-hydrogen single bonds. 14 Q And is Formula 1 as shown in Paragraph 15 37 a dinitrile? 16 A Yes, it appears to be a dinitrile. 17 Q Okay. And if -- and then if -- if we go 18 back, I believe in the same notebook, you have 19 your first declaration in the 1440 IPR? 20 A Yes. I think in this one. I think this 21 was the one -- was not the one that was missing 22 it.
178 1 Okay. I'm back to 1440. 2 Q And then -- 3 A Yes. 4 Q -- Exhibit 1006 please. 5 A 1000 -- it'll take me a minute to get 6 there. Hold on. 7 Q Yep. 8 A Yes. 9 Q All right. Exhibit 1006 is the Kim 10 reference? 11 A Yes. 12 Q Do you recognize it as the Kim 13 reference? 14 A Looks like it, yes. 15 Q Excellent. 16 Will you please turn with me to 17 Paragraph 37 of Kim. 18 A 37. Yep. 19 Q And would you please review Paragraph 20 37. 21 A Yep. 22 Q And what type of compound is represented	180 1 Q If you could turn to your first 2 declaration, that would be great. 3 A Yep. 4 Q It's Exhibit 2008, but we talked about 5 it earlier. This is the one that's dated 6 January 12th, 2022, if that helps. 7 A Yep. 8 Q And then if you have that in front of 9 you, will you please turn to Paragraph 39 of that 10 declaration? 11 A 39. 12 Q It's on Page 13. Paragraph 39, Page 13 13 of your -- 14 A Yes. 15 Q -- declaration. Okay. And at least in 16 the version I'm looking at, it says -- it starts 17 with "the Choi reference does not provide." 18 Do you see that? 19 A Choi reference does not provide a POSITA 20 with a reason to pursue a compound. 21 Yes. 22 Q Would you review Paragraph 39 please.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

181 1 A Yep. 2 Yes. 3 Q And in Paragraph 39, you state that: 4 The Choi reference does not provide a 5 POSITA with a reason to pursue a compound having 6 at least two nitrile groups in the molecule in 7 it's nonaqueous electrolyte. 8 Do you see that? 9 A That's -- that's what's stated. Yes. 10 Q And Paragraph 39 is in a section -- if 11 you -- and feel free to turn back. It looks like 12 a section called, "a POSITA would not be motivated 13 to combine the cathode and Choi with the electrode 14 in Kim." 15 A Yes. That's what the title is -- 16 Q So that -- 17 A -- in Section 2, I guess it is. 18 Q And in this Section 2, do you provide or 19 address whether the Choi reference provides a 20 POSITA with a reason to pursue a compound having 21 at least two nitrile groups in the molecule in its 22 nonaqueous electro- -- electrolyte?	183 1 reference to under- -- I'm still not really 2 following what you're trying to -- what you're 3 trying to ask. 4 Q Fair enough. And you're obviously free 5 to look at anything. 6 I -- I -- I'm -- what I'm seeing is in 7 Paragraph 39, you -- you have some opinions on 8 what Choi -- the Choi reference does not provide. 9 And I'm asking you if -- if you provided any 10 opinions of what the Kim reference does or not -- 11 does not provide in this declaration. 12 A By itself? 13 Q Correct. 14 A What just Kim describes? 15 Q So -- so -- so let's start again. 16 In Paragraph 39, you characterize -- or 17 you state: 18 The Choi reference does not provide a 19 POSITA with a reason to pursue a compound having 20 at least two nitrile groups in the molecule in its 21 nonaqueous electrolyte. 22 Do you see that?
182 1 A Can you say that again? I'm sorry. It 2 kind of confused me. 3 Q I -- I'm sorry. Let me start again. 4 In Section 2 of your declaration, do you 5 address whether the Kim reference provides the 6 POSITA with a referen- -- with a reason to pursue 7 a compound having at least two nitrile groups in 8 the molecule in its nonaqueous electrolyte? 9 A Once again, I'm not -- so going back to 10 the Kim reference, you're asking me if Kim does 11 what? 12 Q I -- I'm sorry, Dr. Lucht. I'm just 13 referring to your declaration, and we had looked 14 at your statement that says: 15 The Choi reference does not provide a 16 POSITA with a reason to pursue a compound having 17 at least two nitrile groups in the molecule in its 18 nonaqueous electrolyte. 19 And I was asking whether you'd addressed 20 whether the Kim reference provided a POSITA with a 21 reason to pursue. 22 A Can I go back and look at the Kim	184 1 A Yes. 2 Q Do you discuss the Kim reference at all 3 in Paragraph 39? 4 A Okay. In Paragraph 39. 5 In Paragraph 39, the Kim reference is 6 not mentioned. 7 Q And so now I would -- now I'm wondering 8 if, in a different Paragraph, you have 9 addressed -- you've made the same statement that 10 you did at the beginning of Paragraph 39 about the 11 Kim reference. 12 For example, have you said the Kim 13 reference does not provide a POSITA with a reason 14 to pursue a compound having at least two nitrile 15 groups in the molecule in its nonaqueous 16 electrolyte? 17 A I'm not sure if I stated that in the 18 declaration. I don't recall if that specific 19 statement that you're saying was something that 20 was stated in the declaration. 21 Q And in this declaration, have you 22 addressed whether any other reference provides the

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 46 of 120

September 13, 2022

1 person of ordinary skill in the art with a reason 2 to pursue a compound having at least two nitrile 3 groups with respect to Ground 1? 4 A Ground 1? What -- you lost me for a 5 second. 6 Q Okay. I'm -- I'm -- I'm sorry, 7 Dr. Lucht. That's -- that's a fair question. 8 If you turn back to Page 11, your Header 9 A characterizes Choi and Kim as "Ground 1." Do 10 you see the -- 11 A Yes. 12 Q -- parentheses? 13 A Petition fails to allege a sufficient 14 motivation to combine Choi and Kim, Ground 1. 15 Q I -- I apologize. So -- so -- so let me 16 restate it to make it more clear. 17 Have you -- have you addressed whether 18 any other references provide the person of skill 19 in the art with a reason to pursue a compound 20 having at least two nitrile groups with respect to 21 your discussion of Choi and Kim? 22 A Once again, I'm really not -- the way	185 1 and I think I -- I said that, to my recollection, 2 I don't -- didn't. 3 So you're asking me now if I considered 4 other things other than what I said I didn't 5 consider? Is that what you're trying to ask me? 6 Q I'm just trying to confirm, Dr. Lucht, 7 that there isn't another reference that -- that 8 you used to -- in this particular section of your 9 declaration that isn't listed here. I'm just -- 10 I'm just confirming -- 11 A I can not -- can not -- that I -- 12 Q -- that there is -- 13 A -- can't -- not that I can recall. I 14 mean, what I was responding to in this was -- was 15 the Ground 1 of combining Choi and Kim. 16 Q Okay. And in Paragraphs 33 through 40, 17 have you rendered an opinion as to whether Kim 18 provides a POSITA with a reason to pursue a 19 compound having at least two nitrile groups in the 20 molecule in its nonaqueous electrolyte? 21 A And once again, I -- I think in these 22 paragraphs, we were -- or I was, you know,
186 1 you're wording your question, I'm not really 2 understanding what you're trying to ask. 3 Q Fair enough. Starting at Paragraph 33 4 through Paragraph 40 -- 5 A Yeah. 6 Q -- have you addressed any other 7 references, other than -- let me start again. 8 Have you addressed -- other than Choi 9 and Kim, have you addressed any other references 10 in your discussion at Paragraphs 33 through 40? 11 A I mean, I -- I'm just kind of confused 12 because Ground 1, my understanding was a 13 combination of Choi and Kim. 14 Q Fair -- fair enough. But I'm just 15 wondering if -- 16 A And you're asking me if I considered 17 other things other than what was in Ground 1? 18 Q Correct. 19 A I mean, I -- I don't understand why -- I 20 mean, I -- I think when I started this whole 21 thing, you asked me if I looked at any other 22 references when putting together the declaration,	187 1 discussing the motivation to combine -- combine 2 Choi and Kim. I -- I -- I don't think we 3 discussed anything in this or I discussed anything 4 in this that was related to just Kim by itself in 5 the way that you're saying it. 6 Q And -- and I'm just trying to 7 understand, Dr. Lucht, whether you have rendered 8 an opinion in these paragraphs as to whether Kim 9 does or does not provide a POSITA with a reason to 10 pursue a compound having at least two nitrile 11 groups in the molecule in its nonaq- -- nonaqueous 12 electrolyte? 13 A Once again, I guess I -- I need -- I'm 14 not really try -- following what you're -- you're 15 saying what I -- in -- in these it two paragraphs, 16 there's -- there's two or three pages here, and it 17 discusses the combination of Choi and Kim and why 18 there's not sufficient motivation to combine them. 19 And now I -- you're asking me, is there a 20 motivation for Kim to do what Kim says? 21 I don't -- I'm not following what you're 22 trying to ask.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 Q I -- I'm just trying to figure out the 2 scope of your opinions. You -- you have rendered 3 an opinion that the Choi reference does not 4 provide a POSITA with a reason to pursue a 5 compound having at least two nitrile groups in the 6 molecule in its nonaqueous electrolyte, and I'm 7 simply asking if you've rendered a similar opinion 8 with respect to the Kim reference. 9 A Outside of Ground 1? So this is 10 unrelated to anything -- I'm confused as to why 11 we're looking at these pages. 12 Q Because I'm trying to figure out the 13 scope of your opinions, Dr. Lucht. And -- and I 14 think I'm understanding that you've only opined on 15 the teachings of what the Choi reference provides 16 a POSITA and not what Kim provides a POSITA, but 17 I'm trying to figure out the meets and bounds of 18 your opinion. 19 A Okay. So we -- 20 MS. WRIGHT: Objection. 21 THE WITNESS: I mean -- 22 MS. WRIGHT: Form.	189 1 get there. I'm more -- I'm more concerned about 2 the motivations -- the motivation to combine 3 section and whether you rely on Kim's teachings 4 when you say the POSITA would have no reason to 5 pursue a compound having at least two nitrile 6 groups in the molecule in its nonaqueous 7 electrolyte. 8 And it sounds -- it sounds like the 9 answer's "no." 10 MS. WRIGHT: Objection; form. 11 THE WITNESS: I mean, once again, if 12 you'd like to discuss Kim, we can flip to it. I 13 mean, in terms of the Ground 1 discussion, which 14 is in Section 5(A) whatever, I -- I commented my 15 opinion of Ground 1, which is combining Choi and 16 Kim. 17 BY MR. DOUGLAS: 18 Q Let's turn to Paragraph 33. 19 A Of this same -- 20 Q Yes. 21 A -- (indiscernible). 22 Q Sorry. Of Exhibit 2008, 1440 IPR.
190 1 THE WITNESS: -- if you -- I mean, we 2 can go back and look at Kim if you have questions 3 about Kim reference and I can -- I can discuss my 4 opinion of the Kim reference. 5 BY MR. DOUGLAS: 6 Q And -- and we will -- we'll very well do 7 that before the day is through. 8 But -- but I'm not seeing those opinions 9 in this declaration, and I'm trying to figure out 10 where those opinions are so I can ask you about 11 them. 12 A Well, I guess I don't -- I mean, my 13 opinion -- you -- the -- the -- the opinion's 14 about the combination of Choi and Kim -- 15 Q Okay. 16 A -- on these pages. 17 Q That's -- that's -- that -- that's 18 correct. 19 A So if you have specific questions about 20 Kim, I mean, I'm happy to go and look at Kim and 21 ask -- and answer specific questions about Kim. 22 Q And -- and like I said, we'll -- we'll	192 1 A 1440 IPR. Wait what was -- what were 2 you going to again? This is still -- 3 Q Just -- 4 A -- my declaration? 5 Q Yes. Same -- same declaration, 6 Paragraph 33. 7 A Okay. 8 Q And in Paragraph 33, do you render an 9 opinion of whether the Kim reference provides a 10 POSITA with a reason to pursue a compound having 11 at least two nitrile groups in the molecule in its 12 nonaqueous electrolyte? 13 A I mean, in Paragraph 33, I state that a 14 POSITA would not combine Kim and Choi. And Kim 15 and Choi do -- do not disclose -- Choi and Kim do 16 not disclose similar cathode materials 17 (indiscernible reading) misleading. So a POSITA's 18 not involve -- motivated to combine the lithium 19 secondary battery Choi with the electrolyte 20 disclosed in Kim. 21 But no, I -- I mean, in this discussion, 22 I don't suggest -- comment on Kim alone because

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

193 1 this is related to the combination of Choi and 2 Kim. 3 Q And then in Paragraph 34, do you address 4 whether the Kim reference provides a POSITA with a 5 reason to pursue a compound having at least two 6 nitrile groups in the molecule in its nonaqueous 7 electrolyte? 8 A In what? Paragraph 34, you're saying? 9 Q Yes, sir. 10 A In Paragraph 34, I'm discussing Choi and 11 the reference discloses a complex cathode active 12 material and -- and Kim is not mentioned in 13 section 34 -- or Paragraph 34, sorry. 14 Q And turning now to Paragraph 35, do you 15 render an opinion as to whether the Kim reference 16 provides a POSITA with the reason to pursue a 17 compound having at least two nitrile groups in the 18 molecule in its nonaqueous electrolyte? 19 A I mean, once again, in this paragraph, 20 I'm stating that the Kim discloses a different 21 cathode active material technology than Choi. Kim 22 does not disclose the combination of large act --	195 1 nitrile groups in the molecule in its nonaqueous 2 electrolyte? 3 A So in this paragraph, I state that: 4 I understand the Petitioner -- the 5 Petitioner argues that a POSITA would have looked 6 to Kim and its inclusion the electrolyte of a 7 compound having at least two nitrile groups the 8 molecule improve the thermal stability but Choi 9 does not discuss the effect of electrolyte 10 nonaqueous (indiscernible) thermal stability. 11 There's a POSITA evaluating Choi 12 reference (indiscernible) of Choi combining the 13 electrolyte disclosed in Kim, and so, once again, 14 I did not discuss Kim by itself. 15 Q And in Paragraph 39, do you discuss 16 whether the Kim reference provides a POSITA with a 17 reason to pursue a compound having at least two 18 nitrile groups in the molecule in its nonaqueous 19 electrolyte? 20 A Paragraph 39, the Kim reference is not 21 mentioned, so no, it does not state that. 22 Q Because in Paragraph 39, you address the
194 1 large diameter active material and small active 2 diameter material. 3 Q And in Paragraph 36, do you opine 4 whether the Kim reference provides a POSITA with a 5 reason to pursue a compound having at least two 6 nitrile groups and the molecule in its nonaqueous 7 electrolyte? 8 A I mean, Paragraph 36 does not address 9 that as far as I can see reading it. 10 Q And turning now to Paragraph 37, do you 11 address whether the Kim reference provides a 12 POSITA with the reason to pursue a compound having 13 at least two nitrile groups in the molecule in its 14 nonaqueous electrolyte? 15 A I mean, once again, the Paragraph 37 16 discusses the combination of Choi and Kim as was 17 described in Ground 1 and doesn't describe Kim 18 individually. 19 Q And turning now to Paragraph 38, which 20 spans Page 12 and 13, does Paragraph 38 address 21 whether the Kim reference provides a POSITA with a 22 reason to pursue a compound having at least two	196 1 Choi reference alone? 2 A The Choi reference is the only reference 3 mentioned in Paragraph 39. 4 Q So, Dr. Lucht, you address the Choi 5 reference alone, but you -- do you have any 6 reason, as you sit here today, why you did not 7 address the Kim reference alone? 8 A I don't recall why I would have not done 9 that. 10 Q And then turning to Paragraph 40, in 11 Paragraph 40, do you discuss whether the Kim 12 reference provides a POSITA with a reason to 13 pursue a compound having at least two nitrile 14 groups in the molecule in its nonaqueous 15 electrolyte? 16 A Say that again. But I don't -- I, you 17 know -- say that -- I -- once again. Some of your 18 questions are kind of long. And you -- you don't 19 talk quite as fast as I do. But sometimes your 20 talking is fast. 21 Q That was very fair, Dr. -- Dr. Lucht. 22 Referring to page -- or Paragraph 40,

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 49 of 120

September 13, 2022

1 and I'm reading this -- the same clause from the 2 first -- the first sentence of Paragraph 39, but 3 I'm -- my question is, with respect to Paragraph 4 40, do you discuss whether the Kim reference 5 provides a POSITA with a reason to pursue a 6 compound having at least two nitrile groups in the 7 molecule in its nonaqueous electrolyte? 8 A No. Once again, it doesn't really 9 discuss Kim. 10 Q And then if you'll turn with me to the 11 1443 IPR, this is the '019 patent. 12 A The '019 patent? 13 Q Yes. And I'm sorry, doc- -- Dr. Lucht. 14 I believe this is the one you have to reference on 15 your computer. 16 A Oh, is this the one I've got to go on my 17 computer? 18 Q Oh, no. No. No. Sorry. Sorry. 19 Sorry. That's the '035. I'm -- I'm sorry. 20 A That's okay. There's a lot of them 21 here. It gets a little confusing. 22 Q Yeah.	197	1 Q And is it fair to say that Paragraph 39 2 in Exhibit 2008 in the 1443 case is the same as 3 Paragraph 39 in Exhibit 2008 of the 1440 case? 4 A Once again, I can agree that they're 5 very similar. I'd have to look and see if they're 6 word-to-word identical. 7 Q Okay. All right. Turning back to 8 Paragraph 33. 9 A Okay. 10 Q Will you please look at Paragraph 33 -- 11 A Yes. 12 Q -- in Exhibit 2008 of the 1443 case. 13 In exhibit -- in Paragraph 33, do you 14 discuss whether the Kim reference provides a 15 POSITA with a reason to pursue a compound having 16 at least two nitrile groups in the molecule in its 17 nonaqueous electrolyte? 18 A So once again, similar to the -- the -- 19 the previous Paragraph 33, this paragraph 20 discusses the combination of Choi and Kim, but not 21 Kim alone. 22 Q And turning now to Paragraph 34, does	199
1 A There's a lot of different -- hold on. 2 Let me go back. 3 Which one is it, again? 4 Q The 1443. '019. I'm -- I'm -- I'm 5 sorry. I did not mean to -- 6 A 1443. 7 Q -- lead you astray. 8 A '443. '019. Yes. '443. 9 Q Yes. 10 A '019. Yes. Where are we going to? 11 Q And if you would please turn with me to 12 Paragraph 39. 13 A Of my declaration? 14 Q Of your declaration, yes, sir. 15 A Paragraph 39. Yes. 16 Q And in Paragraph 39, you state that: 17 The Choi reference does not provide a 18 POSITA with a reason to pursue a compound having 19 at least two nitrile groups in the molecule in its 20 nonaqueous electrolyte. 21 Do you see that? 22 A Yes.	198	1 Paragraph 34 of Exhibit 2008 in the 1443 case 2 discuss whether the Kim reference provides a 3 POSITA with a reason to pursue a compound having 4 at least two nitrile groups in the molecule in its 5 nonaqueous electrolyte? 6 A Once again, Paragraph 34 only mentions 7 the Choi reference and does not mention the Kim 8 reference. 9 Q Now turning to Paragraph 35, does 10 Paragraph 35 address whether the Kim reference 11 provides a POSITA with a reason to pursue a 12 compound having at least two nitrile groups in the 13 molecule in its nonaqueous electrolyte? 14 A I mean, the -- Paragraph 35 discusses, 15 you know, Kim related to Choi, but does not 16 discuss Kim independently. 17 Q And referring to Paragraph 36, does 18 Paragraph 36 address whether the Kim reference 19 provides a POSITA with a reason to pursue a 20 compound having at least two nitrile groups in the 21 molecule in its nonaqueous electrolyte? 22 A Again, it discusses the relationship of	200

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 50 of 120

September 13, 2022

201 1 Kim and Choi in terms of the cathode active 2 material and the fact that their cathode active 3 materials are different. But that does not bring 4 up -- discuss Kim alone. 5 Q And turning now to Paragraph 37, does 6 Paragraph 37 in your declaration discuss whether 7 the Kim reference provides a POSITA with a reason 8 to pursue a compound having at least two nitrile 9 groups in the molecule in its nonaqueous 10 electrolyte? 11 A I mean, once again, this does not 12 discuss Kim as an individual case. 13 Q And then turning to Paragraph 38, does 14 Paragraph 38 address whether the Kim reference 15 provides a POSITA with a reason to pursue a 16 compound having at least two nitrile groups in the 17 molecule in its nonaqueous electrolyte? 18 A Once again, it -- it discusses that -- 19 that, you know, Kim has an inclusion of the 20 electrolyte with the compound having at least two 21 nitrile groups. But once again, it discusses the 22 combination of Kim and Choi.	203 1 A Yeah. 2 Q Just moving a couple paragraphs later, 3 Dr. Lucht, to Paragraph -- 4 A Oh, paragraphs. 5 Q -- 46. 6 A Sorry. I was looking at pages, not 7 paragraphs. I was, like -- 8 Q Sorry. 9 A -- there's not that many pages. 10 What paragraph are you at, again? 11 Sorry. Sorry. Sorry. 12 Q Paragraph 46. 13 A Paragraph 46. Okay. Sorry. I 14 apologize. 15 Q Page -- yeah. Page 16 starting with, 16 "Further -- further as provided above." 17 Do you see that? 18 A Yes. 19 Q Okay. Will you just review 20 Paragraph 46, please, sir. 21 A Sure. 22 Okay. Yes.
202 1 Q And does Paragraph 39 of your 2 declaration, Exhibit 2008 in the 1443 case, 3 discuss whether the Kim reference provides a 4 POSITA with a reason to pursue a compound having 5 at least two nitrile groups in the molecule in its 6 nonaqueous electrolyte? 7 A So once again, 30 -- Paragraph 39 only 8 mentions Choi. 9 Q And with respect to Paragraph 40, does 10 Paragraph 40 of your declaration discuss whether 11 the Kim reference provides a POSITA with a reason 12 to pursue a compound having at least two nitrile 13 groups in the molecule in its nonaqueous 14 electrolyte? 15 A So going to Paragraph 40, once again, it 16 discusses a combination of Choi and Kim. 17 Q Now, if we can stick with the same 18 declaration and turn to Paragraph 46. 19 So Paragraph 46, Exhibit 2008 in the IPR 20 01443. 21 A Wait a second. What? 22 Q So we're still on the 1443 case.	204 1 Q And in the last sentence, you say: 2 Therefore limiting the amount of 3 magnesium containing M2 to .002 less than or equal 4 to Z, less than or equal to .005 is critical to 5 the '019 patent. 6 Do you see that? 7 A Yes. 8 MS. WRIGHT: Objection; form. 9 BY MR. DOUGLAS: 10 Q Dr. Lucht, will you -- will you read the 11 last sentence of Paragraph 46, please. 12 A The last par- -- sentence of Paragraph 13 46 says: 14 Therefore, limiting the amount of the 15 magnesium containing M2 to 0.002 greater than or 16 equal to -- or less than or equal to Z, less than 17 or equal to 0.005 is critical to the '019 patent. 18 Q And this is your testimony. Correct? 19 A This is my testimony? This -- I mean, 20 that's what -- that's a -- that's a critical 21 component of -- of the '019 patent. Is that what 22 you're asking? I'm -- I'm not --

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 51 of 120

September 13, 2022

205 1 Q Yes. Yes. 2 A Yes, but -- yes, I believe this is a -- 3 an important component of the '019 patent. 4 Q So in view of your statement, the last 5 sentence of Paragraph 46, could magnesium have a Z 6 value of .0008? 7 A 0.0008? 8 Q Yes, sir. 9 A Well, that is less than 0.002, so that 10 would not fit into the description. 11 Q Okay. And by the same token, applying 12 the last sentence of Paragraph 46, magnesium could 13 also not have a Z value of .0051. Correct? 14 A Okay. Wait. Hold on. 15 Q Yep. 16 A You said 0.0051? I've got to write -- 17 Q That's what I said and -- and that's -- 18 that's wrong, Dr. Lucht. 19 A Okay. That's -- that's -- that's above 20 0.002 so that would fit in there. 21 Q Okay. Thank you. Let me try it one 22 more time.	207 1 up, then, to .001? Is that -- is that correct? 2 A Yes. 3 Q Okay. 4 A That is correct. 5 Q And then if we can turn back to the 1440 6 case at the '446 patent, your -- your declaration, 7 Dr. Lucht. 8 A Okay. 9 Q And if we could -- if we could glance at 10 Paragraph -- 11 A 1440? 12 Q Yes, sir. 13 A 1440. Okay. Yeah. 14 Q And if we could look at Paragraph 44, 15 please, sir. 16 A Paragraph 44, yes. 17 Q And if you look at the last sentence of 18 Paragraph 44, it starts with, "Therefore, comma 19 limiting." 20 Do you see that? 21 A Yes. 22 Q And when you -- looking at that last
206 1 Applying the statement at the bot- -- at 2 the last sentence of Paragraph 46, can magnesium 3 have a Z value of 0.051? 4 A 0.051 is what you're saying? 5 Q Yes, sir. 6 A Well, I mean, in that case, I would say 7 0.051 with the -- with the significant figures of 8 0.05 is 0.05. So that would fit following the 9 standard scientific rounding. 10 Q And so could the amount of the magnesium 11 containing M2, according to what you state in the 12 last sentence of Paragraph 46, have a Z value of 13 .055? 14 A No. Because .0055 -- 0.055 would round 15 up to 0.06 according -- following standard 16 scientific rounding rules. 17 Q And then going back to my first question 18 where we were talking about 0.0008 -- 19 A Yeah. 20 Q -- and that fell outside of the range -- 21 A Uh-huh. 22 Q -- is that because you would only round	208 1 sentence, is that the same sentence that we were 2 just talking about with respect to the '019 patent 3 in the 1443 IPR? 4 A It appears to be the same thing. 5 Q And would any of your answers change 6 with respect to the Z value of magnesium in this 7 case, the 1440 case, if we went through them 8 again? 9 A No. 10 Q And then, I believe this is the one 11 that's on your computer, but I'm not trying to 12 mislead you. 13 If we could look at the 1441 declaration 14 in the '035 patent. 15 A '441, '035. Yeah. 16 Q And I think if you turn to Paragraph 39, 17 you'll see the same sentence. 18 A I can't turn, but I can scan. 19 Q Oh, yeah. I'm sorry. 20 A It's okay. What -- which paragraph, 21 again? 22 Q 39, please, sir.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 52 of 120

September 13, 2022

209 1 A 39. 39. In the last sentence? 2 Q Yes, sir. 3 A "Therefore, limiting the amount of 4 magnesium containing M2 to 0.002, less than or 5 equal to Z, less than or equal to 0.05." 6 Q Yes. And would you agree with me that 7 this is the same sentence that we looked at in 8 both the 1440 IPR and the 1443 IPR? 9 A Yes, that appears to be the same 10 sentence. 11 Q And if we went through the same 12 questions with respect to the Z value of 13 magnesium, would any of your answers change in 14 this IPR? 15 A No. 16 Q All right. Do you still have the -- the 17 '446 patent close by? 18 A '446. They're all close by. 19 Q Yes. 20 A Yeah. My office is not that big. 21 Q The '446 patent, which is Exhibit 1001. 22 Let me know when you have Exhibit 1001.	211 1 you recall that discussion? 2 A Yes. 3 Q Okay. Will you turn with me to the '446 4 patent, please, which is Exhibit 1001 in the 1440 5 case. 6 A Yep. 7 Q And then will you turn with me to 8 Claim 1, which is on Page 18, bottom right corner. 9 A Claim 1. Yes. 10 Q And are you familiar with Claim 1, 11 Dr. Lucht? 12 A Yes. 13 Q And about Line -- Column 28, Line 50, it 14 starts, "Wherein M1 represents." 15 Do you see that, Dr. Lucht? 16 A Wait a second here. Line what? 17 Q Column 28, Line -- 18 A Oh. 19 Q -- 50. 5-0. 20 A 50. Okay. Sorry. I heard -- I heard 21 you reversed. 22 Q Okay.
210 1 A I got it up, but can I take a break? I 2 need to use -- use the facilities. 3 Q Oh, yes. 4 A (Indiscernible.) 5 Q Yeah. No. Absolutely. Absolutely. 6 This -- 7 A One or two quick questions, we can do 8 that. But I'd rather, you know -- 9 Q No, no. Let's -- let's -- let's go off 10 the record. 11 A And I think we're at -- I think we're 12 pretty much at an hour again. 13 Q Okay. Fair enough. Sorry about that. 14 THE VIDEOGRAPHER: We're going off the 15 video record. The time is 2:42 p.m. 16 (Whereupon, there was a recess in the 17 proceedings.) 18 THE VIDEOGRAPHER: We are back on the 19 video record. The time is 2:54 p.m. 20 BY MR. DOUGLAS: 21 Q Dr. Lucht, we were talking, right before 22 the break, about magnesium and (inaudible). Do	212 1 A Yes. Line 50, Column 28. 2 Q And it starts with, "Wherein, M1." 3 Do you see that? 4 A Yes. 5 Q And will you read that clause to 6 yourself quickly? 7 A Yep. 8 Okay. 9 Q And do you see, starting about Line 51, 10 "M2 represents magnesium and at least one metal 11 selected from the group consisting of titanium, 12 zirconium," and then it continues. 13 Do you see that? 14 A Yes. 15 Q And just so I understand, if I choo- -- 16 if I choose titanium, TI, could titanium have a Z 17 value of .05? 18 MS. WRIGHT: Objection; form. 19 THE WITNESS: State that question again. 20 BY MR. DOUGLAS: 21 Q Reviewing Claim 1, Line -- the clause 22 starting at Line 50, M2 represents magnesium and

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 at least one other metal element. 2 Is that correct? 3 A Yes. 4 Q And if I chose ti- -- and can I choose 5 titanium as that other metal element? 6 A Okay. 7 Q And if I chose titanium as that other 8 metal element, could I have a Z value for titanium 9 as 0.05? 10 MS. WRIGHT: Objection; form. 11 THE WITNESS: Well, I think if the 12 combination of titanium plus magnesium is less 13 than 0.05, then yes, you could do that. 14 BY MR. DOUGLAS: 15 Q And so if I chose magnesium and 16 titanium, would each mag- -- would each of 17 magnesium and titanium have a Z value that fell 18 into the range recited in Claim 1? 19 A I think, from my reading of it, is the 20 combination of the two would have to fit in the 21 range because M2 represents magnesium and at least 22 one other metal.	213 1 Line 4, do you see reference to M3 -- 2 A In -- 3 Q -- in Paragraph (indiscernible)? 4 A Yeah. "M3 represents an element other 5 than lithium, M1, and M2." 6 Q And is -- and so is M3 required to be 7 present in Claim 2 of the '446 patent? 8 A M3 subscript is D. D is between zero 9 and 0.02 and so, therefore, M3 would be optional. 10 Q Turning to Claim 3 of the '446 patent 11 and looking at Column 30, Line 4, do you see M3? 12 A Column 30, Line 4. "M3 represents an 13 element other than lithium, M1, and M2." 14 Q Yes. 15 And is M3 required to be present in 16 Claim 3 of the '446 patent? 17 A D is the subscript for M3. D is a value 18 between zero and 0.02. So it is optional. 19 Q And then, if you would please turn to 20 the '019 patent which is -- the '019 patent is the 21 1443 case. 22 A Okay. Hold on for a second. I don't
214 1 Q Okay. 2 A So it would be the concentration of 3 magnesium plus the concentration of titanium. 4 Q Okay. And then sticking with Claim 1 in 5 the '446 patent, in that same clause that we've 6 just been talking about, starting at about 7 Line 53, there's reference to M3. 8 Do you see that? 9 A Yes. "M3 represents an element other 10 than lithium, metal -- M1 and M2." 11 Q And is M3 required to be present in 12 Claim 1 of the '446 patent? 13 A Well, M3 is characterized by the subunit 14 V, of which V can be zero -- greater than zero and 15 less than 0.05. 16 Q And so is M3 required to be present in 17 Claim 1 of the '446 patent? 18 A So it can be zero, so it's not required. 19 Q And turning now to Claim 2 of the '446 20 patent. 21 A Yes. 22 Q And looking at Line -- Column 29,	216 1 want to knock my food off the table. 2 Which one is that again? 3 Q 1443. If -- if -- if you have the '446 4 still open, can we just go quickly back there, 5 Dr. Lucht? I'm sorry. 6 A I've still got it. They're all still 7 open. They're all here. I got -- 8 Q Sorry about that. 9 A I don't have a big office, but my desk 10 is big enough. 11 Q I feel bad asking you to switch gears 12 and then bring you back. I'm sorry. 13 Claim 4, which is in the '446 patent, 14 Column 30, Line 20, you'll see M3 there again. 15 Do you see that? 16 A Yes. "M3 represents an element other 17 than lithium, M1, and M2." 18 Q Is M3 required to be present in Claim 4 19 of the '446 patent? 20 A So the M3 subscript is V. V can have a 21 value between 0 and 0.05 and so, since it can -- 22 you know, it's above zero, it's optional.

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 54 of 120

September 13, 2022

217 1 Q Now, can we please transition to the 2 '019 patent which is 1443, and then we'll just 3 turn to Claim 1 if that's all right. 4 A '019, '443? 5 Q Yes, sir. 6 A Yep. You want to go to the patent? 7 Q Yes, please. 8 A Which is 1001? Is that correct? 9 Q Yes, sir. 10 A Okay. I got it. 11 Q And looking at Claim 1 of the '019 12 patent, do you see where it references M3? 13 A Yes. 14 Q And is M3 required to be present in 15 Claim 1 of the '019 patent? 16 A M3 has a subscript -- I can barely read 17 that -- of V again. V is between zero and 0.05, 18 so since it includes -- you know, if zero's the 19 limit, you know, it -- it is -- it is optional. 20 Q And will you please turn to Claim 2 of 21 the '019 patent. 22 A Claim 2. Yes.	219 1 Q And Column 29, Line 35, do you see M3 2 notation there? 3 A "M3 represents at least one element 4 selected from the group consisting of" a bunch of 5 things. 6 Q Yes. 7 And is M3 required to be present in 8 Claim 1 of the '035 patent? 9 A MZ [sic] has a subscript of V. V is 10 less than 0.05 and greater than or equal to zero, 11 which means it could be zero, which means it's 12 optional. 13 Q And then a little bit further down, 14 there's another M3 at about Line 48. 15 A Yes. M3 here has a subscript of D. D 16 is less than 0.02 and greater than or equal to 17 zero, and so therefore, it is optional. 18 Q And then looking now to Claim 2 -- 19 A Claim 2. Yes. 20 Q -- of the '035 patent, it appears that 21 Claim 2 alters the D value recited in Claim 1. 22 Do you see that?
218 1 Q And in Claim 2, do you see the notation 2 M5? 3 A Yes, M5. 4 Q And I'm sorry. Just below that is M6. 5 A Yes. 6 Q "M6 represents an element other than 7 lithium." 8 A Yes. 9 Q And is M6 required to be present in 10 Claim 2 of the '019 patent? 11 A M6 has a subscript of Z. Z is less than 12 0.2 and greater than or equal to zero, so yes, 13 it's optional. 14 Q Okay. And then lastly, will you turn 15 with me to the '035 patent -- 16 A Yep. 17 Q -- on the 1441 matter. 18 A '035 patent, yes. 19 Q '035, 4 -- '441. 20 And if you would go with me to Claim 1 21 please. 22 A Claim 1. Yes.	220 1 A Let me see. 2 (Indiscernible.) 3 So in this case, the value for M3, which 4 has a subscript of D, is from 0 to 0.005, which is 5 not the same value that was in Claim 1. 6 Is that what you asked? 7 Q Yes. 8 And is M3 required to be present in 9 Claim 2? 10 A In Claim 2, M3 is not required. 11 Q Okay. All right. So I'd like to now 12 turn back to the 1440 case, and look at 13 Exhibit 1007. 14 A Exhibit 1007? 15 Q Yes, sir. 16 A Okay. 1007 which is at the top of it. 17 I see a number 19 in parentheses, "The National 18 Intellectual Property Administration of the 19 People's Republic of China." 20 Q Yes. 21 A Is that what you're talking about? 22 Q Yes. And then about five lines down,

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 you see 20 -- that 21 in brackets application 2 number -- 3 A Yep. 4 Q -- 200610073006.7. 5 Do you see that? 6 A That's what I got. 7 Q And do you recognize Exhibit 1007 as the 8 Koshiishi reference? 9 A This is -- yes, I recognize this is the 10 Koshiishi reference. 11 Q And -- and just so you're comfortable, 12 halfway down on the page, there's that number 72, 13 "Inventors, Mayumi Koshiishi." 14 A Yes. I saw that. 15 Q Okay. Good. All right. 16 So using the numbering in the -- in the 17 lower corners of the document, will you please 18 turn with me to Page 12 of Koshiishi. 19 A Okay. Page 12. 20 Q And on Page 12, about three-quarters of 21 the way down, maybe a little bit further, there's 22 something called "Embodiment 1 [Fabrication of	1 cobalt aluminum, 81:16:3, with an average 2 particles diameter of 12 micron as a lithium 3 nickel cobalt oxide compound. 4 Q And will you turn with me now to Page 14 5 in Embodiment 2, which is near the end of the page 6 of Page 14. 7 A Okay. Yes, what's your -- 14? 8 Q Yes. 9 A Embodiment 2? 10 Q Yes. 11 A Okay. 12 Q And turning to Embodiment 2 on Page 14 13 of Koshiishi, what cathode active materials does 14 Koshiishi disclose? 15 A It -- Embodiment 2 -- it looks like it's 16 using the same two cathode materials, just changed 17 the ratios of the different cathode materials. 18 Q Okay. And then turning to embodiment 3, 19 which is just below it on paragraph -- or on 20 Pages 14 and 15 of Koshiishi, what cathode active 21 materials does Koshiishi disclose? 22 A It appears to, once again, utilize the
1 positive electrode]." 2 Do you see that? 3 A Yes. 4 Q Okay. And just below that, there's a 5 paragraph that starts, "For the active material." 6 Do you see that? 7 A Yep. 8 Q Will you please review that paragraph 9 for the active -- starting with, "For the active 10 material." 11 A Okay. 12 Okay. Oh, but it keeps on going on the 13 next page. 14 Q Okay. Yep. Feel free to -- to read the 15 entire paragraph. 16 A Okay. 17 Q And in Embodiment 1 of Koshiishi, 18 starting on Page 12 of Exhibit 1007, what cathode 19 active materials does Koshiishi disclose? 20 A Well, as it says in the description for 21 the active material, it use -- use a mixture of 22 lithium cobalt oxide, LICOO2, and lithium nickel	1 same two active cathode materials, it just changes 2 the ratios of the combination. 3 Q Okay. And so would you agree with me 4 that Koshiishi identifies lithium cobalt oxide as 5 an example of a cathode active material? 6 A Koshiishi has lithium cobalt oxide as 7 one of the components of the cathode active 8 material. 9 Q And then, turning now to Exhibit 1008 in 10 the same case, the 1440 case. 11 And do you recognize Exhibit 1008 as the 12 Abe reference? 13 A This is the Abe reference. 14 Q And publication No. 2004/0013946. 15 Do you see that? 16 A Yes. 17 Q And just to make sure we have the 18 spelling right, do you see, Dr. Lucht, under Abe 19 and correspondence addresses Nixon Peabody, the 20 assignee is Ube Industries, Limited? 21 A Yes. 22 Q Is that the same Ube we were talking

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 about earlier? 2 A That's the same Ube. 3 Q Okay. Got it. Got it. 4 A That is -- 5 Q Thank you. 6 A -- the same Ube. 7 Q Thank you. 8 Can we please turn to exi- -- or to 9 Paragraph 33 of the Abe reference. 10 A Paragraph 33. Yes. 11 Q And will you review Paragraph 33, 12 please. 13 A Sure. 14 Okay. 15 Q And in Paragraph 33, Abe discloses 16 lithium cobalt oxide as an example of a 17 lithium-containing transition metal oxide to be 18 used as a cathode active material. Correct? 19 A Lithium cobalt oxide is one of the 20 positive active materials, cathode material in 21 Paragraph 33. 22 Q Okay. All right. Let's flip back to	1 next page. 2 A Okay. 3 Q Okay. 4 A Okay. 5 Q Does Koshiishi disclose ethylene 6 carbonate and ethyl methyl carbonate as esters? 7 A It lists esters such as propylene 8 carbonate, ethylene carbonate, butyrolactone, and 9 what was the other one you said? Ethyl methyl 10 carbonate? 11 Q Ethylene carbonate and ethyl methyl 12 carbonate. 13 A Yes. Ethylene carbonate is listed there 14 and ethyl methyl carbonate is listed. 15 Q Okay. And continuing to Page 13, 16 there's a header about middle of the page in 17 brackets called "Battery assembly." 18 Do you see that? 19 A Yes, I see the "Battery assembly" 20 bracket. 21 Q And then under that, there's a paragraph 22 starting with "Install wiring bodies."
1 Koshiishi. So that was Exhibit 1007 in the 1440 2 IPR. 3 A In the 1440. Yep. 4 Q And so we were just looking at 5 Koshiishi, but this is the one from People's 6 Republic of China, Application No. 200610073006.7. 7 Do you see that? 8 A Yes. 9 Q Okay. Will you turn with me to Page 11 10 of Koshiishi Exhibit 1007. 11 A Page 11. Okay. Yes. First word on -- 12 is "preferably, it is" -- or first three. 13 Q Yes, sir. 14 And I'd like to turn your attention to 15 the last two paragraphs -- I guess the second 16 one's not a full paragraph. But starting with the 17 paragraph that says, An electrolyte solution. 18 Do you see that? 19 A Yes. 20 Q And will you review, starting with an 21 "electrolyte solution," and then the next 22 paragraph, which, in fairness, continues onto the	1 Do you see that? 2 A Yes. 3 Q Will you please review that paragraph, 4 Dr. Lucht. 5 A Okay. 6 Q And what solvents does Koshiishi 7 disclose in the paragraph starting with "Install 8 wiring bodies" on Page 13 of 49 of Koshiishi? 9 A Utilizes a mixed solvent of ethylene 10 carbonate and ethylene methyl carbonate. 11 Q And so Koshiishi disclose the use of 12 ethylene carbonate and ethyl methyl carbonate as 13 esters solvents? 14 A In their previous description up here, 15 they referred to them as esters. I mean, 16 carbonates, they were calling them esters. 17 Q And then if we move now to Page 15 and 18 look at Embodiment 7, which is in the middle of 19 the page. 20 A Yes. 21 Q What solvents does Koshiishi disclose in 22 Embodiment 7?

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

229 1 A Embodiment 7, it utilizes ethylene 2 carbonate and ethyl methyl carbonate. 3 Q In Embodiment 7, Koshiishi discloses the 4 use of ethylene carbonate and ethyl methyl 5 carbonate as ester solvents. Correct? 6 A Well, I mean, once again, they're 7 car- -- they're -- they're carbonate solvents, but 8 they earlier defined them as in the category 9 esters. 10 Q Okay. And then, now turning back to the 11 Abe reference which should be the next one in your 12 book, Exhibit 1008. 13 A Yep. 14 Q And if you would turn with me please, 15 sir, to Paragraphs 41 and 42? 16 A Paragraphs 41 and 42? Is that what you 17 said? 18 Q Yes, sir. 41 and 42. 19 A Okay. 41, 42. Yes. 20 Q And it's under a heading called "Example 21 A-1" and then Paragraph 41 is "Preparation of 22 Nonaqueous Electrolyte Solution."	231 1 Do you see that? 2 A Yes. 3 Q And what is an ad- -- 4 A Adiponitrile. 5 Q Yes, sir. 6 A I believe adiponitrile is a dinitrile. 7 Although I'd have to confirm that for certain. But 8 I believe it is. It's not one I'm as familiar 9 with, but let me look at it in the list. 10 They're calling it a dinitrile, yes. 11 Sic- -- succil- -- succinonitrile, 12 (indiscernible), and adiponitrile, yeah. 13 Q Adiponitrile. Okay. All right. 14 And then now turning -- if I could turn 15 your attention to Paragraph 68, please, of Abe, 16 Exhibit 1008. 17 A Yes. 68. 18 Q And that's under the heading of 19 "Comparison Example A-1." 20 Do you see that? 21 A Yes. 22 Q Can you please review Paragraph 68
230 1 Do you see that? 2 A Yes. 3 Q And in Paragraphs 41 and 42, what 4 solvents does Abe disclose? 5 A Abe discloses ethylene carbonate and 6 ethyl methyl carbonate. AC -- no, they got MEC. 7 It's usually listed as EMC. That's okay. 8 Q And so Example A-1 of Abe discloses the 9 use of ethylene carbonate and meth- -- methyl 10 ethyl carbonate as ester solvents. Correct? 11 A It use -- utilize ethylene carbonate and 12 methyl ethyl carbonate. 13 Q And I -- I think you already noticed 14 this, but is methyl ethyl carbonate the same thing 15 as ethyl methyl carbonate? 16 A Yes. It's usually ethyl methyl. We 17 usually do alphabetically. 18 Q Got it. Got it. Thank you. 19 And turning pack to Paragraph 42, Abe 20 states that "to the electrolytic solution was 21 added adiponitrile in the amount of .0 22 weight percent."	232 1 through 71. 2 A Okay. 3 Okay. 4 Q And would you agree with me that 5 referring to Paragraph 68 of Abe -- Comparative 6 Example A-1 of Abe uses the same components as 7 Example A-1 of Abe, except there was no nitrile 8 compound? 9 A Well, what -- what Paragraph 68 states 10 is the procedures of Example A-1 were repeated 11 except that no adiponitrile was incorporated in 12 the electrolytic solution. So that would suggest 13 that they -- that the electrolyte formulation was 14 the same except for that the adiponitrile was not 15 included. 16 Q Okay. And then in Paragraph 70, Abe 17 says that the preparation evaluation of the 18 battery are summarized in Table 1. 19 Do you see that? 20 A Yes. 21 Q And then, if you'd turn to the next page 22 with me, so I guess that's after Paragraph 83 and

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 58 of 120

September 13, 2022

1 before Paragraph 84. 2 Do you see Table 1 there? 3 A Yes. 4 Q And looking at Table 1, what was the 5 initial discharge capacity of Example A-1 compared 6 to the initial discharge capacity of example -- of 7 Comparative Example A-1? 8 A Looking at table 1, Example A-1 has a 9 discharge -- well, initial discharge capacity was 10 1.00 -- I don't know what that value is, but we'll 11 call it 1. And the one for A-1 is also -- the 12 initial discharge capacity is also 1. 13 Q And so it's fair to say the initial 14 discharge capacity of Example A-1 and of 15 Comparison Example A-1 are the same? 16 A Well, they appear to be similar. They 17 do have different significant figures. One is 18 1.00. The other is just 1. 19 Q And is it your opinion, as you sit here 20 today, that 1.00 is different than 1? 21 A I'm not saying that. I'm saying that 22 they have a different level of significant figures	1 according to their -- according to their 2 measurements, they're calling those two values 3 different. 4 Q And then, referring to the discharge 5 capacity retention in Table 1, is it fair to say 6 that the discharge capacity after 100 cycles of 7 charging/discharging of Example A-1 was 8 86.2 percent? 9 A I mean, looking at Table 1, they're 10 claiming that Example A-1 has an 86.2 percent 11 discharge capacity, yes. 12 Q And looking at Table 1, is it fair to 13 say that the discharge capacity of 100 -- after 14 100 cycles of charging/discharging of example -- 15 of Comparison Example A-1 is 82.6 percent? 16 A That's what's claimed in the table, yes. 17 Q And is it fair to say the discharge 18 capacity after 100 cycles of charging/discharging 19 of Example A-1 was better than the discharge 20 capacity after 100 cycles in Comparison Example 21 A-1? 22 A From looking at the values in Table 2,
1 in the value. 2 Q In your experience as an expert in this 3 field, would a discharge capacity of 1.00 and a 4 discharge capacity of 1 be different? 5 A Well, by definition from rounding, the 6 definition of 1 could be different than 1.001, but 7 I would say they're probably similar. I mean -- 8 Q And I'm sorry. Based on your 9 experience, is it your opinion that initial 10 discharge capacity of 1.00 could be different than 11 an initial discharge capacity of 1? 12 A Well, once again, the values that are 13 written in the table are 1.00 and the other one is 14 1. So in the case of the A-1, 1.1 would round to 15 1, but on the case of -- for the comparison, on 16 the case of the Example A-1, 1.1 would be 1.1, as 17 opposed to 1.00. 18 Q And so if we then go to Example A-2, and 19 that says .99, does that suggest to you any 20 rounding that -- 21 A Well, once again, that means it's 0.99 22 as opposed to 1.00 from above, so those --	1 86.2 percent discharge capacity is better than 2 80 -- 86.2 is better than 82.6. 3 Same numbers, different order. 4 Q Okay. Let's look back at Paragraph 61 5 of Abe. 6 I'm sorry. Let's actually look at 58 7 through 61. I'm sorry. 8 A Okay. 58? 9 Q And that's -- yeah, 58 through 61, and 10 that's talking about exam- -- Example A-4. 11 Do you see that? 12 A Yes. 13 Q Okay. Will you please -- 14 A Do you want -- 15 Q -- read Example -- 16 A Yep. 17 Q -- A-4. 18 A Okay. 19 Q And in Example A-4, as described in Abe, 20 Exhibit 1008, uses .2 weight percent of an 21 adiponitrile. Correct? 22 A It says that adiponitrile was

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 59 of 120

September 13, 2022

237 1 incorporated and there was 0.2 weight percent, 2 yes. 3 Q And we talked earlier and adiponitrile 4 is a dinitrile. Correct? 5 A According to the -- yes, I -- I believe, 6 once again, the nomen-- yes, I believe it is a 7 dinitrile. 8 Q And then, will you turn with me now to 9 Paragraphs 81 through 83 -- 10 A Yes. 11 Q -- please, of Abe, Exhibit 1008. 12 And there, we're talking about 13 Comparison Example A-4. 14 Do you see that? 15 A Comparison Example A-4, yes. 16 Q And will you review Paragraphs 81 17 through 84 please. 18 A 81 through 84. Okay. Yes. 19 Okay. 20 Q In Comparison Example A-4 of Abe uses .2 21 weight percent of a propionitrile. Is that 22 correct?	239 1 capacity where the relative value is 1.02 for A-4. 2 Q Okay. And what was the initial 3 discharge capacity of Comparison Example A-4? 4 A 0.96. 5 Q And is it fair to say that the initial 6 charge capacity of Example A-4, using a dinitrile, 7 was better than the initial discharge capacity of 8 Comparison Example A-4? 9 A From looking at this data, it appears 10 that it's better with this system. 11 Q And looking at Table 1, what was the 12 discharge capacity retention of Example A-4? 13 A Discharge capacity retention was 14 89.2 percent. 15 Q And what was the discharge capacity 16 retention of Comparison Example A-4? 17 A Comparison Example A-4 has a discharge 18 capacity retention of 82.4 percent. 19 Q So is it fair to say that the discharge 20 capacity retention after 100 cycles of 21 charging/discharging of Example A-4 was better 22 than the discharge capacity after 100 cycles in
238 1 A Propionitrile. And it appears to use 2 0.2 weight percent of propionitrile. 3 Q And what is propionitrile, Dr. Lucht? 4 A Propionitrile is a mononitrile. 5 Acrylo-- 6 Q And so -- oh, I'm sorry. 7 A It's an acrylonitrile. 8 Q Oh. And so would you agree with me that 9 Comparison Example A-4 of Abe used the same 10 components as Example A-4, except Comparison 11 Example A-4 substituted a mononitrile for the 12 dinitrile of Example A-4? 13 A From looking at the examples, it appears 14 that Example A-4 has a mononitrile while the 15 Example A -- Wait a second. 16 Comparison Example A-4 has a 17 mononitrile. Example A-4 has a dinitrile. 18 Q Okay. Let's look back to Table 1, 19 please. 20 And what was the initial discharge 21 capacity of Example A-4 in Table 1? 22 A Example A-4, the initial discharge	240 1 Comparison Example A-4? 2 A From looking at that data with this 3 particular system, yes. 4 Q And is it fair to say that both the 5 initial discharge capacity and the discharge 6 capacity retention of Comparison Example A-4, 7 which used a mononitrile, actually decreased in 8 comparison with Comparison Example A2 without any 9 nitrile compounds? 10 I'm sorry. I might have said A-2. I 11 meant Comparison Example A-1. And I can start 12 over if that -- 13 A Yeah, 82.6 percent versus 82.4 percent 14 capacity -- discharge capacity retention are 15 pretty similar. I -- you know -- you know, yes, 16 in -- in those numbers, it's slightly better, but 17 that's one cell. I'd be curious to see more than 18 one cell. 19 Q Okay. And so would it be fair to say 20 that the -- the dinitrile compound acts on the 21 surface of the positive electrode and functions to 22 prevent the direct contact to the positive

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131

Page 60 of 120

September 13, 2022

241 1 electrode and the nonaqueous electrolyte? 2 A Can you restate your question? 3 Q Yes. 4 Would -- would you agree that a 5 dinitrile compound acts on the surface of the 6 positive electrode? 7 A From this data that you're showing me 8 here? 9 Q With respect to this -- this data and 10 the disclosure of Abe. 11 A I -- I -- say -- ask your question 12 again. So you're saying in this -- 13 Q So take -- just taking a step back, 14 we've been talking about a dinitrile in -- with 15 respect to the Abe reference. Is that fair? 16 A We've been talking about a dinitrile and 17 incorporation of a dinitrile additive -- 18 electrolyte additive in reference to the Abe 19 reference or in -- in the presence of the Abe 20 reference really. Yes. 21 Q And is it fair to say that a dinitrile 22 compound acts on the surface of the positive	243 1 (Whereupon, there was a recess in the 2 proceedings.) 3 THE VIDEOGRAPHER: We are back on the 4 video record. The time is 4:01 p.m. 5 BY MR. DOUGLAS: 6 Q Dr. Lucht, right before the break, we 7 were talking about the Koshiishi and Abe 8 references. 9 Do you -- do you remember that? 10 A Yes. 11 Q And we were talking about the Koshiishi 12 and Abe references with respect to the 1440 IPR 13 related to the '446 patent. 14 A Yes. 15 Q And is it your understanding that the 16 same Koshiishi and Abe references were also at 17 issue in the 01443 IPR relating to patent '019? 18 A Yes, I believe that is correct. 19 Q In fact, in the 1443 IPR, Koshiishi is 20 Exhibit 1007, and Abe is Exhibit 1008. Correct? 21 A Okay. I can look at it. 22 Q Yep.
242 1 electrode? 2 A From the table and data that I've looked 3 at, I think what it shows is that, with the 4 cathode that they utilized, which is lithium 5 cobalt oxide, you get better discharge capacity 6 retention. 7 Q And then turning to -- if you'll turn 8 with me to Paragraph 18 of Abe. 9 And Abe states, The incorporation of a 10 dinitrile compound into an electrolyte solution is 11 effective to reduce erosion of the metallic inner 12 surface of a battery case. 13 Do you see that? 14 A Yes. 15 Q Okay. All right. 16 MR. DOUGLAS: Would it be all right to 17 take a -- a quick break at this point? Would that 18 work? 19 THE WITNESS: That's fine. 20 MR. DOUGLAS: Okay. 21 THE VIDEOGRAPHER: We are going off the 22 video record. The time is 3:41 p.m.	244 1 A You want me to get that binder? 2 Q Do -- do you mind just looking at it 3 quickly, Dr. Lucht? 4 A Yeah, that's fine. 5 107 is -- (indiscernible). Yeah, 6 Koshiishi. 7 And then 108 is Abe. Yeah. 8 Q And those are the same Koshiishi and Abe 9 in both the 1440 and the 1443 proceedings? 10 Correct? 11 A Yes, they are, as far as I can tell. 12 Q And would your answers that you gave 13 with respect to Koshiishi and Abe in the 1440 IPR 14 change if the same questions were asked of you in 15 the 1443 IPR relating to Coby -- Koshiishi and Abe 16 that we went through before the break? 17 A I believe my answers would be the same. 18 Q Okay. Before the break, I was asking 19 you a couple questions about dinitriles, and so I 20 want to go back to those more from a general 21 level. 22 Do you have an understanding of whether

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 61 of 120

September 13, 2022

1 dinitriles suppress the direct contact of the 2 positive electrode and the nonaqueous electrolyte 3 -- electrolyte? 4 A Can you say that again? 5 Q Yes. 6 Does a dinitrile suppress the direct 7 contact of the positive electrode and the 8 nonaqueous electrolyte? 9 A I don't think it does. But I don't know 10 if anybody knows. 11 Q If you'd turn with me in the 1440 IPR, 12 Exhibit 1001. 13 A Exhibit 1001? 14 Q Yes, this is the '446 patent. 15 A Yep. 16 Q And if you look at -- if you turn to 17 Column 3 with me, please. 18 A Yep. 19 Q And if you would look at the paragraph 20 starting at Line 12 starting with "In addition." 21 Do you see that? 22 A Yep.	245 1 no data supporting that particular statement. 2 Q Okay. And later in that -- or just 3 after that sentence you just read starting at 4 Line 17, it says: 5 Thus, the reaction of the positive 6 electrode and the nonaqueous electrolyte is 7 suppressed whereby the generation of gas in the 8 battery by such reaction is prevented. 9 Do you see that? 10 A Yes. 11 Q And do you agree that the addition of a 12 dinitrile prevents the generation of gas in the 13 battery? 14 A I mean, I think in the case from the 15 data in -- in the -- in this pat- -- patent and 16 other things that, yes, it does do something along 17 these lines, yeah. 18 Q And do you agree that dinitriles prevent 19 generation of gas in a battery? 20 A Once again, I'd have to look through all 21 the gas generation data, but from what my 22 recollection is on the patent, they've got --
246 1 Q Would you review that paragraph please? 2 A Yep. 3 Yep. Just let me finish it. 4 Q Have you had a chance to read -- 5 A Yes. 6 Q -- through that (indiscernible). 7 A (Indiscernible.) 8 Q Okay. Great. 9 So would you agree with me that the '446 10 patent states that the addition of a dinitrile 11 suppresses the direct contact of the positive 12 electrode and the nonaqueous electrolyte? 13 A The -- the statement there on Lines -- 14 it states on Lines -- I guess it's 14 through 17 15 or so, "such a nitrile compound acts on the 16 surface of the positive electrode and functions to 17 prevent the direct contact of the positive 18 electrode and the -- and the nonaqueous 19 electrolyte." 20 Q And do you agree with that statement, 21 Dr. Lucht? 22 A I don't think -- I mean, I think there's	248 1 they've got data that certainly suggests that that 2 is accurate. 3 Q And I want to turn back to mononitriles. 4 We were discussing electrolytes and mononitriles 5 earlier. 6 So do electric -- electrolytes 7 containing mononitrile additives offer superior 8 benefits to electr- -- electrolytes having a 9 fluorine-containing organic solvent? 10 A Can you clarify the context of what 11 your -- what your question is? 12 Q I'm generally relying on your 13 experience. I believe that you had said that you 14 had experience with fluorine-containing organic 15 solvents. 16 Is that correct? 17 A Yes. But, I mean, it's -- I would 18 have -- to be able to answer a question like that, 19 I would have to know what your cathode is, what 20 your anode is, and what the whole system is. I 21 mean, these -- these battery electrolyte systems 22 are very complex. Whenever you change one thing,

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

249 1 it can change a lot of other things. 2 Q And so, as you sit here today, can you 3 answer whether electrolytes with 4 fluorine-containing organic solvents offer 5 superior benefits to an electrolyte with a 6 mononitrile solvent? 7 A As a general statement for all 8 batteries? 9 Q Based on your experience with batteries. 10 A As a general statement for all lithium 11 batteries? 12 Q Yes. 13 A I -- I don't think I could say that 14 about much of any electrolyte additive. 15 Q And so in the same way, you couldn't say 16 that electrolytes with mononitrile solvents would 17 offer superior benefits to electrolytes with a 18 fluorine-containing organic solvent? 19 A I'm not sure what you're getting at. 20 Are you getting at something specifically in my 21 disclosure? A statement that was made in my 22 disclosure? If that's the case, we can go to that	251 1 Paragraph 66, do you discuss whether the Abe 2 reference discusses the effect of the nonaqueous 3 elect- -- electrolyte on the battery's capacity? 4 A I mean, once again, this just re- -- 5 this particular paragraph discusses Koshiishi 6 and -- but it doesn't really address the -- the 7 electrolyte. 8 Q And in looking at Paragraph 61 through 9 63 on the previous page, do Paragraphs 61 through 10 63 address whether Abe discusses the effect of the 11 nonaqueous electrolyte on the battery's capacity? 12 A Do you want me -- do you want me to read 13 that again? 14 Q Yes, sir. 15 A So in those three paragraphs, 61, 62, 16 and 63, they focus their discussions on the 17 cathode materials in the two different paths. 18 Q And then, turning now to Paragraphs 64 19 through 68, do any of those paragraphs discuss 20 whether Abe discusses the effect of the nonaqueous 21 electrolyte on the battery's capacity? 22 A Through 68?
250 1 page. 2 Q No, I was just asking you generally. 3 A Yeah. Electrolytes for lithium-ion 4 batteries are extremely complicated. Making a 5 general blanket statement about anything that A is 6 always going to be better than B is not something 7 that's a very easy statement to say. 8 Q Okay. Fair enough. 9 So I would like to turn now to your 10 first declaration in the 1440 IPR. 11 A 1440 IPR. Okay. I'm there. 12 Q Excellent. 13 And if you would please turn to 14 Paragraph 66. 15 A Paragraph 66. I'm there. 16 Q And -- and you see in Paragraph 66, the 17 first line says, Koshiishi does not discuss the 18 effect of the nonaqueous electrolyte on the 19 battery's capacity. 20 Do you see that? 21 A Yes. 22 Q And in that same paragraph,	252 1 Q Yes, sir. Through 68. 2 A Up to 68? 3 Q 6-8. 4 A 6-8. Yep. 5 So what was your question, again? 6 Sorry. Just after reading it all. 7 Q Yeah, no -- no problem. 8 Dr. Lucht, do Paragraphs 64 through 68 9 discuss whether Abe discusses the effect of the 10 nonaqueous electrolyte on the battery's capacity? 11 A They are -- they don't discuss 12 specifically Abe alone and the effect of the 13 electrolyte on the nonaqueous electrolyte on the 14 capacity. 15 Q If you'd turn to your second declaration 16 in that same IPR, 1440, related -- 17 A Yep. 18 Q -- to the '446 IPR -- '446 patent. 19 And if you look at Paragraph 15 of that 20 second declaration. 21 A Okay. 15. Yes. 22 Q It starts with, "Turning to Ground 2"

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 63 of 120

September 13, 2022

1 and then "Abe" in -- in italics. 2 A Yes. 3 Q Do you see that? 4 Refer -- will you review Paragraphs 15 5 through 17 of your second declaration. 6 A Yes. 7 Yes. 8 Q And do Paragraphs 15 through 17 of your 9 second declaration discuss whether Abe discusses 10 the effect of the nonaqueous electrolyte on the 11 battery's capacity? 12 A Well, it states that Abe discloses that 13 the nitrile compound in its electrolyte gives the 14 favorable effect to the lithium secondary battery. 15 Enhancement of discharge capacity retention 16 without lowering the initial discharge capacity 17 after longterm discharge cycles. That is stated. 18 Q Okay. And any other discussion of 19 what -- whether Abe discusses the effect of the 20 nonaqueous electrolyte on the battery's capacity? 21 A No. That looks like it's -- that 22 appears to be the only statement really related to	1 Q Okay. So turning you back, Dr. Lucht, 2 to Paragraph 57 through 60 of the 1443 first 3 declaration, I would like to know whether you 4 discussed whether Abe discusses the effect of the 5 nonaqueous electrolyte on the -- the battery's 6 capacity. 7 A 57 through what? 8 Q Through 60, sir. 9 A 57 through 60. 10 Q Yes. 11 A Got it. 12 The focus of Paragraphs 57 through 60 is 13 on the differences of the cathode material between 14 the Koshiishi patent and the Abe patent and does 15 not appear to address electrolyte stability issues 16 brought up in Abe. 17 Q And now turning to Paragraph 61 through 18 65 of your first declaration in IPR 2021-01443, do 19 Paragraphs 61 through 65 discuss whether Abe 20 discusses the effect of the nonaqueous electrolyte 21 on the battery's capacity? 22 A So once again, the question was whether
1 the effect -- Abe's comments on the effect of the 2 electrolyte. 3 Q Okay. 4 And now I'd like to turn to the 1443 IPR 5 and your two declarations. 6 A 1443. Yep. Sorry. 7 Q And starting with the first declaration, 8 if you would turn with me to Paragraph 64 in the 9 1443. 10 A 64. Yes. 64. 11 Q And looking at Paragraph 64, it's -- I'm 12 sorry, 63. 13 A 63. 14 Q Yeah, sorry about that. 15 "Koshiishi does not discuss the effect 16 of the nonaqueous electrolyte on the battery's 17 capacity." 18 A Yes. 19 Q Do you see that? 20 And that's the same general topic we 21 were discussing in the 1440. Correct? 22 A Yes, I believe so.	1 these paragraphs do what? Just trying -- you 2 know -- 3 Q Well -- 4 A -- it's getting late in the day here. 5 Sorry. I don't want to make a misstatement here. 6 Q No, fair -- fair enough, Dr. Lucht. 7 Do Paragraphs 61 through 65 of your dec- 8 -- first declaration in IPR 2021-01443 discuss 9 whether Abe discusses the effect of the nonaqueous 10 electrolyte on the battery's capacity? 11 A Once again, these -- those -- those -- 12 61 through 65 do not really discuss Abe's com -- 13 you know, what is it? Electrolyte -- the 14 nonaqueous electrolyte stability -- stability of 15 the nonaqueous electrolyte. 16 Q All right. And then -- 17 A They once again focus on the differences 18 between the Koshiishi and the Abe. 19 Q And then if I could turn you to your 20 second declaration in the 1443 matter. 21 A Yes. 22 Q And Paragraph 15 again, starting with

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

1 "Turning to Ground 2." 2 A Yes. 3 Q And will you review Paragraphs 15 4 through 17 of that second declaration. 5 A Okay. 6 Q And in Paragraphs 15 through 17 of your 7 second declaration in the 1443 IPR, do you discuss 8 whether Abe discusses the effect of the nonaqueous 9 electrolyte on the battery's capacity? 10 A Paragraphs 15 through 17 do not address 11 Abe's comments or -- yes -- comments on the 12 stability of the nonaqueous electrolyte. 13 Q And do Paragraphs 15 through 17 discuss 14 whether Abe provides a POSITA with a reason to 15 pursue a compound having at least two nitrile 16 groups in the molecule in its nonaqueous 17 electrolyte? 18 A Can you say that again? 19 Q Do Paragraphs 15 through 17 of your 20 second declaration discuss whether Abe provides a 21 POSITA with a reason to pursue a compound having 22 at least two nitrile groups in the molecule in its	1 nitrile groups in the molecule in its nonaqueous 2 electrolyte. 3 Do you see that? 4 A Yes. 5 Q All right. In Paragraphs 57 through 65 6 of this declaration, do you discuss whether Abe 7 provides a POSITA with a reason to pursue a 8 compound having at least two nitrile groups in the 9 molecule in its nonaqueous electrolyte? 10 A So you want me to read through 57 11 through 65 again? 12 Q Yes, please. 13 A Okay. So what was your question, again? 14 I'm sorry (indiscernible). 15 Q In paragraph -- in Paragraphs 57 through 16 65 in your first declaration in the 1443 IPR, do 17 you discuss whether Abe provides a POSITA with a 18 reason to pursue a compound having at least two 19 nitrile groups in the molecule in its nonaqueous 20 electrolyte? 21 A The paragraphs don't really address Abe 22 and the stability -- the effect of the stability
1 nonaqueous electrolyte? 2 A I mean, within these two paragraphs is a 3 statement that Abe discloses that a nitrile 4 compound and its electrolyte gives a favorable 5 effect to a lithium sec- -- secondary battery 6 enhancing the discharge capacity retention without 7 lowering the initial discharge capacity for 8 longterm discharge cycles is what is stated. 9 Q Okay. And anything else about Abe and 10 the reason to pursue a compound having at least 11 two nitrile groups in 15 through 17? 12 A I mean, that's really the only statement 13 related to Abe and the stability of the 14 electrolyte. 15 Q And then turning back to your first 16 declaration, Paragraph 64 -- first declaration in 17 IPR 2021-01443. 18 Do you see that? 19 A Yes. 20 Q Paragraph 64 says: 21 Koshiishi does not provide a POSITA with 22 a reason to pursue a compound having at least two	1 on the electrolyte. They are focused on the 2 differences in the cathode materials. 3 Q And will you turn with me to your 4 declarations in the '035 IPR? That's IPR 1441. 5 A Yes. 6 Q And if you'll turn with me to your first 7 declaration. 8 A I'm there. 9 Q And if you look at Paragraphs 34 through 10 35. 11 A Oh, this is the one that's on the 12 screen. Sorry. 13 Q Oh, I'm sorry. I'm sorry. 14 A No, that's okay. That's okay. I -- 15 it's not -- there wasn't a Paragraph 34. So, yes. 16 Okay. 17 34. That's what you said? Starting at 18 34? 19 Q Yes. If you would just review 34 and 20 35, that would be great. 21 A Okay. 22 Q And if you look in Paragraph 34 at the

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 65 of 120

September 13, 2022

261 1 top of Page 14, you say, But Choi does not discuss 2 the effect of the nonaqueous electrolyte on 3 thermal stability. 4 Do you see that? 5 A Yes. 6 Q And so, in Paragraph 34, do you address 7 whether the Noh reference, N-o-h, provides the 8 POSITA with the effects of a nonaqueous 9 electrolyte on thermal stability? 10 A So in -- in Paragraphs 34 and 35, which 11 were the two you were talking about. Right? 12 Q Yes. 13 A It does not discuss Noh's effect -- the 14 Noh patent and electrolyte stability. 15 Q And then looking to the prior 16 paragraphs, 32 and 33, do Paragraphs 32 and 33 17 discuss whether Noh, N-o-h, discusses the effect 18 of the nonaqueous electrolyte on thermal 19 stability? 20 A So, you know, once again, these two 21 paragraphs discuss the differences between Choi 22 and Noh and focus on the differences of the	263 1 and 11, those two paragraphs do mention, you know, 2 mononitrile solvents and the benefits, but it 3 doesn't mention electrolytes and thermal stability 4 relating to Noh's patent. 5 Q Okay. Now, if we turn back to your 6 first declaration in the 1441 IPR. 7 A Yep. 8 Q In Paragraphs 50 and 51. 9 A Okay. 50 and 51. Do you want me to 10 read these? 11 Q Yes, please. 12 A So this is now talking about Negishi and 13 Kita? So -- 14 Q Yes. 15 A Okay. 16 Q And in Paragraph 50 -- well, like, six 17 lines from the bottom it says, But Negishi does 18 not discuss the effect of the nonaqueous 19 electrolyte on thermal stability. 20 Do you see that? 21 A Yes. 22 Q Okay. So then starting back at the
262 1 cathode materials, and don't discuss Noh and the 2 electrolyte stability described within Noh. 3 Q And turning to your second 4 declaration -- 5 A That one I (indiscernible). 6 Q -- paragraphs -- what's that? 7 A That one -- 8 Q Oh, sorry. 9 A -- I have on -- 10 Q Yes. 11 A Yes. 12 Q And looking at Paragraphs 10 and 11, do 13 you discuss whether Noh, N-o-h, discusses the 14 effect of the nonaqueous electrolyte on thermal 15 stability? 16 A Through 12? Which one did you want to 17 read? 10, 11 -- 10 through what? 18 Q 10 and 11 -- 19 A 10 and 11. 20 Q -- please. 21 A Okay. 22 Yeah, so 10 -- 10 and -- looking at 10	264 1 beginning of this section, Paragraph 47 -- will 2 you read Paragraphs 47 through 49? 3 A Yes, I will. 4 Okay. 5 Q And so in paragraphs -- do Paragraphs 47 6 through 49 in the 1441 first declaration, do they 7 discuss whether Kita discusses the effect of the 8 nonaqueous elec- -- electrolyte on thermal 9 stability? 10 A So Paragraphs 47 through 49 do not 11 discuss the effects of Kita on -- or the -- the 12 relationship of Kita to electrolyte thermal 13 stability. 14 Q And then looking at Paragraphs 50 15 through 52, do Paragraphs 50 through 52 discuss 16 whether Kita discusses the effect of the 17 nonaqueous electrolyte on thermal stability? 18 A Well, Paragraphs 50 through 52 mention 19 that Kita teaches that the organic fluorine-based 20 solvent in its electrolyte forms a protective film 21 on the positive electrode active material surface 22 during initial battery charging, but it doesn't

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

September 13, 2022

265 1 comment about Kita and thermal stability of the 2 electrolyte. 3 Q And then, turning to your second 4 declaration, it appears that you discuss Negishi 5 and Kita -- and Kita at Paragraphs 12 through 15. 6 Do you see that? 7 A 12 through 15. Okay. 8 So this section, these paragraphs, which 9 is 12 through 15, they mention -- they do not 10 mention thermal stability of the electrolyte as 11 in -- in Kita. They do mention -- well, they 12 mention that a -- but a POSITA would have 13 understood that such a mononitrile solvent offers 14 superior benefits to an electrolyte than Kita's 15 with a fluorine-containing solvent, obvi -- 16 obvi -- obviating any mot- -- motivation to 17 substitute Kita's electrolyte for Negishi's. 18 That's the main mention of electrolyte 19 in those. But does not mention thermal stability 20 (indiscernible). 21 MR. DOUGLAS: Okay. I just want to 22 check my notes quickly. Could we go off the	267 1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC 2 3 I, CASSIDY WESTERN, RPR, Registered 4 Professional Reporter and Notary Public within and 5 for the Commonwealth of Pennsylvania, do hereby 6 certify: 7 That BRETT LUCHT, Ph.D., the witness 8 whose deposition is hereinbefore set forth, was 9 duly sworn by me before the commencement of such 10 deposition and that such deposition was taken 11 before me and is a true record of the testimony 12 given by such witness. 13 I further certify that the adverse 14 party, MAXELL, LTD., was represented by counsel at 15 the deposition. 16 I further certify that the deposition of 17 BRETT LUCHT, Ph.D. was held remotely via 18 videoconference on Tuesday, September 13th, 2022, 19 commencing at 8:59 a.m. to 4:44 p.m. 20 I further certify that I am not related 21 to any of the parties to this action by blood or 22 marriage, I am not employed by or an attorney to
266 1 record and take a quick break. 2 THE VIDEOGRAPHER: We are going off the 3 video record. The time is 4:39 p.m. 4 (Whereupon, there was a recess in the 5 proceedings.) 6 THE VIDEOGRAPHER: We are back on the 7 video record. The time is 4:44 p.m. 8 MR. DOUGLAS: Thanks, Dr. Lucht. I 9 don't have any further questions on these three 10 IPRs that we've been discussing today. 11 I'll pass the witness to you, Paige. 12 MS. WRIGHT: Pass the witness. 13 MR. DOUGLAS: We're done. 14 THE VIDEOGRAPHER: Great. 15 This concludes the videotaped deposition 16 of Brett Lucht, Ph.D. We are going off the video 17 record at 4:44 p.m. 18 (Off the record at 4:44 p.m.) 19 20 21 22	268 1 any of the parties to this action, and that I am 2 in no way interested, financially or otherwise, in 3 the outcome of this matter. 4 5 IN WITNESS WHEREOF, I have hereunto set my hand 6 this 16th day of September, 2022. 7 My commission expires August 4, 2025. 8 9 10  11 _____ 12 Cassidy Western, RPR 13 14 15 16 17 18 19 20 21 22

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 67 of 120

A			
a-1	243:16, 243:20, 244:7, 244:8, 244:13, 244:15, 251:1, 251:10, 251:20, 252:9, 252:12, 253:1, 253:9, 253:12, 253:19, 255:4, 255:14, 255:16, 255:19, 256:9, 256:18, 257:8, 257:14, 257:20, 258:3, 258:9, 258:13, 259:6, 259:17, 259:21	accusing 11:18 acetonitrile 127:6, 127:22, 128:3 acetonitriles 128:2 acid 45:19, 85:20 across 7:17, 84:12 acrylo 238:5 acrylonitrile 238:7 act 193:22 action 267:21, 268:1 active 58:7, 115:13, 137:8, 137:19, 138:4, 139:5, 139:15, 144:11, 145:13, 145:19, 145:22, 146:6, 146:19, 150:4, 151:15, 151:18, 152:9, 154:7, 154:8, 155:17, 193:11, 193:21, 194:1, 201:1, 201:2, 222:5, 222:9, 222:19, 222:21, 223:13, 223:20, 224:1, 224:5, 224:7, 225:18, 225:20, 264:21 acts 86:19, 87:18, 240:20, 241:5, 241:22, 246:15 actually 31:1, 35:8, 43:5, 236:6, 240:7 ad 231:3	add 62:14, 100:11 added 115:11, 230:21 addilit 122:11 adding 96:19 addition 57:18, 245:20, 246:10, 247:11 additions 30:9 additive 42:7, 44:22, 62:13, 63:7, 63:13, 63:17, 63:20, 64:2, 65:7, 121:15, 122:12, 123:6, 124:12, 124:16, 125:3, 125:10, 131:2, 241:17, 241:18, 249:14 additives 38:20, 39:1, 39:16, 41:6, 41:14, 41:18, 44:4, 44:8, 44:15, 44:18, 45:3, 45:20, 47:22, 48:2, 48:18, 48:20, 49:7, 50:3, 60:19, 60:21, 61:3, 61:10, 61:16, 62:14, 63:4, 64:6, 119:10, 122:2, 122:4, 122:8, 122:16, 123:3, 126:1, 126:19, 127:2, 127:4, 129:4, 130:12, 248:7 address 181:19, 182:5, 193:3, 194:8,
a-2	234:18, 240:10	abe's 254:1, 256:12, 257:11 ability 13:15, 15:17, 72:18, 113:2 able 15:20, 50:1, 114:21, 248:18 above 58:14, 164:10, 164:13, 203:16, 205:19, 216:22, 234:22 abraham 43:21 absolutely 92:17, 210:5 ac 29:22, 230:6 access 73:12 according 148:8, 206:11, 206:15, 235:1, 237:5 accordingly 170:18 accurate 29:10, 29:13, 29:16, 30:1, 158:15, 248:2 accurately 14:17	
a-4	236:10, 236:17, 236:19, 237:13, 237:15, 237:20, 238:9, 238:10, 238:11, 238:12, 238:14, 238:16, 238:17, 238:21, 238:22, 239:1, 239:3, 239:6, 239:8, 239:12, 239:16, 239:17, 239:21, 240:1, 240:6		
a1	4:17, 4:24		
a2	240:8		
abe	224:12, 224:13, 224:18, 225:9, 225:15, 229:11, 230:4, 230:5, 230:8, 230:19, 231:15, 232:5, 232:6, 232:7, 232:16, 236:5, 236:19, 237:11, 237:20, 238:9, 241:10, 241:15, 241:18, 241:19, 242:8, 242:9, 243:7, 243:12,		

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 68 of 120

194:11, 194:20, 195:22, 196:4, 196:7, 200:10, 200:18, 201:14, 251:6, 251:10, 255:15, 257:10, 259:21, 261:6 addressed 182:19, 184:9, 184:22, 185:17, 186:6, 186:8, 186:9 addresses 224:19 adiponitrile 230:21, 231:4, 231:6, 231:12, 231:13, 232:11, 232:14, 236:21, 236:22, 237:3 adjust 156:10, 156:16, 156:21, 157:7, 158:5 adjusted 156:15 administration 4:13, 4:19, 220:18 advan 157:5 advance 23:9 advantageous 157:5 advantages 171:14 adverse 13:5, 267:13 advice 57:16 affect 15:17, 117:10, 117:14, 117:17, 161:13 affirmed 6:10 after 31:10, 33:17,	33:19, 44:6, 50:4, 63:19, 64:1, 64:20, 65:2, 65:21, 76:11, 98:3, 98:4, 101:1, 136:9, 176:4, 232:22, 235:6, 235:13, 235:18, 235:20, 239:20, 239:22, 247:3, 252:6, 253:17 against 10:17 age 6:10 ago 23:14, 41:21, 53:10, 53:20, 92:10, 125:8, 131:9, 174:19 agree 14:8, 15:5, 70:16, 71:9, 82:4, 82:11, 137:5, 138:3, 138:7, 139:9, 139:19, 140:2, 141:11, 146:12, 150:13, 154:2, 166:12, 170:21, 199:4, 209:6, 224:3, 232:4, 238:8, 241:4, 246:9, 246:20, 247:11, 247:18 agreed 7:6, 7:8, 7:16, 7:21 ahead 72:12, 72:13 albemarle 53:17, 55:4, 56:9 aliphatic 127:10, 127:14, 127:16, 127:18, 128:1, 128:3,	179:2, 179:5 alkane 179:6, 179:9, 179:10 all 7:6, 7:7, 7:17, 8:3, 9:22, 10:6, 12:7, 13:7, 19:5, 19:14, 19:16, 20:9, 21:2, 22:7, 22:16, 26:11, 35:12, 40:11, 43:7, 50:8, 54:10, 54:12, 55:5, 55:6, 58:5, 63:1, 63:8, 66:9, 66:11, 66:15, 68:22, 77:1, 79:19, 84:12, 101:12, 107:14, 109:7, 110:10, 112:18, 117:8, 119:5, 119:8, 121:5, 121:8, 133:13, 133:18, 135:6, 138:9, 140:4, 143:8, 148:19, 148:21, 154:22, 155:17, 155:22, 156:13, 162:8, 162:19, 167:10, 167:14, 173:19, 173:21, 177:16, 178:9, 184:2, 199:7, 209:16, 209:18, 216:6, 216:7, 217:3, 220:11, 221:15, 225:22, 231:13, 242:15, 242:16, 247:20, 249:7, 249:10, 252:6, 256:16, 259:5 allege 185:13	allow 56:21, 158:10, 158:13 allowed 18:12 allowing 19:11, 177:8 allows 86:10, 92:5, 118:20, 131:16 almost 17:4 alone 192:22, 196:1, 196:5, 196:7, 199:21, 201:4, 252:12 along 21:8, 107:20, 119:8, 247:16 alpha 150:21, 151:6 alphabetically 230:17 already 17:20, 57:19, 83:7, 162:5, 162:20, 230:13 also 3:21, 5:22, 7:20, 8:2, 8:18, 13:10, 18:14, 23:19, 25:22, 32:7, 37:17, 38:20, 39:5, 42:9, 47:14, 48:22, 49:9, 49:11, 50:9, 55:1, 59:6, 59:9, 60:16, 68:22, 72:16, 76:2, 86:11, 86:20, 88:2, 98:10, 105:7, 112:7, 113:1, 124:21, 125:8, 129:10, 139:21, 146:3, 147:12,
---	--	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 69 of 120

147:21, 155:19, 164:19, 168:2, 176:16, 205:13, 233:11, 233:12, 243:16 alston 3:6, 5:21, 5:22, 7:1 alternating 128:14 alternatively 133:8 alters 219:21 although 33:12, 38:6, 50:5, 53:16, 108:14, 231:7 aluminum 87:15, 91:2, 99:5, 99:16, 99:21, 100:21, 102:3, 104:11, 104:15, 104:19, 104:22, 106:13, 115:5, 115:9, 115:12, 115:13, 161:9, 223:1 always 48:13, 57:1, 58:16, 118:10, 121:11, 250:6 amount 46:17, 114:13, 161:5, 175:7, 204:2, 204:14, 206:10, 209:3, 230:21 amperex 1:5, 3:2, 5:7, 5:20, 6:15, 7:3, 16:4 analyze 131:7 anode 35:15, 47:12, 49:5, 86:7, 87:17, 87:18,	87:22, 88:22, 89:2, 118:22, 120:16, 121:12, 131:19, 155:4, 155:18, 158:11, 158:14, 159:18, 160:5, 160:11, 248:20 anodes 108:15, 123:12, 124:21, 157:22 another 21:7, 30:6, 50:19, 56:8, 107:2, 122:21, 123:1, 175:15, 187:7, 219:14 answer 13:14, 14:4, 14:11, 15:1, 101:16, 112:17, 121:16, 172:1, 190:21, 248:18, 249:3 answer's 191:9 answers 14:17, 15:20, 148:9, 148:16, 167:6, 208:5, 209:13, 244:12, 244:17 any 9:7, 9:14, 10:4, 10:7, 13:2, 14:20, 15:16, 15:19, 21:15, 22:1, 24:8, 24:12, 24:17, 24:21, 24:22, 26:21, 30:2, 38:14, 52:6, 52:7, 58:12, 61:22, 71:2, 77:14, 78:6, 78:22, 79:15, 81:5, 81:8, 81:20,	83:4, 83:22, 90:21, 95:4, 95:6, 98:19, 104:3, 105:13, 109:17, 117:2, 123:5, 124:11, 125:17, 126:12, 126:18, 129:4, 129:22, 168:14, 171:19, 172:7, 183:9, 184:22, 185:18, 186:6, 186:9, 186:21, 196:5, 208:5, 209:13, 234:19, 240:8, 249:14, 251:19, 253:18, 265:16, 266:9, 267:21, 268:1 anybody 15:12, 50:18, 245:10 anyone 8:19, 19:22, 24:13, 24:18 anything 30:10, 158:1, 167:5, 183:5, 188:3, 189:10, 250:5, 258:9 anytime 157:4, 157:19 anyway 132:4 apart 43:7, 131:6 apologies 11:11, 20:12, 111:3, 120:10 apologize 33:8, 66:12, 80:19, 185:15, 203:14 app 4:13, 134:5 appeal 1:2 appear 81:3, 233:16,	255:15 appears 29:3, 58:21, 67:16, 179:16, 208:4, 209:9, 219:20, 223:22, 238:1, 238:13, 239:9, 253:22, 265:4 applicable 60:22 application 4:16, 4:20, 4:23, 134:6, 221:1, 226:6 applications 60:8, 60:11, 60:22, 61:12, 94:1, 94:5, 94:10, 94:15, 94:16 applies 84:12 applying 205:11, 206:1 appointment 56:14 appreciate 14:13, 82:21 appreciation 112:15 aqueous 119:18, 119:20, 119:22 area 46:19 argues 195:5 aromatic 128:6, 128:10, 128:12, 128:16, 128:18, 128:19, 128:22 around 9:6, 35:11, 35:22, 36:4, 40:7, 47:15, 48:20, 51:2,
--	--	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 70 of 120

56:5, 65:13, 66:13, 110:12, 173:8 art 18:16, 21:17, 21:20, 108:9, 109:8, 112:19, 126:22, 164:2, 164:5, 168:11, 176:6, 177:11, 185:1, 185:19 articles 21:16 ascend 10:20, 11:19 ascend's 10:21 asked 75:11, 75:15, 76:5, 76:9, 148:10, 148:12, 186:21, 220:6, 244:14 asking 7:1, 13:13, 56:22, 120:22, 182:10, 182:19, 183:9, 186:16, 187:3, 188:19, 189:7, 204:22, 216:11, 244:18, 250:2 aspects 35:12, 117:8, 159:9 assembly 227:17, 227:19 assignee 224:20 assist 29:9 assistant 20:2, 34:12, 34:14, 34:17, 34:22, 35:4 associate 33:21, 36:19, 37:2, 37:6,	37:11, 37:16, 52:11 associated 18:7, 18:9, 52:13, 109:8 assume 13:21, 25:21, 29:12, 29:16, 147:5 astray 198:7 atl 16:3, 18:15 attached 4:6, 5:3, 128:18 attention 79:7, 79:20, 132:21, 226:14, 231:15 attorney 267:22 attorneys 24:13 august 268:7 automotive 61:12 available 117:1, 117:9 avenue 3:16 average 145:6, 145:8, 145:21, 152:4, 152:10, 153:3, 170:12, 173:3, 173:9, 173:14, 173:16, 173:17, 173:21, 174:12, 174:15, 223:1 aware 26:2, 26:5, 26:8, 30:11, 30:12, 95:15, 97:22, 98:20, 101:1, 101:22, 104:3, 109:17,	110:9, 111:17, 125:17, 126:12, 129:21, 167:2, 167:9, 172:3, 172:7 awesome 48:11 B b-2 60:15 b2 4:10 back 18:4, 25:9, 28:13, 37:21, 40:11, 44:11, 46:2, 50:8, 53:7, 56:11, 59:20, 60:2, 61:13, 76:18, 77:1, 83:18, 86:10, 86:22, 88:14, 88:16, 97:19, 99:22, 107:11, 107:14, 115:3, 118:21, 122:1, 131:8, 132:2, 135:9, 136:11, 137:13, 138:9, 140:7, 141:3, 142:1, 143:3, 143:8, 146:11, 147:1, 154:19, 154:22, 158:14, 162:19, 162:20, 167:14, 177:16, 178:1, 179:18, 181:11, 182:9, 182:22, 185:8, 190:2, 198:2, 199:7, 206:17, 207:5, 210:18, 216:4, 216:12, 220:12, 225:22, 229:10, 236:4, 238:18, 241:13, 243:3,	244:20, 248:3, 255:1, 258:15, 263:5, 263:22, 266:6 background 8:1 backwards 71:22 bad 144:7, 157:20, 165:13, 216:11 barely 217:16 based 104:12, 105:16, 106:5, 138:5, 234:8, 249:9 basf 54:22, 55:1, 55:19, 56:6, 64:4, 64:10, 98:10, 101:6, 102:15, 103:1, 123:18, 126:5, 131:5 basf's 101:6 basic 129:9 basically 25:20, 41:1, 42:21, 46:16, 92:5, 173:5, 173:22, 175:7, 176:3 batteries 31:18, 31:22, 32:3, 32:7, 32:9, 32:21, 34:18, 34:20, 35:1, 35:3, 35:8, 35:13, 35:18, 37:3, 37:5, 37:8, 37:10, 37:19, 38:9, 42:19, 43:6, 43:7, 46:22, 47:2,
--	--	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 71 of 120

47:4, 47:6, 57:21, 59:6, 60:7, 60:11, 60:14, 60:15, 60:17, 65:8, 84:22, 85:15, 85:19, 86:1, 86:2, 87:12, 89:7, 89:14, 89:20, 90:2, 90:18, 91:15, 91:21, 92:9, 92:20, 93:3, 93:11, 93:14, 93:17, 93:22, 95:5, 101:4, 103:3, 103:16, 105:14, 105:18, 106:7, 106:17, 108:12, 109:11, 111:21, 115:21, 118:9, 119:6, 121:6, 121:9, 122:3, 122:14, 124:2, 124:12, 124:15, 124:21, 126:20, 130:2, 156:6, 176:3, 177:1, 249:8, 249:9, 249:11, 250:4 battery's 250:19, 251:3, 251:11, 251:21, 252:10, 253:11, 253:20, 254:16, 255:5, 255:21, 256:10, 257:9 bearing 134:8 became 30:7, 98:4, 98:7 because 14:7, 14:14, 43:1, 53:14, 57:2, 57:6, 64:12, 65:14,	65:21, 95:10, 95:18, 103:9, 116:12, 121:11, 125:4, 129:13, 133:22, 157:22, 186:12, 189:12, 192:22, 195:22, 206:14, 206:22, 213:21 become 52:16, 98:2 been 16:15, 17:1, 17:10, 25:6, 25:7, 25:8, 26:12, 28:18, 31:8, 31:15, 36:1, 38:10, 43:8, 44:10, 54:5, 58:5, 59:12, 62:16, 66:3, 67:10, 80:11, 87:6, 87:11, 88:2, 101:22, 107:1, 126:19, 127:2, 127:7, 129:22, 130:4, 130:5, 146:20, 154:10, 214:6, 241:14, 241:16, 266:10 before 1:2, 2:8, 7:5, 9:1, 12:17, 13:7, 13:9, 13:11, 14:9, 14:11, 15:1, 21:5, 26:3, 26:6, 26:9, 53:13, 56:1, 58:7, 60:3, 66:4, 73:19, 98:15, 107:15, 163:16, 190:7, 210:21, 233:1, 243:6, 244:16, 244:18, 267:9, 267:11	begin 33:15 beginning 184:10, 264:1 begins 5:5 behalf 3:2, 3:12, 5:19, 7:2, 11:20 behind 129:9 being 6:10, 25:18, 26:3, 26:6, 26:9, 34:8, 51:18, 51:19, 52:2, 75:11, 76:5, 88:14, 92:3, 97:22, 102:13, 102:18, 102:21, 111:10, 115:11, 123:14, 125:22, 128:13, 155:4 believe 10:16, 21:16, 60:6, 61:14, 74:16, 84:14, 94:22, 101:15, 103:16, 105:7, 112:7, 112:11, 116:18, 118:13, 176:12, 179:18, 197:14, 205:2, 208:10, 231:6, 231:8, 237:5, 237:6, 243:18, 244:17, 248:13, 254:22 below 54:22, 143:15, 144:18, 218:4, 222:4, 223:19 beneficial 109:22 benefit 109:22, 113:20, 114:2, 123:5,	170:22, 171:9, 172:12 benefits 104:3, 104:5, 104:6, 109:1, 109:3, 109:17, 110:4, 110:9, 123:9, 123:10, 125:17, 171:19, 172:3, 172:7, 248:8, 249:5, 249:17, 263:2, 265:14 benzene 128:13 benzonitrile 127:6, 127:22, 128:21 berkeley 33:22, 34:3, 34:9 besides 24:13, 52:7 best 13:15, 14:12 better 158:16, 158:18, 160:7, 161:17, 162:3, 235:19, 236:1, 236:2, 239:7, 239:10, 239:21, 240:16, 242:5, 250:6 between 30:3, 62:19, 70:17, 71:3, 71:10, 71:12, 131:18, 141:8, 141:18, 158:10, 158:14, 160:14, 168:15, 215:8, 215:18, 216:21, 217:17, 255:13, 256:18, 261:21 big 209:20, 216:9, 216:10 binder 244:1
--	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 72 of 120

binders 22:4, 22:5, 133:17	70:22, 72:5, 101:10, 147:20, 155:18, 157:4, 157:19, 209:8, 240:4, 244:9	brought 255:16	calling 66:16, 228:16, 231:10, 235:2
bird 3:6, 5:21, 5:22, 7:1	bottom 143:13, 143:14, 143:22, 144:9, 211:8, 263:17	brown 124:19	came 24:4
birthday 76:13	bought 35:17	build 131:6	campion 39:17
bis (oxalato)bo 122:22	bounds 189:17	building 43:6, 58:8	can't 53:14, 53:15, 82:18, 109:20, 166:18, 187:13, 208:18
bis (oxalato)bora- te 48:9	bracket 227:20	built 35:17, 35:18	capacitors 55:20
bit 11:2, 42:14, 43:15, 48:8, 48:10, 51:8, 57:19, 66:13, 118:12, 122:7, 135:11, 149:9, 154:11, 176:12, 219:13, 221:21	brackets 134:4, 221:1, 227:17	bulk 38:22, 45:3	capacity 96:4, 114:4, 115:14, 161:11, 161:15, 161:18, 162:4, 170:20, 171:17, 172:12, 174:20, 175:4, 175:6, 175:11, 175:13, 175:14, 175:16, 175:19, 175:22, 176:1, 176:7, 176:10, 233:5, 233:6, 233:9, 233:12, 233:14, 234:3, 234:4, 234:10, 234:11, 235:5, 235:6, 235:11, 235:13, 235:18, 235:20, 236:1, 238:21, 239:1, 239:3, 239:6, 239:7, 239:12, 239:13, 239:15, 239:18, 239:20, 239:22, 240:5, 240:6, 240:14, 242:5, 250:19, 251:3, 251:11, 251:21, 252:10, 252:14, 253:11, 253:15, 253:16, 253:20, 254:17, 255:6, 255:21,
blanket 250:5	break 14:21, 15:1, 59:14, 60:3, 72:19, 107:3, 107:15, 154:12, 210:1, 210:22, 242:17, 243:6, 244:16, 244:18, 266:1	bunch 35:17, 52:3, 55:7, 59:7, 65:14, 219:4	
blood 267:21	breaks 14:19	business 54:14	
board 1:2	brett 1:19, 2:1, 4:2, 4:25, 4:26, 4:29, 5:6, 6:9, 8:11, 23:1, 23:2, 39:17, 68:19, 69:18, 70:11, 74:11, 75:4, 266:16, 267:7, 267:17	businesses 53:12, 53:20	
bodies 227:22, 228:8	brief 28:12, 28:16	butyrolactone 227:8	
bomber 60:15	bring 201:3, 216:12	buying 98:21, 99:1	
bond 125:16, 126:11	broad 32:19, 46:19, 120:14	C	
bonds 127:18, 127:20, 128:16, 129:20, 179:12, 179:13	broader 45:7	ca 20:10, 84:19	
book 229:12		calcium 102:8	
borate 123:1		calendar 159:4	
born 37:22		california 33:22, 34:1, 34:3, 34:9	
bot 206:1		call 45:9, 73:9, 99:17, 100:22, 115:5, 233:11	
both 47:12, 70:14,		called 10:20, 17:21, 18:19, 18:21, 19:11, 35:7, 36:12, 51:2, 53:17, 54:13, 99:18, 164:2, 181:12, 221:22, 227:17, 229:20	

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 73 of 120

256:10, 257:9, 258:6, 258:7 car 56:9, 99:1, 229:7 carbon 179:10, 179:12 carbon-carbon 127:17, 127:19, 128:15, 179:12 carbon-containing 125:14 carbon-hydrogen 127:17, 127:20, 179:13 carbon-nitrogen 125:15, 126:11, 129:20 carbonate 38:18, 65:7, 66:2, 119:7, 119:8, 121:10, 122:12, 123:8, 227:6, 227:8, 227:10, 227:11, 227:12, 227:13, 227:14, 228:10, 228:12, 229:2, 229:4, 229:5, 229:7, 230:5, 230:6, 230:9, 230:10, 230:11, 230:12, 230:14, 230:15 carbonates 41:2, 47:21, 47:22, 119:9, 121:9, 121:13, 228:16 carbons 88:7, 128:13, 128:14, 179:7 case 1:6, 1:9, 1:12, 5:9, 11:13, 11:16, 11:19, 12:4, 12:6, 12:13, 12:19,	18:20, 18:21, 26:3, 26:6, 26:9, 68:4, 77:22, 78:8, 79:5, 82:3, 83:16, 83:22, 108:10, 110:12, 115:9, 115:17, 133:7, 149:6, 150:1, 151:6, 161:7, 162:10, 162:11, 166:14, 166:16, 167:8, 167:11, 177:17, 199:2, 199:3, 199:12, 200:1, 201:12, 202:2, 202:22, 206:6, 207:6, 208:7, 211:5, 215:21, 220:3, 220:12, 224:10, 234:14, 234:15, 234:16, 242:12, 247:14, 249:22 cases 9:15, 9:20, 9:21, 10:4, 17:20, 18:7, 18:10, 19:14, 20:11, 95:9, 113:17 cassidy 1:28, 2:8, 6:5, 267:3, 268:12 category 229:8 cath 146:18 cathad 146:18 cathodes 87:13, 103:7, 109:15, 123:14, 125:21, 144:13, 151:19, 157:22 cation 88:16	cations 89:2 cause 111:21, 157:4, 157:19, 158:2, 162:19 caused 160:14, 161:1 causes 164:21 cell 240:17, 240:18 cells 58:8, 131:6 center 3:15 ceramic 132:19 certain 14:3, 25:15, 25:16, 54:13, 90:4, 98:8, 104:9, 114:8, 142:15, 156:18, 157:1, 157:9, 157:16, 231:7 certainly 27:4, 47:9, 114:9, 135:10, 158:7, 168:21, 248:1 certificate 267:1 certify 267:6, 267:13, 267:16, 267:20 chair 52:14, 52:16, 149:3 chance 134:16, 136:16, 246:4 change 92:4, 113:17, 121:16, 148:11, 148:21, 157:2, 157:4, 157:15, 157:19, 158:1,	159:21, 160:18, 161:5, 161:14, 167:6, 208:5, 209:13, 244:14, 248:22, 249:1 changed 132:12, 223:16 changes 30:10, 156:7, 157:5, 157:6, 224:1 changing 39:10, 160:17, 161:4 characteris 157:9 characteristic 169:9 characteristics 44:2, 156:18, 157:1, 157:9, 157:17, 165:11 characterization 23:16, 34:6 characterize 127:21, 128:21, 165:4, 169:6, 183:16 characterized 214:13 characterizes 164:7, 185:9 charge 87:19, 88:15, 88:18, 88:20, 92:5, 164:16, 175:8, 175:14, 175:19, 176:1, 176:4, 239:6 charged 120:16, 120:18, 177:9 charging 164:10, 164:13, 166:6, 168:3, 235:7, 235:14, 235:18, 239:21, 264:22
---	--	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 74 of 120

charlotte 3:9 chart 91:12 che 31:16 check 265:22 chemistry 31:15, 31:17, 126:15, 127:12, 157:12 china 4:20, 220:19, 226:6 chinese 55:15, 55:17, 56:8 chloride 45:18 choi 132:22, 133:3, 133:6, 134:18, 138:10, 139:13, 140:7, 142:14, 143:8, 143:11, 145:3, 145:11, 145:16, 145:20, 146:3, 147:11, 148:5, 149:15, 149:17, 150:14, 151:14, 151:21, 152:6, 180:17, 180:19, 181:4, 181:13, 181:19, 182:15, 183:8, 183:18, 185:9, 185:14, 185:21, 186:8, 186:13, 187:15, 188:2, 188:17, 189:3, 189:15, 190:14, 191:15, 192:14, 192:15, 192:19, 193:1, 193:10, 193:21, 194:16, 195:8, 195:11, 195:12, 196:1,	196:2, 196:4, 198:17, 199:20, 200:7, 200:15, 201:1, 201:22, 202:8, 202:16, 261:1, 261:21 choo 212:15 choose 212:16, 213:4 chose 213:4, 213:7, 213:15 chosen 103:9 chris 6:22, 39:17 christopher 3:4, 5:19 circuit 131:20 citation 42:5 claim 12:6, 12:14, 134:10, 134:15, 134:18, 138:11, 150:1, 150:4, 150:7, 150:10, 150:14, 151:3, 211:8, 211:9, 211:10, 212:21, 213:18, 214:4, 214:12, 214:17, 214:19, 215:7, 215:10, 215:16, 216:13, 216:18, 217:3, 217:11, 217:15, 217:20, 217:22, 218:1, 218:10, 218:20, 218:22, 219:8, 219:18, 219:19, 219:21, 220:5, 220:9, 220:10 claimed 18:15, 235:16 claiming 235:10	clarification 118:1, 130:6, 132:6 clarify 13:19, 248:10 class 62:14 classification 90:14 clause 197:1, 212:5, 212:21, 214:5 clean 73:12 clear 15:10, 54:1, 100:2, 120:8, 123:15, 129:16, 185:16 close 131:12, 209:17, 209:18 closer 65:20 coating 132:19 cobalt 44:3, 87:13, 87:15, 90:19, 91:2, 91:4, 92:21, 93:5, 93:19, 94:3, 94:4, 94:8, 94:13, 94:14, 94:18, 94:19, 96:6, 96:8, 99:5, 99:21, 104:19, 137:1, 137:22, 140:20, 140:22, 141:7, 141:12, 141:13, 141:18, 141:21, 145:5, 145:7, 145:11, 145:17, 145:20, 146:4, 146:7, 146:13, 146:16, 152:1, 152:4, 152:7,	152:10, 152:17, 153:2, 154:2, 154:6, 222:22, 223:1, 223:3, 224:4, 224:6, 225:16, 225:19, 242:5 coby 244:15 coda 55:15, 55:16 codirector 46:4, 46:10, 46:21, 51:14, 51:15, 51:17 collaborate 37:14 collaborated 95:5, 105:13, 106:17, 108:12, 109:11, 124:2, 124:11, 124:15, 124:21, 131:1 collaborating 35:6, 40:6, 40:18, 40:20, 47:15, 93:12, 93:16, 95:12, 120:3, 120:13 collaboration 43:10, 60:16, 64:4, 126:4, 130:13 collaborations 95:6, 105:17, 106:6, 129:5 collaborative 42:22, 46:18, 63:11 collaborator 46:15 colleague 5:21 colleagues 24:9 collectors 86:12, 156:5 column 163:11, 163:13,
---	--	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 75 of 120

163:14, 164:1, 164:6, 164:12, 164:18, 165:3, 166:2, 166:5, 166:10, 166:13, 167:3, 167:7, 167:20, 168:7, 168:10, 168:15, 168:17, 168:22, 169:13, 169:17, 170:8, 170:14, 171:8, 172:15, 175:1, 175:4, 176:7, 211:13, 211:17, 212:1, 214:22, 215:11, 215:12, 216:14, 219:1, 245:17 com 256:12 combination 171:1, 186:13, 188:17, 190:14, 193:1, 193:22, 194:16, 199:20, 201:22, 202:16, 213:12, 213:20, 224:2 combine 181:13, 185:14, 188:1, 188:18, 191:2, 192:14, 192:18 combining 152:3, 187:15, 191:15, 195:12 comfortable 221:11 coming 137:13 comma 207:18 commencement 267:9 commencing 267:19 comment 192:22, 265:1	commented 191:14 comments 254:1, 257:11 commercial 41:8, 57:11, 98:21, 99:1, 122:13, 176:2 commercially-supplied 103:19 commission 268:7 common 87:2, 87:5, 87:7, 87:10, 87:22, 88:1, 88:5, 90:14, 94:4, 94:8, 94:13, 97:15, 97:21, 97:22, 98:2, 98:4, 98:7, 102:14, 102:16, 131:22, 132:11, 132:15 commonly 104:16 commonwealth 2:9, 267:5 communicate 15:6 companies 47:16, 52:22, 53:2, 53:4, 53:11, 54:9, 55:12, 95:12, 106:20, 108:17 company 10:20, 11:10, 25:20, 35:7, 36:12, 36:13, 50:19, 51:2, 53:17, 55:16, 55:17, 55:19 comparative 66:1, 129:11, 232:5, 233:7 compared 158:22, 159:7,	233:5 comparison 231:19, 233:15, 234:15, 235:15, 235:20, 237:13, 237:15, 237:20, 238:9, 238:10, 238:16, 239:3, 239:8, 239:16, 239:17, 240:1, 240:6, 240:8, 240:11 compensate 88:15 complete 15:20, 77:10, 78:2, 78:18, 79:10, 80:12, 81:16 complex 193:11, 248:22 complexity 103:9 complicated 103:7, 114:20, 159:17, 250:4 component 112:22, 128:12, 131:9, 139:17, 152:12, 153:4, 179:5, 204:21, 205:3 components 35:17, 57:21, 86:3, 86:5, 87:2, 87:6, 87:7, 87:11, 87:22, 88:5, 88:7, 118:15, 121:2, 121:4, 121:17, 121:21, 131:22, 132:11, 132:15, 155:3, 156:1, 156:14, 224:7, 232:6, 238:10 composed 92:1, 120:1,	121:9 composite 144:10, 145:22, 146:10, 150:4, 151:15, 151:18, 152:13, 153:4 composites 88:3 composition 49:8, 155:13 compound 124:6, 127:10, 127:15, 127:16, 128:4, 128:7, 128:10, 129:1, 141:19, 178:22, 180:20, 181:5, 181:20, 182:7, 182:16, 183:19, 184:14, 185:2, 185:19, 187:19, 188:10, 189:5, 191:5, 192:10, 193:5, 193:17, 194:5, 194:12, 194:22, 195:7, 195:17, 196:13, 197:6, 198:18, 199:15, 200:3, 200:12, 200:20, 201:8, 201:16, 201:20, 202:4, 202:12, 223:3, 232:8, 240:20, 241:5, 241:22, 242:10, 246:15, 253:13, 257:15, 257:21, 258:4, 258:10, 258:22, 259:8, 259:18 compounds 123:5, 124:3, 124:4, 125:18, 128:1, 142:15, 240:9 comprising 150:5 computer 72:22, 73:10,
---	--	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 76 of 120

197:15, 197:17, 208:11 computer's 73:21 concentration 114:16, 114:18, 114:22, 214:2, 214:3 concentration's 115:17 concentrations 96:19 concern 118:10 concerned 191:1 concludes 266:15 condition 166:6, 168:3 conducted 1:20, 2:2 conducting 131:15, 158:19 conductivity 110:14, 111:12, 112:8, 112:16, 112:21, 113:2, 113:5 conferred 31:8, 31:10 confirm 29:10, 68:14, 187:6, 231:7 confirmed 31:8 confirming 187:10 confused 143:17, 143:19, 182:2, 186:11, 189:10 confusing 197:21 conjugated 34:6 connected 179:4	connecticut 50:20 consented 7:8 consider 82:6, 82:14, 84:19, 105:2, 155:8, 155:13, 155:17, 155:19, 155:22, 156:9, 187:5 consideration 114:13, 116:21, 117:12, 118:7 considerations 110:19, 111:5, 112:9, 120:4, 120:11 considered 32:20, 77:11, 78:3, 78:18, 79:11, 80:13, 81:17, 96:18, 107:22, 108:2, 179:5, 186:16, 187:3 considering 82:16, 148:15 consisting 137:21, 212:11, 219:4 construction 12:6, 12:14 consult 53:13, 53:15 consultant 52:20, 53:3, 53:5, 54:3 consulted 53:1, 54:12 consulting 53:7, 53:8, 53:11, 53:16, 53:21, 56:22, 57:1 consumer 61:12, 94:20 contact 24:21, 240:22,	245:1, 245:7, 246:11, 246:17 contacted 25:17 contain 103:22, 108:21 contained 62:20, 124:8 containing 64:15, 64:21, 65:3, 139:22, 204:3, 204:15, 206:11, 209:4, 248:7 contains 86:9, 99:15, 126:10, 127:17, 127:19, 128:11, 137:17 context 45:2, 45:6, 45:7, 45:16, 49:14, 110:6, 174:10, 248:10 continued 37:14, 51:7 continues 138:20, 212:12, 226:22 continuing 146:2, 227:15 contract 50:22, 53:14, 53:16, 53:17, 54:4, 54:20, 55:1, 55:2, 55:3, 55:11, 58:1 contracts 43:2, 52:21, 53:20, 53:22, 54:6, 54:9, 55:6, 56:3, 56:10, 56:14, 56:17, 57:6 convincing 64:13 copies 26:22, 72:4	copy 27:12, 28:1, 74:16 copy's 80:19 cornell 31:3, 31:17, 32:1, 32:4, 32:8, 32:16, 33:1 corner 135:18, 144:2, 149:17, 153:12, 211:8 corners 221:17 correct 8:3, 12:20, 23:11, 36:21, 38:5, 46:7, 50:14, 61:18, 69:2, 80:17, 95:1, 105:9, 112:10, 116:17, 118:16, 123:18, 130:15, 135:4, 145:19, 146:6, 146:22, 147:6, 151:16, 152:9, 153:10, 164:3, 164:8, 170:10, 171:12, 173:4, 183:13, 186:18, 190:18, 204:18, 205:13, 207:1, 207:4, 213:2, 217:8, 225:18, 229:5, 230:10, 236:21, 237:4, 237:22, 243:18, 243:20, 244:10, 248:16, 254:21 correctly 6:19, 36:7, 56:2, 60:8, 93:9, 104:14 correspond 142:15
--	--	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 77 of 120

correspondence 224:19	24:2, 73:20	235:14, 235:18, 235:20, 239:20, 239:22, 253:17, 258:8	69:1, 69:5, 70:18, 71:10, 75:8, 75:12, 75:15, 75:20, 76:3, 76:6, 76:10, 76:17, 76:22, 82:3, 82:13, 83:6, 83:12, 84:13, 84:15, 254:5, 260:4
cost 118:6, 118:9	court 6:4, 7:10, 11:2, 13:1, 14:7, 14:16, 15:11, 18:12, 19:11, 25:5, 25:14	cycling 86:22, 113:14, 159:4	decompose 49:19
could 9:21, 45:9, 61:2, 61:5, 61:6, 61:9, 61:11, 72:6, 82:7, 85:1, 85:3, 85:21, 86:15, 91:16, 92:14, 94:6, 106:2, 111:1, 113:1, 113:9, 113:10, 114:1, 114:5, 114:10, 115:22, 120:7, 137:11, 139:4, 147:14, 147:21, 150:16, 156:15, 156:16, 156:19, 156:21, 157:7, 157:15, 159:10, 171:4, 180:1, 205:5, 205:12, 206:10, 207:9, 207:14, 208:13, 212:16, 213:8, 213:13, 219:11, 231:14, 234:6, 234:10, 249:13, 256:19, 265:22	creation 165:2	dallas 3:18	decomposition 45:4, 45:21, 49:20
couldn't 249:15	critical 204:4, 204:17, 204:20	daniel 43:20	decrease 164:17
counsel 5:16, 6:14, 14:2, 14:5, 19:17, 20:8, 26:22, 72:8, 72:14, 267:14	criticism 157:14	data 239:9, 240:2, 241:7, 241:9, 242:2, 247:1, 247:15, 247:21, 248:1	defined 229:8
couple 41:11, 50:15, 53:6, 129:17, 203:2, 244:19	crow 3:15	date 5:11, 29:13, 30:3	definitions 175:21
course 13:13, 14:7, 14:20, 23:18,	crystal 117:22, 118:4	dated 29:19, 72:5, 74:6, 180:5	degrades 45:20, 159:18
	curious 240:17	day 190:7, 256:4, 268:6	degree 30:16, 30:17, 30:21, 31:4, 31:7, 31:9, 31:14, 31:16, 32:16, 33:3
	current 56:7, 86:12, 156:5, 175:8	de 8:12, 95:5, 173:6	degrees 31:2
	currently 8:17, 52:7, 52:9, 52:10, 52:13, 53:16, 55:3, 68:7, 122:19	dec 256:7	deintercalation 89:19, 89:22, 90:3
	curriculum 4:26	decisions 19:12, 19:14, 23:13	deletions 30:10
	cut 80:19	declara 70:15	
	cv 8:1, 26:12, 27:5, 27:7, 27:10, 29:3, 29:5, 29:10, 29:18, 30:1, 39:11, 39:21, 46:2, 51:4, 58:21, 66:8	declarat 69:15	
	cycle 159:19, 164:16	declarations 17:21, 18:5, 18:6, 21:21, 21:22, 22:3, 22:16, 23:19, 27:1, 27:2, 29:19, 66:10, 66:15, 66:21,	
	cycled 131:6		
	cycles 176:4, 235:6,		

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 78 of 120

density 170:15, 170:18, 171:1, 171:11, 171:15, 174:19	description 169:20, 205:10, 222:20, 228:14	124:10, 130:22	233:17, 233:20, 233:22, 234:4, 234:6, 234:10, 235:3, 236:3, 251:17
dep 80:7	design 35:19, 41:7, 155:9, 155:20, 156:11, 158:5	developing 40:14, 45:21, 57:13, 58:2, 58:3, 93:7, 93:10, 93:13, 97:14, 97:20, 99:6, 99:12, 114:14, 115:20, 116:21, 117:6, 117:12, 117:17, 118:7, 155:14, 156:13	difluorophosphat- e's 122:21
department 124:18	designed 57:10	development 155:10, 155:20, 156:11, 158:6	dimethyl 44:11
depends 45:1, 176:20	designing 35:21, 40:14, 41:6, 41:13, 60:16, 110:21, 111:6, 114:14, 120:3, 120:13, 122:9, 155:14, 155:16, 156:13	dialkyl 47:21, 119:9, 121:13	dimethylacetamide 39:4, 41:22
depos 5:14, 6:6	desired 157:16, 176:10, 177:14	diameter 142:5, 145:6, 145:8, 145:21, 146:8, 152:4, 152:11, 153:3, 194:1, 194:2, 223:2	dinitrile 129:17, 129:18, 129:19, 130:12, 179:15, 179:16, 231:6, 231:10, 237:4, 237:7, 238:12, 238:17, 239:6, 240:20, 241:5, 241:14, 241:16, 241:17, 241:21, 242:10, 245:6, 246:10, 247:12
deposed 12:5, 17:19	desk 216:9	differences 71:3, 168:14, 255:13, 256:17, 260:2, 261:21, 261:22	dinitriles 129:8, 129:12, 129:22, 244:19, 245:1, 247:18
deposited 49:21	detail 36:3, 42:15, 136:10, 166:18, 168:19	different 7:9, 20:9, 45:9, 48:16, 62:6, 62:15, 79:22, 85:13, 101:11, 101:13, 102:10, 122:1, 122:16, 123:2, 129:13, 134:1, 143:19, 156:14, 157:3, 170:11, 170:12, 173:3, 175:10, 175:12, 175:20, 175:21, 175:22, 184:8, 193:20, 198:1, 201:3, 223:17,	direct 240:22, 245:1, 245:6, 246:11, 246:17
deposition 1:18, 2:1, 5:6, 5:14, 7:7, 7:11, 7:17, 9:1, 9:4, 13:10, 14:2, 15:4, 18:3, 19:18, 20:8, 20:17, 20:19, 20:22, 21:3, 21:10, 21:18, 23:17, 24:8, 24:10, 25:1, 76:12, 266:15, 267:8, 267:10, 267:15, 267:16	detailed 169:20		direction 162:21
depositions 7:22, 9:8, 9:14, 9:19, 10:3, 10:7, 10:11, 76:20	deteriorate 165:11		directly 33:17
describe 164:13, 194:17	deterioration 169:8		director 52:11
described 122:18, 136:10, 160:8, 194:17, 236:19, 262:2	determining 110:20, 111:5, 120:12		disadvantageous 157:5
describes 164:9, 164:15, 171:9, 183:14	detrimental 176:11		disassociates 45:18
describing 46:9, 92:16, 170:11	devel 115:20		discharge 88:19, 89:1, 92:6, 161:11, 161:15, 161:18, 162:3, 164:16,
	develop 35:19, 48:20, 50:1, 156:11		
	developed 38:20, 48:10, 50:3, 57:11, 60:7, 60:12, 61:4, 61:17, 103:3, 124:1,		

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 79 of 120

175:10, 175:14, 175:19, 176:1, 233:5, 233:6, 233:9, 233:12, 233:14, 234:3, 234:4, 234:10, 234:11, 235:4, 235:6, 235:11, 235:13, 235:17, 235:19, 236:1, 238:20, 238:22, 239:3, 239:7, 239:12, 239:13, 239:15, 239:17, 239:19, 239:22, 240:5, 240:14, 242:5, 253:15, 253:16, 253:17, 258:6, 258:7, 258:8 discharging 235:7, 235:14, 235:18, 239:21 disclose 145:3, 151:21, 192:15, 192:16, 193:22, 222:19, 223:14, 223:21, 227:5, 228:7, 228:11, 228:21, 230:4 disclosed 192:20, 195:13 discloses 136:19, 142:15, 146:15, 152:1, 154:4, 193:11, 193:20, 225:15, 229:3, 230:5, 230:8, 253:12, 258:3 disclosure 241:10, 249:21, 249:22 disconnected 15:9 discose 142:14	discuss 164:19, 168:21, 169:1, 184:2, 190:3, 191:12, 195:9, 195:14, 195:15, 196:11, 197:4, 197:9, 199:14, 200:2, 200:16, 201:4, 201:6, 201:12, 202:3, 202:10, 250:17, 251:1, 251:19, 252:9, 252:11, 253:9, 254:15, 255:19, 256:8, 256:12, 257:7, 257:13, 257:20, 259:6, 259:17, 261:1, 261:13, 261:17, 261:21, 262:1, 262:13, 263:18, 264:7, 264:11, 264:15, 265:4 discussed 61:14, 102:21, 188:3, 255:4 discusses 173:9, 188:17, 194:16, 199:20, 200:14, 200:22, 201:18, 201:21, 202:16, 251:2, 251:5, 251:10, 251:20, 252:9, 253:9, 253:19, 255:4, 255:20, 256:9, 257:8, 261:17, 262:13, 264:7, 264:16 discussing 170:9, 188:1, 193:10, 248:4, 254:21, 266:10 discussion 107:16, 176:14, 185:21, 186:10, 191:13, 192:21,	211:1, 253:18 discussions 155:6, 251:16 disrupt 118:3 dissolution 114:10 dissolve 121:8 dissolved 119:7 dissolves 86:10 dissolving 116:6 distribution 116:13 district 13:1, 25:5, 25:14 division 52:14 doc 20:12, 85:7, 197:13 document 69:10, 81:8, 82:4, 82:11, 163:12, 221:17 documents 18:6, 18:9, 21:8, 22:1, 23:9, 23:16, 77:11, 77:14, 78:3, 78:6, 78:18, 78:22, 79:11, 79:15, 80:13, 81:6, 81:16, 81:20, 83:2, 83:5, 83:9, 83:10, 83:11, 84:6, 84:11, 84:16, 110:11, 148:16 doe 125:3 doing 35:12, 42:15,	42:21, 43:9, 45:12, 45:17, 47:5, 49:15, 51:19, 57:15, 59:4, 59:5, 59:6, 98:14, 98:19, 100:19, 129:7 done 13:2, 13:9, 17:4, 58:6, 124:8, 152:22, 196:8, 266:13 dopant 97:1, 97:11, 99:17, 99:18, 100:22, 102:4, 102:18, 103:4, 103:17, 104:4, 104:11, 104:22, 105:2, 105:8, 105:14, 105:19, 106:8, 106:18, 107:22, 108:2, 108:4, 108:13, 108:18, 109:2, 109:5, 109:10, 109:12, 109:18, 110:13, 110:20, 111:6, 112:9, 113:12, 113:15, 114:13, 115:5, 115:20, 116:5, 116:6, 116:9, 116:13, 116:20, 117:6, 117:10, 117:11, 117:16, 118:7 dopants 97:8, 98:11, 100:12, 100:14, 100:18, 101:2, 101:11, 101:19, 101:22, 103:22, 107:16, 107:19, 108:21, 110:4, 110:9, 110:21, 111:6, 112:2,
---	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 80 of 120

113:6, 113:21, 114:5, 116:17, 116:19 dope 97:15, 97:21, 98:1, 98:3, 98:7, 99:7, 99:14, 109:14, 109:15 doped 99:2, 102:8 dopes 100:7 dopi 108:5 doping 96:12, 96:15, 96:18, 96:21, 97:1, 97:3, 97:4, 97:7, 97:11, 98:17, 98:20, 108:5, 109:6, 111:17 double 128:15 douglas 3:4, 4:3, 5:18, 5:19, 6:16, 6:22, 27:4, 27:8, 27:14, 28:6, 28:15, 59:12, 60:1, 72:9, 72:12, 72:17, 83:13, 84:8, 85:5, 89:11, 103:13, 107:1, 107:5, 107:13, 111:14, 118:5, 130:10, 132:10, 154:10, 154:14, 154:21, 162:1, 171:6, 190:5, 191:17, 204:9, 210:20, 212:20, 213:14, 242:16, 242:20, 243:5, 265:21, 266:8, 266:13	down 43:15, 43:22, 51:22, 54:22, 55:4, 55:7, 55:12, 56:7, 57:22, 58:13, 65:11, 65:16, 134:2, 142:8, 219:13, 220:22, 221:12, 221:21 dozen 65:6 driven 47:13 ds 31:3 due 105:4 duly 6:10, 267:9 duracell 55:18 during 14:2, 15:4, 32:9, 32:11, 32:15, 33:1, 34:16, 34:21, 35:3, 35:10, 37:1, 37:6, 37:10, 37:13, 37:17, 38:3, 38:7, 38:12, 40:2, 40:7, 40:12, 41:20, 42:16, 43:11, 46:20, 47:3, 47:6, 47:17, 49:6, 62:10, 62:18, 64:4, 88:18, 102:22, 155:9, 155:20, 156:10, 158:5, 264:22 E e-b-a 11:3 each 19:1, 26:13,	28:19, 44:13, 82:13, 135:1, 135:2, 137:6, 175:20, 213:16 eaglepicher 36:12 earlier 61:4, 61:14, 118:12, 122:7, 123:16, 155:2, 176:13, 180:5, 225:1, 229:8, 237:3, 248:5 easier 11:2, 133:8, 135:11 easily 48:13, 131:17, 135:9, 147:7 easy 57:6, 250:7 ebay 11:3 ec 41:3, 47:21 ec:dmc:dec 41:4 ec:emc 41:5 editor 51:22 edt 1:22 education 30:15 effect 114:17, 114:19, 114:22, 124:20, 195:9, 250:18, 251:2, 251:10, 251:20, 252:9, 252:12, 253:10, 253:14, 253:19, 254:1, 254:15, 255:4, 255:20, 256:9, 257:8, 258:5, 259:22, 261:2, 261:13,	261:17, 262:14, 263:18, 264:7, 264:16 effective 242:11 effectively 172:1 effects 49:7, 176:11, 261:8, 264:11 eight 21:7 either 41:18, 43:9, 52:20, 83:5, 87:13, 111:12 elec 114:2, 122:2, 264:8 elect 251:3 electr 248:8 electric 248:6 electrical 112:21, 113:4, 131:17 electro 181:22 electrochemical 30:7, 44:2, 52:12, 52:15, 113:7, 113:11, 113:16, 113:22, 114:6, 115:13 electrode 89:16, 90:4, 159:13, 159:16, 160:8, 165:6, 165:9, 169:4, 170:2, 170:19, 171:2, 171:12, 171:16, 181:13, 222:1, 240:21, 241:1, 241:6, 242:1, 245:2, 245:7, 246:12,
--	--	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 81 of 120

246:16, 246:18, 247:6, 264:21 electrodes 35:16, 44:3, 47:12 electrolyte's 49:17, 161:12 electrolyte-electrode 38:12 electrolytes 32:11, 32:15, 32:20, 32:22, 35:6, 35:20, 35:22, 37:12, 38:4, 38:10, 38:15, 38:19, 39:3, 39:13, 39:16, 40:15, 40:18, 40:20, 40:22, 41:1, 41:14, 41:16, 43:13, 44:3, 47:9, 47:18, 57:18, 58:10, 59:2, 60:19, 60:21, 61:3, 61:10, 61:16, 62:20, 64:15, 64:21, 65:3, 103:19, 118:13, 119:2, 119:5, 119:12, 119:15, 119:18, 119:21, 123:6, 126:2, 131:2, 155:5, 157:22, 164:11, 248:4, 248:6, 248:8, 249:3, 249:16, 249:17, 250:3, 263:3 electrolytic 230:20, 232:12 electronics 61:12, 94:20 electrons 88:15, 89:4 element 96:22, 97:1,	97:3, 97:5, 97:7, 97:11, 97:12, 109:9, 117:11, 117:16, 213:1, 213:5, 213:8, 214:9, 215:4, 215:13, 216:16, 218:6, 219:3 elements 91:12, 156:17, 156:22, 157:7, 157:15 elkins 3:14, 6:2 else 8:19, 8:21, 15:12, 19:22, 20:11, 30:10, 177:14, 258:9 elsewhere 108:11 email 15:5 emails 25:9 embodiment 221:22, 222:17, 223:5, 223:9, 223:12, 223:15, 223:18, 228:18, 228:22, 229:1, 229:3 emc 230:7 employed 267:22 employee 52:20 enable 158:10 end 141:5, 142:13, 223:5 energy 46:4, 46:10, 46:19, 46:21, 88:22, 105:6,	106:12, 124:18 enhance 161:11 enhancement 253:15 enhancing 258:6 enough 15:2, 64:13, 66:17, 71:6, 97:13, 99:11, 106:22, 118:11, 120:10, 125:7, 127:13, 147:17, 171:7, 174:14, 183:4, 186:3, 186:14, 210:13, 216:10, 250:8, 256:6 entire 222:15 entitled 68:18, 69:18, 70:10, 74:10, 75:3, 168:11 enumerated 7:19 equal 151:6, 204:3, 204:4, 204:16, 204:17, 209:5, 218:12, 219:10, 219:16 erosion 242:11 especially 14:14, 49:15, 111:20, 161:8 esquire 3:4, 3:5, 3:13 establishing 147:19 ester 229:5, 230:10 esters 227:6, 227:7, 228:13, 228:15, 228:16, 229:9	ethyl 227:6, 227:9, 227:11, 227:14, 228:12, 229:2, 229:4, 230:6, 230:10, 230:12, 230:14, 230:15, 230:16 ethylene 119:8, 121:10, 227:5, 227:8, 227:11, 227:13, 228:9, 228:10, 228:12, 229:1, 229:4, 230:5, 230:9, 230:11 evaluating 195:11 evaluation 232:17 even 41:7, 116:12 events 160:19 ever 8:22, 12:16, 13:4, 50:22, 52:17, 52:19, 54:11, 57:10, 57:14, 99:7, 107:21, 108:12, 109:11, 124:7 every 14:19, 124:6, 124:7 everything 15:13, 20:11, 118:10, 124:7, 124:8, 156:1, 161:13 everything's 97:12 evolution 111:21, 161:5 evolved 87:8 ex 126:18
---	--	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 82 of 120

exac 147:12	237:15, 237:20, 238:9, 238:10,	exhibits 5:1, 23:15, 27:1, 27:2, 72:1, 81:3, 83:22, 146:21, 148:5, 148:13	F
exact 33:13, 148:16	238:11, 238:12, 238:14, 238:15, 238:16, 238:17, 238:21, 238:22, 239:3, 239:6, 239:8, 239:12, 239:16, 239:17, 239:21, 240:1, 240:6, 240:8, 240:11	exi 225:8	fabrication 221:22
exactly 18:13, 25:6, 57:5, 62:4, 62:7, 63:1, 63:16, 64:11, 64:17, 75:16, 75:21, 76:1, 129:13, 149:4	examples 49:1, 85:17, 90:16, 92:8, 92:19, 93:2, 100:14, 101:2, 101:19, 101:21, 107:19, 122:8, 126:12, 126:18, 127:22, 129:22, 136:19, 137:6, 137:19, 139:4, 139:7, 139:10, 140:16, 140:19, 144:10, 146:13, 151:17, 152:18, 154:3, 238:13	expanded 47:9, 48:8	faces 132:20
exam 236:10	excellent 18:1, 22:8, 23:4, 30:13, 30:20, 39:19, 40:1, 66:7, 74:7, 74:14, 77:6, 149:21, 163:10, 178:15, 250:12	expanding 48:19	facilities 210:2
examination 4:2, 6:14	except 232:7, 232:11, 232:14, 238:10	experience 57:20, 87:1, 87:21, 92:7, 92:18, 105:16, 106:5, 107:21, 108:4, 118:6, 119:1, 121:1, 123:4, 131:21, 234:2, 234:9, 248:13, 248:14, 249:9	fact 201:2, 243:19
examined 6:12	exception 28:3	expert 13:4, 21:22, 23:20, 25:18, 76:12, 234:2	fails 185:13
example 107:18, 114:21, 128:22, 139:14, 139:22, 140:20, 142:19, 143:15, 144:18, 144:21, 145:1, 145:10, 145:12, 145:16, 145:17, 146:3, 146:7, 150:18, 151:4, 151:15, 151:17, 151:22, 152:6, 152:7, 152:15, 152:17, 152:20, 153:2, 156:21, 160:10, 162:12, 184:12, 224:5, 225:16, 229:20, 230:8, 231:19, 232:6, 232:7, 232:10, 233:5, 233:6, 233:7, 233:8, 233:14, 233:15, 234:16, 234:18, 235:7, 235:10, 235:14, 235:15, 235:19, 235:20, 236:10, 236:15, 236:19, 237:13,	exclusively 37:19, 121:10	expert's 18:6	fair 13:22, 15:2, 23:16, 32:6, 63:12, 66:17, 71:6, 80:22, 84:9, 97:6, 97:9, 97:13, 99:11, 103:8, 103:14, 118:11, 120:10, 125:7, 126:17, 127:13, 128:20, 129:15, 145:10, 147:10, 147:17, 157:14, 162:7, 171:7, 174:14, 183:4, 185:7, 186:3, 186:14, 196:21, 199:1, 210:13, 233:13, 235:5, 235:12, 235:17, 239:5, 239:19, 240:4, 240:19, 241:15, 241:21, 250:8, 256:6
	excuse 71:18	explode 111:22	fairly 98:12, 122:21
	exercise 149:2	expounded 82:20	fairness 226:22
		extend 158:22	fall 141:21
		external 56:13	falls 141:13
		extremely 250:4	familiar 85:7, 89:5, 89:9, 89:18,

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 83 of 120

90:6, 91:5, 96:12, 96:21, 100:6, 100:9, 102:17, 105:8, 115:7, 119:11, 119:17, 126:6, 126:18, 127:9, 128:6, 174:5, 211:10, 231:8 far 8:3, 8:7, 44:15, 44:16, 77:13, 78:5, 78:21, 79:14, 81:4, 81:19, 83:10, 106:11, 122:12, 132:2, 194:9, 244:11 fast 196:19, 196:20 favorable 253:14, 258:4 fec 65:12, 122:19, 123:10, 123:17, 124:12, 124:16, 124:20, 125:2 feel 14:20, 181:11, 216:11, 222:14 fell 206:20, 213:17 fellow 30:7, 34:4, 34:8 few 23:14, 29:14, 39:7, 41:21, 50:21, 59:9, 107:18, 107:19, 125:8, 174:19, 175:12, 176:4 field 164:4, 234:3 fifth 9:5, 136:18, 141:5 figure 189:1, 189:12,	189:17, 190:9 figured 28:17 figures 206:7, 233:17, 233:22 file 18:20, 18:22, 48:12, 59:10, 72:22, 74:3 filed 21:11, 59:7, 68:19, 69:19, 70:11, 74:11, 75:4 film 49:12, 49:22, 164:19, 164:21, 165:5, 165:8, 169:1, 169:3, 264:20 films 49:10, 50:2, 160:4 financially 268:2 find 73:16 fine 6:21, 15:10, 27:16, 42:13, 73:11, 73:13, 107:4, 177:21, 242:19, 244:4 finish 14:9, 14:10, 246:3 firm 5:20, 7:1 first 6:10, 10:16, 25:4, 25:12, 25:13, 25:15, 25:17, 29:18, 59:3, 59:14, 61:19, 61:20, 65:12, 67:4, 67:5, 67:10,	67:14, 68:5, 69:8, 69:15, 69:16, 70:14, 70:15, 70:16, 71:1, 71:14, 71:18, 71:20, 72:19, 74:8, 75:8, 75:12, 75:15, 75:20, 76:20, 77:2, 77:4, 77:12, 77:17, 78:4, 78:7, 78:10, 78:20, 79:1, 82:2, 82:9, 83:1, 83:15, 134:3, 137:14, 138:15, 140:11, 145:4, 152:1, 159:19, 161:3, 162:16, 170:1, 173:5, 173:6, 176:4, 179:19, 180:1, 197:2, 206:17, 226:11, 226:12, 250:10, 250:17, 254:7, 255:2, 255:18, 256:8, 258:15, 258:16, 259:16, 260:6, 263:6, 264:6 fit 117:21, 205:10, 205:20, 206:8, 213:20 five 9:6, 9:8, 9:9, 9:14, 30:6, 59:4, 134:2, 220:22 flame 42:6, 42:8 flip 133:13, 133:18, 138:9, 147:1, 167:14, 177:20, 191:12, 225:22	flipping 135:11, 140:5 fluorinated 63:3 fluorine 123:4, 124:3, 124:4 fluorine-based 264:19 fluorine-contain- ing 62:20, 64:15, 64:18, 64:21, 65:3, 123:7, 124:6, 248:9, 248:14, 249:4, 249:18, 265:15 fluoroethylene 65:6, 66:2, 123:8 focus 38:10, 62:17, 64:19, 129:7, 251:16, 255:12, 256:17, 261:22 focused 62:14, 63:18, 260:1 following 84:5, 84:11, 84:16, 183:2, 188:14, 188:21, 206:8, 206:15 follows 6:13 food 216:1 forgot 55:16 form 47:22, 83:8, 83:12, 84:2, 85:2, 89:8, 103:10, 111:8, 117:19, 161:19, 171:3, 189:22, 191:10, 204:8, 212:18, 213:10
---	--	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 84 of 120

formal 50:22 formed 165:5, 165:8, 169:3 former 24:9 forms 88:6, 264:20 formula 135:1, 141:6, 141:13, 141:16, 179:1, 179:14 formulas 134:19, 135:2, 142:16, 150:11, 150:14, 150:17, 150:19, 151:2, 151:4 formulation 120:6, 120:12, 121:2, 121:18, 122:9, 125:10, 131:3, 155:9, 156:3, 156:5, 156:9, 156:17, 156:22, 157:8, 157:16, 158:4, 159:2, 159:21, 160:17, 232:13 formulations 123:11, 124:13, 125:19, 130:1, 158:9, 158:16, 158:18, 158:20, 158:21, 159:1, 159:6, 159:8, 159:12, 159:15, 160:6, 160:12, 160:20, 161:6, 161:10, 161:16, 162:2 forth 77:12, 78:4, 78:19, 79:12, 80:14, 81:18, 86:11, 86:22, 88:14, 88:16,	118:21, 158:14, 267:8 found 26:17, 155:1 four 53:10, 59:3, 134:19, 135:1, 135:2, 142:16, 150:11, 150:14 fragment 179:11 frame 35:3, 35:10, 36:1, 37:13, 38:8, 38:13, 38:16, 40:7, 42:11, 49:6, 50:5, 50:12, 62:10, 65:10, 99:9, 99:13, 100:14, 100:17, 105:21, 106:1, 110:8, 110:16, 110:18, 111:4, 119:5, 121:19 framework 49:15 free 181:11, 183:4, 222:14 frequent 128:13 frequently 111:12, 121:14, 122:22, 132:8, 159:3 front 22:15, 22:17, 23:3, 27:12, 28:4, 69:6, 147:2, 180:8 full 8:10, 8:11, 138:15, 140:11, 226:16 full-time 43:5 fun 12:9, 135:7	function 129:12, 158:12 functions 240:21, 246:16 fundamental 129:9 funded 46:16, 124:18 funding 46:13, 54:13 further 13:8, 43:15, 43:21, 55:5, 55:7, 55:12, 56:7, 65:16, 65:17, 65:18, 203:16, 219:13, 221:21, 266:9, 267:13, 267:16, 267:20 G gas 160:13, 161:1, 161:2, 161:5, 247:7, 247:12, 247:19, 247:21 gassing 160:17, 160:18 gave 46:16, 50:3, 72:2, 106:12, 106:20, 167:7, 244:12 gears 148:22, 216:11 gen 90:14 general 29:15, 90:14, 176:9, 244:20, 249:7, 249:10, 250:5, 254:20 generally 42:11, 53:15, 59:1, 96:18, 100:9, 108:21, 109:14, 110:1,	110:4, 125:22, 136:13, 137:15, 160:3, 248:12, 250:2 generate 159:19, 164:20 generating 121:12 generation 160:13, 161:1, 247:7, 247:12, 247:19, 247:21 generation's 161:3 germanium 102:6 getting 38:8, 53:14, 65:19, 149:2, 249:19, 249:20, 256:4 gigs 52:3 give 15:20, 31:2, 73:15 given 267:12 gives 253:13, 258:4 glad 154:22 glance 207:9 go 13:7, 28:7, 28:8, 37:14, 49:16, 56:11, 65:18, 72:12, 72:13, 86:10, 88:21, 89:2, 89:4, 107:5, 111:21, 131:16, 135:9, 136:11, 140:7, 143:9, 162:19, 177:16, 179:17, 182:22, 190:2, 190:20,
--	---	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 85 of 120

197:16, 198:2, 210:9, 216:4, 217:6, 218:20, 234:18, 244:20, 249:22, 265:22 goes 87:20, 88:16 going 12:9, 13:13, 28:11, 48:11, 50:8, 53:13, 55:4, 55:7, 56:6, 59:12, 59:16, 65:16, 65:17, 65:22, 66:11, 73:5, 97:19, 98:14, 107:1, 107:7, 115:3, 117:3, 117:10, 131:8, 140:7, 149:7, 149:9, 154:10, 154:15, 161:12, 165:12, 167:13, 177:17, 182:9, 192:2, 198:10, 202:15, 206:17, 210:14, 222:12, 242:21, 250:6, 266:2, 266:16 gold 46:15 good 5:18, 6:1, 9:13, 13:12, 55:22, 58:16, 59:13, 64:13, 65:21, 95:19, 107:2, 115:10, 120:18, 120:19, 120:20, 123:12, 123:14, 130:8, 144:15, 157:20, 160:5, 160:10, 169:10, 176:2, 221:15 gotion 56:8	government 54:15, 54:17 grams 143:16 grant 124:19, 125:3 grants 54:8, 54:15, 54:17, 56:13 grapevine 125:4 graphite 86:8, 88:1, 88:2, 88:6, 123:13 graphites 88:4 great 166:1, 180:2, 246:8, 260:20, 266:14 greater 204:15, 214:14, 218:12, 219:10, 219:16 ground 13:12, 185:3, 185:4, 185:9, 185:14, 186:12, 186:17, 187:15, 189:9, 191:13, 191:15, 194:17, 252:22, 257:1 group 35:9, 37:14, 137:5, 137:21, 179:4, 179:6, 179:9, 179:10, 212:11, 219:4 groups 46:13, 181:6, 181:21, 182:7, 182:17, 183:20, 184:15, 185:3, 185:20, 187:19, 188:11, 189:5, 191:6, 192:11, 193:6, 193:17,	194:6, 194:13, 195:1, 195:7, 195:18, 196:14, 197:6, 198:19, 199:16, 200:4, 200:12, 200:20, 201:9, 201:16, 201:21, 202:5, 202:13, 257:16, 257:22, 258:11, 259:1, 259:8, 259:19 guess 17:20, 18:17, 18:19, 20:21, 32:19, 65:12, 82:15, 97:3, 177:3, 181:17, 188:13, 190:12, 226:15, 232:22, 246:14 guys 25:21 H half 9:9, 21:5, 21:7, 65:6, 173:22, 174:1 halfway 221:12 hand 268:5 hang 26:18 happened 76:12 happening 97:17 happens 88:17 happy 106:4, 190:20 hard 19:8, 27:12, 28:1, 44:12, 57:5, 88:6 head 172:10	header 56:12, 185:8, 227:16 headhunter 25:20 heading 229:20, 231:18 headshakes 14:16 hear 36:6, 136:5 heard 125:4, 125:22, 211:20 held 267:17 helpful 57:8 helps 161:9, 180:6 here 5:5, 6:2, 17:18, 17:19, 22:17, 23:3, 28:17, 43:19, 54:18, 71:12, 83:10, 84:21, 95:15, 100:13, 102:21, 103:15, 104:2, 108:16, 108:22, 109:16, 110:2, 122:3, 124:22, 127:1, 127:3, 129:21, 132:14, 134:8, 136:9, 136:12, 141:17, 143:19, 148:1, 163:2, 172:2, 172:6, 187:9, 188:16, 196:6, 197:21, 211:16, 216:7, 219:15, 228:14, 233:19, 241:8, 249:2, 256:4, 256:5 hereby 267:5
--	---	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 86 of 120

hereinbefore 267:8	hold 52:6, 52:7,	115:18, 115:20, 116:12, 117:4, 121:11, 205:3	indeed 133:20
hereto 136:9	58:12, 71:22, 148:1, 148:20,	improve 38:21, 41:15,	independently 200:16
hereunto 268:5	178:6, 198:1, 205:14, 215:22	47:22, 48:3, 110:14, 111:10,	independently-ow- ned 36:13
hex 42:5	honorarium 52:13	125:20, 176:6, 195:8	indicated 50:9
hexafluorophosph- ate 119:6, 121:7,	hope 162:18	improved 39:2, 159:7,	individual 201:12
124:9	hour 14:19, 59:13,	177:12	individually 194:18
hexafluorophosph- ate's 124:5	107:2, 154:11, 210:12	improvements 50:4	industries 224:20
hexamethyldisila- zide 33:12	hours 21:5, 21:7,	improving 176:9, 177:4,	industry-wide 50:6
hexamethylphosph- oramide 39:6, 42:4,	75:22, 76:19	177:6	influence 82:19, 160:16
42:6	housekeeping 16:2	include 31:5, 139:8,	infringement 9:22, 20:11
high 49:16, 64:5,	housing 86:12	included 119:8, 232:15	infringing 11:18
99:17, 100:22, 105:6, 106:12, 111:20, 116:14, 120:20, 123:15, 125:21	houston 10:20	includes 217:18	inhibit 45:21, 45:22, 46:1
high-energy-dens- ity 94:2, 94:5,	however 14:21, 115:11	including 7:9, 7:22, 53:21, 156:14	inhibited 45:4
94:10	hy 179:12	inclusion 195:6, 201:19	initial 56:14, 161:18,
higher 96:3, 112:5, 112:6, 177:9	hydride 85:20	incorporated 111:10, 122:3, 122:5, 232:11, 237:1	233:5, 233:6, 233:9, 233:12, 233:13, 234:9, 234:11, 238:20, 238:22, 239:2, 239:5, 239:7, 240:5, 253:16, 258:7, 264:22
highlighting 109:21	hydrogen 179:10	incorporation 241:17, 242:9	inner 161:7, 242:11
hindrance 114:6	hydrogens 128:14	increase 172:12	innovation 54:14
hired 34:11, 34:15	I	increased 165:12, 170:15, 170:19, 170:20, 171:2, 171:11, 171:16, 171:18, 174:19, 174:20	insoluble 49:20
history 18:20, 18:21, 19:1	identical 168:20, 199:6	increases 164:22, 165:10, 169:5	install 227:22, 228:7
hmm 65:22	identification 5:3	increasing 169:7	instant 15:5
hmpa 39:6	identifies 145:11, 145:16, 146:3, 152:6, 224:4		
	identify 71:2, 168:15		
	impact 159:3		
	important 49:3, 112:22,		

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 87 of 120

instead 106:14	involved 10:3, 10:15, 38:9	258:17, 259:16, 260:4, 263:6	jet 37:18, 40:8, 42:20, 55:10
institution 19:12, 23:13	involves 7:12, 7:14, 7:15	iprs 7:18, 9:22, 12:22, 19:12, 21:11, 24:14, 24:18, 25:5, 25:13, 26:13, 266:10	job 1:26
instructs 14:5	ion 55:20, 113:3, 118:20, 158:17	iron 92:21, 93:5	journal 52:11
intellectual 4:12, 4:18, 220:18	ionic 113:1, 113:2	ish 9:5, 51:3	july 68:20, 70:12, 72:5, 72:6, 75:5
inter 10:8, 10:11	ions 86:10, 86:21, 86:22, 88:13, 88:20, 90:4, 120:19, 158:10, 158:13, 158:19	island 8:14, 8:18, 33:16, 34:10, 36:20, 46:6, 46:11, 52:8, 52:10	jump 66:12
intercalatation 89:6	ipr 1:6, 1:9, 1:12, 5:9, 7:11, 7:12, 7:13, 7:14, 16:16, 17:2, 17:11, 17:19, 18:12, 20:11, 28:19, 67:15, 68:11, 68:20, 69:1, 69:19, 70:12, 71:14, 74:5, 74:12, 75:5, 79:8, 80:12, 133:9, 133:10, 135:19, 142:2, 146:21, 147:13, 147:22, 149:1, 149:12, 153:7, 165:15, 167:22, 179:19, 191:22, 192:1, 197:11, 202:19, 208:3, 209:8, 209:14, 226:2, 243:12, 243:17, 243:19, 244:13, 244:15, 245:11, 250:10, 250:11, 252:16, 252:18, 254:4, 255:18, 256:8, 257:7,	issued 58:18, 59:10	june 76:13
intercalation 89:10, 89:12		issues 255:15	K
interchangeably 97:8		it'd 173:20, 174:14	keep 55:4, 55:7, 56:6, 58:16, 65:16, 65:17, 65:22, 68:2, 68:3
interested 268:2		it'll 178:5	keeping 73:4
interfaces 38:12, 47:10, 47:11		italics 253:1	keeps 222:12
internal 164:22, 165:10, 169:5, 169:7		itself 183:12, 188:4, 195:14	kim 135:13, 136:19, 136:22, 139:19, 141:17, 143:3, 146:15, 147:11, 148:5, 178:9, 178:12, 178:17, 179:1, 181:14, 182:5, 182:10, 182:20, 182:22, 183:10, 183:14, 184:2, 184:5, 184:11, 184:12, 185:9, 185:14, 185:21, 186:9, 186:13, 187:15, 187:17, 188:2, 188:4, 188:8, 188:17, 188:20, 189:8, 189:16, 190:2, 190:3, 190:4, 190:14,
interphase 49:3, 49:5, 159:20, 159:22		january 29:19, 30:1, 30:3, 38:1, 40:10, 69:19, 74:6, 74:12, 75:16, 75:17, 180:6	
interphases 49:1, 49:2		japanese 11:10	
interruption 12:11			
invention 136:10, 163:16, 164:4, 169:20			
inventors 24:22, 221:13			
investigate 126:4			
investigated 131:5			
investigating 38:18, 43:20, 63:20			
investigations 64:1			
involve 192:18			

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 88 of 120

190:20, 190:21, 191:12, 191:16, 192:9, 192:14, 192:15, 192:20, 192:22, 193:2, 193:4, 193:12, 193:15, 193:20, 193:21, 194:4, 194:11, 194:16, 194:17, 194:21, 195:6, 195:13, 195:14, 195:16, 195:20, 196:7, 196:11, 197:4, 197:9, 199:14, 199:20, 199:21, 200:2, 200:7, 200:10, 200:15, 200:16, 200:18, 201:1, 201:4, 201:7, 201:12, 201:14, 201:19, 201:22, 202:3, 202:11, 202:16 kim's 141:13, 191:3 kind 19:8, 36:2, 41:4, 46:17, 47:14, 48:19, 53:11, 57:4, 86:9, 96:10, 99:17, 100:21, 110:13, 121:15, 131:14, 131:16, 132:19, 147:15, 182:2, 186:11, 196:18 kindergarten 136:12 kingston 8:14, 8:18 kita 263:13, 264:7, 264:11, 264:12, 264:16, 264:19, 265:1, 265:5, 265:11	kita's 265:14, 265:17 knew 106:11 knock 216:1 know 8:4, 8:7, 9:6, 13:19, 14:21, 15:12, 17:22, 18:13, 21:5, 21:13, 25:21, 27:3, 27:22, 30:15, 33:14, 35:15, 36:3, 38:7, 42:10, 44:14, 48:18, 50:16, 51:22, 52:1, 56:21, 57:4, 65:5, 71:2, 75:21, 83:6, 88:14, 97:2, 97:3, 97:4, 98:12, 99:19, 101:5, 102:9, 102:11, 103:6, 103:7, 104:6, 104:9, 104:10, 106:9, 106:15, 106:19, 109:20, 112:4, 115:2, 115:4, 115:6, 116:12, 118:3, 122:6, 122:13, 122:17, 129:6, 132:2, 134:15, 136:15, 141:15, 147:18, 151:6, 161:14, 161:21, 171:14, 173:22, 174:12, 175:15, 176:20, 187:22, 196:17, 200:15, 201:19, 209:22, 210:8, 216:22, 217:18, 217:19, 233:10, 240:15, 245:9,	248:19, 255:3, 256:2, 256:13, 261:20, 263:1 knowledge 25:2, 103:5, 104:1, 105:15, 108:1, 108:14, 108:21, 109:13, 111:12, 121:5, 130:3 known 164:7 knows 245:10 koshiishi 221:8, 221:10, 221:13, 221:18, 222:17, 222:19, 223:13, 223:14, 223:20, 223:21, 224:4, 224:6, 226:1, 226:5, 226:10, 227:5, 228:6, 228:8, 228:11, 228:21, 229:3, 243:7, 243:11, 243:16, 243:19, 244:6, 244:8, 244:13, 244:15, 250:17, 251:5, 254:15, 255:14, 256:18, 258:21 L lab 40:9, 43:5, 43:9, 108:20 labeled 22:22 laboratory 37:18, 42:21, 55:11 landon 8:11 language 138:5 large 55:1, 170:9,	170:22, 171:15, 193:22, 194:1 large-scale 101:8 larger 170:13, 171:10, 171:20, 172:4, 172:8, 173:22 last 21:6, 67:18, 101:16, 120:21, 131:9, 138:11, 163:15, 163:16, 204:1, 204:11, 204:12, 205:4, 205:12, 206:2, 206:12, 207:17, 207:22, 209:1, 226:15 lastly 218:14 late 75:18, 256:4 lately 62:8 later 65:22, 102:12, 173:8, 203:2, 247:2 law 5:20, 7:1 lawful 6:10 lawyers 22:5 layer 170:19, 171:2, 171:12, 171:16 layered 96:9, 111:18, 111:19 lead 85:20, 198:7 least 40:9, 65:6, 66:14, 130:12, 137:21, 149:2, 173:2, 180:15,
--	---	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 89 of 120

181:6, 181:21, 182:7, 182:17, 183:20, 184:14, 185:2, 185:20, 187:19, 188:10, 189:5, 191:5, 192:11, 193:5, 193:17, 194:5, 194:13, 194:22, 195:7, 195:17, 196:13, 197:6, 198:19, 199:16, 200:4, 200:12, 200:20, 201:8, 201:16, 201:20, 202:5, 202:12, 212:10, 213:1, 213:21, 219:3, 257:15, 257:22, 258:10, 258:22, 259:8, 259:18 leave 88:21, 89:2, 90:4 less 20:22, 76:20, 112:4, 122:2, 162:17, 204:3, 204:4, 204:16, 205:9, 209:4, 209:5, 213:12, 214:15, 218:11, 219:10, 219:16 let's 28:9, 30:14, 55:4, 74:2, 97:19, 105:22, 107:5, 110:7, 138:9, 163:2, 183:15, 191:18, 210:9, 225:22, 236:4, 236:6, 238:18 letting 27:22 level 105:2, 233:22, 244:21	lewis 45:19 li 39:17, 141:7, 145:4 libob 48:9 licoo2 222:22 life 159:4, 164:17 lifespan 158:22 likely 52:15, 112:5 limit 217:19 limited 1:5, 3:3, 5:7, 6:15, 7:3, 16:4, 224:20 limiting 204:2, 204:14, 207:19, 209:3 line 107:20, 136:19, 136:22, 139:2, 140:15, 141:5, 141:6, 142:14, 166:5, 166:10, 166:13, 167:3, 167:4, 167:21, 170:1, 170:14, 171:8, 173:8, 211:13, 211:16, 211:17, 212:1, 212:9, 212:21, 212:22, 214:7, 214:22, 215:1, 215:11, 215:12, 216:14, 219:1, 219:14, 245:20, 247:4, 250:17 lines 21:8, 134:2, 142:8, 143:14, 163:15, 164:1, 164:6, 164:12,	164:18, 165:3, 167:7, 168:7, 168:10, 168:15, 168:17, 168:22, 169:13, 169:17, 170:8, 172:15, 173:6, 174:22, 175:4, 176:7, 220:22, 246:13, 246:14, 247:17, 263:17 link 155:1 lipf6 38:18, 41:2, 45:4, 45:17, 47:21, 161:9 lipf6-carbonate 39:16 list 23:15, 46:3, 51:4, 56:17, 77:10, 78:2, 78:18, 79:10, 80:13, 81:16, 137:4, 137:9, 138:1, 138:4, 140:16, 143:2, 143:7, 231:9 listed 24:5, 27:7, 82:5, 82:12, 83:10, 87:6, 94:22, 105:12, 108:8, 109:9, 134:20, 137:11, 139:11, 139:18, 139:21, 140:3, 143:1, 143:6, 146:8, 146:17, 152:11, 187:9, 227:13, 227:14, 230:7 listing 23:8, 150:10 lists 135:2, 136:22, 153:2, 227:7	lith 41:2, 108:5 lithiate 87:3 lithiated 86:7, 87:3, 87:4 lithium 32:17, 32:18, 32:21, 33:4, 33:11, 35:8, 44:2, 45:18, 48:9, 48:14, 53:18, 55:20, 86:20, 86:21, 86:22, 87:13, 87:14, 87:20, 88:8, 88:11, 88:16, 88:20, 89:2, 89:16, 90:3, 90:13, 90:19, 90:22, 91:1, 91:3, 93:14, 94:19, 95:19, 95:21, 96:9, 118:9, 118:20, 119:6, 121:4, 121:6, 122:13, 122:20, 122:22, 124:4, 124:5, 124:21, 137:1, 137:10, 137:17, 137:22, 139:10, 139:11, 139:14, 139:21, 139:22, 140:2, 140:20, 141:7, 141:11, 141:18, 142:20, 143:1, 143:6, 145:4, 145:7, 145:11, 145:16, 145:20, 146:4, 146:7, 146:12, 146:16, 152:1, 152:3, 152:7, 152:10, 152:17, 153:2, 154:2, 154:6,
--	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 90 of 120

156:5, 158:10, 158:13, 192:18, 214:10, 215:5, 215:13, 216:17, 218:7, 222:22, 223:2, 224:4, 224:6, 225:16, 225:19, 242:4, 249:10, 253:14, 258:5 lithium-containi- ng 90:7, 90:11, 90:17, 91:14, 91:19, 96:13, 96:16, 99:6, 99:12, 100:7, 100:15, 101:3, 102:1, 102:18, 104:21, 108:6, 109:6, 135:3, 137:7, 137:18, 137:20, 145:2, 145:12, 145:17, 146:5, 146:14, 146:17, 150:15, 150:20, 151:5, 151:20, 152:8, 152:18, 154:3, 173:2, 225:17 lithium-ion 35:1, 35:3, 37:8, 37:10, 37:19, 47:4, 47:6, 49:4, 65:7, 85:19, 85:21, 86:1, 86:4, 86:5, 86:14, 86:18, 87:17, 88:9, 88:12, 88:18, 89:7, 89:13, 89:19, 90:1, 90:18, 91:15, 91:20, 92:9, 92:19, 93:3, 93:7, 93:11, 93:14, 93:17,	93:21, 97:14, 97:20, 110:21, 111:7, 113:7, 113:20, 114:7, 114:14, 115:21, 116:21, 117:7, 117:12, 117:17, 118:8, 118:15, 118:19, 119:2, 119:5, 120:4, 121:3, 121:6, 121:8, 121:18, 122:10, 122:14, 124:2, 124:11, 126:20, 130:1, 131:10, 132:1, 132:15, 155:3, 176:2, 176:22, 250:3 litigation 13:1, 25:5, 25:14, 53:9 little 11:1, 42:14, 43:15, 51:8, 55:12, 65:18, 66:13, 118:12, 122:7, 135:11, 154:11, 176:12, 197:21, 219:13, 221:21 llp 3:6, 3:14, 6:2 load 165:11, 169:8 located 8:15 locations 7:9, 134:1 logged 76:19 long 20:13, 21:2, 56:17, 111:1, 176:10, 177:14, 196:18 longterm 253:17, 258:8	look 22:9, 25:9, 33:14, 36:2, 37:21, 40:10, 44:11, 63:13, 65:11, 66:10, 67:4, 70:19, 70:22, 72:6, 72:21, 74:1, 76:18, 99:21, 122:16, 134:16, 143:21, 147:6, 147:21, 163:14, 166:5, 166:18, 168:18, 168:19, 182:22, 183:5, 190:2, 190:20, 199:5, 199:10, 207:14, 207:17, 208:13, 220:12, 228:18, 231:9, 236:4, 236:6, 238:18, 243:21, 245:16, 245:19, 247:20, 252:19, 260:9, 260:22 looked 18:14, 18:16, 18:19, 19:4, 19:6, 21:12, 21:14, 39:5, 42:2, 62:5, 62:8, 62:15, 62:16, 65:14, 102:10, 130:12, 138:11, 140:10, 182:13, 186:21, 195:5, 209:7, 242:2 looking 23:22, 38:11, 42:8, 44:10, 44:15, 45:2, 48:9, 48:16, 49:10, 61:14, 62:19, 63:1, 63:4, 63:6, 64:5, 64:6,	65:20, 66:3, 68:7, 69:8, 70:14, 71:11, 80:10, 104:16, 109:7, 130:19, 133:4, 133:6, 136:1, 139:20, 140:13, 140:18, 145:1, 146:3, 150:17, 153:11, 154:1, 180:16, 189:11, 203:6, 207:22, 214:22, 215:11, 217:11, 219:18, 226:4, 233:4, 233:8, 235:9, 235:12, 235:22, 238:13, 239:9, 239:11, 240:2, 244:2, 251:8, 254:11, 261:15, 262:12, 262:22, 264:14 looks 58:22, 148:4, 174:3, 178:14, 181:11, 223:15, 253:21 lose 115:14, 177:14 lost 185:4 lot 35:9, 38:11, 44:9, 48:16, 49:6, 56:3, 56:10, 60:3, 62:15, 63:1, 98:11, 101:13, 102:10, 120:22, 123:2, 124:19, 157:12, 160:18, 197:20, 198:1, 249:1 lots 82:17 love 22:5
--	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 91 of 120

low 96:19, 120:19	105:11, 105:14, 105:18, 106:7, 106:14, 106:18, 204:3, 204:15, 205:5, 205:12, 206:2, 206:10, 208:6, 209:4, 209:13, 210:22, 212:10, 212:22, 213:12, 213:15, 213:17, 213:21, 214:3	143:6, 145:5, 152:2 manufacture 35:14 manufactured 35:8 manufacturer 56:9 manufactures 42:18 manufacturing 35:13, 93:13 many 9:3, 9:17, 9:19, 10:3, 10:10, 20:6, 20:7, 20:15, 45:8, 73:2, 79:22, 101:11, 104:6, 108:8, 159:9, 203:9 marion 46:15 marked 4:6, 4:8, 5:2, 16:15, 17:1, 17:10, 26:12, 26:20, 28:19, 67:7, 67:11, 80:11, 133:7 marriage 267:22 mars 60:18 marshall 37:19, 43:19 mass 51:2 master 31:7 master's 30:21, 31:2, 31:4, 31:7, 31:9, 31:14, 31:16, 32:1, 32:16, 33:3 material 90:4, 95:17,	95:20, 96:7, 99:15, 104:17, 105:5, 106:12, 111:11, 115:3, 115:7, 118:4, 131:15, 137:8, 137:19, 139:7, 139:15, 145:13, 145:19, 146:1, 146:6, 146:19, 150:5, 152:9, 154:7, 154:8, 157:12, 193:12, 193:21, 194:1, 194:2, 201:2, 222:5, 222:10, 222:21, 224:5, 224:8, 225:18, 225:20, 255:13, 264:21 materials 21:16, 58:7, 58:10, 89:17, 90:15, 95:10, 95:13, 96:3, 100:10, 101:8, 103:7, 108:19, 137:12, 138:4, 139:4, 139:5, 144:13, 151:16, 151:18, 155:17, 156:9, 157:3, 157:21, 172:9, 192:16, 201:3, 222:19, 223:13, 223:16, 223:17, 223:21, 224:1, 225:20, 251:17, 260:2, 262:1 matter 5:7, 13:11, 15:6, 16:1, 22:10, 24:10, 24:14, 69:22, 74:17, 81:11, 117:6, 138:10, 143:5, 148:11, 148:14, 218:17,
lower 121:14, 221:17			
lowering 161:17, 253:16, 258:7			
M			
m1 211:14, 212:2, 214:10, 215:5, 215:13, 216:17	main 18:11, 21:14, 86:3, 91:22, 92:2, 118:14, 121:2, 121:4, 121:17, 129:6, 155:3, 158:7, 265:18 major 30:8 make 11:1, 48:12, 50:17, 50:20, 66:14, 73:8, 73:18, 100:1, 120:5, 120:11, 134:1, 135:6, 135:11, 147:7, 177:18, 185:16, 224:17, 256:5 makes 53:18, 55:20, 96:8, 160:10 making 60:14, 112:4, 157:11, 250:4 managing 43:8 manganese 90:19, 91:1, 91:3, 91:4, 92:21, 93:5, 94:22, 95:4, 95:8, 95:17, 95:19, 95:21, 142:20, 143:1,		
m2 204:3, 204:15, 206:11, 209:4, 212:10, 212:22, 213:21, 214:10, 215:5, 215:13, 216:17			
m3 214:7, 214:9, 214:11, 214:13, 214:16, 215:1, 215:4, 215:6, 215:8, 215:9, 215:11, 215:12, 215:15, 215:17, 216:14, 216:16, 216:18, 216:20, 217:12, 217:14, 217:16, 219:1, 219:3, 219:7, 219:14, 219:15, 220:3, 220:8, 220:10			
m5 218:2, 218:3			
m6 218:4, 218:6, 218:9, 218:11			
made 30:3, 84:10, 110:20, 111:5, 184:9, 249:21			
mag 213:16			
magnesium 102:5, 105:7,			

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 92 of 120

256:20, 268:3 matters 66:10, 76:4 maxell 1:12, 3:12, 5:8, 6:3, 12:20, 13:2, 13:5, 16:7, 16:8, 24:18, 25:4, 25:19, 267:14 maxwell 55:19 maybe 21:7, 51:3, 57:16, 58:13, 66:6, 73:3, 73:4, 75:22, 99:18, 102:8, 136:11, 154:11, 221:21 mayumi 221:13 mcmb 44:2 means 45:15, 90:3, 174:11, 219:11, 234:21 meant 45:5, 240:11 measurements 235:2 mec 230:6 mechanism 156:10, 158:4 mechanisms 89:15 media 5:5 medications 15:16 meet 19:17, 19:20, 20:7, 20:15 meeting 21:4 meetings 20:1, 20:20,	35:10, 37:14, 57:15 meets 189:17 melting 121:14 mention 200:7, 263:1, 263:3, 264:18, 265:9, 265:10, 265:11, 265:12, 265:18, 265:19 mentioned 13:1, 39:12, 105:7, 116:16, 116:18, 125:8, 127:2, 184:6, 193:12, 195:21, 196:3 mentions 173:12, 200:6, 202:8 messaging 15:5 met 20:6, 50:21 metal 53:18, 86:7, 87:4, 90:7, 90:11, 90:13, 90:17, 91:6, 91:9, 91:10, 91:14, 91:20, 92:2, 92:11, 94:9, 95:1, 95:4, 95:9, 96:1, 96:6, 96:9, 96:13, 96:17, 96:20, 99:7, 99:13, 100:8, 100:16, 100:18, 101:4, 101:22, 102:2, 102:19, 104:21, 108:6, 109:6, 111:18, 111:19, 113:12, 114:10, 116:5, 116:10,	116:13, 116:15, 117:2, 135:3, 137:7, 137:10, 137:18, 137:20, 140:1, 145:3, 145:12, 145:18, 146:5, 146:15, 146:18, 150:15, 150:20, 151:5, 151:21, 152:8, 152:19, 154:4, 173:3, 212:10, 213:1, 213:5, 213:8, 213:22, 214:10, 225:17 metallic 161:7, 242:11 metals 91:10, 91:13, 91:19, 92:3, 92:8, 92:12, 92:19, 93:2, 93:16, 93:21, 94:15, 97:16, 97:21, 98:1, 98:3, 98:7, 98:17, 99:3, 99:8, 99:14, 100:2, 100:4, 101:10, 101:11, 101:13, 101:16, 101:18, 104:7, 108:3, 108:8, 117:2, 118:3 meth 230:9 method 100:10 methyll 227:6, 227:9, 227:11, 227:14, 228:10, 228:12, 229:2, 229:4, 230:6, 230:9, 230:12, 230:14, 230:15, 230:16 micron 223:2	microns 145:6, 145:9, 145:21, 146:9, 152:3, 152:5, 152:11, 153:3 middle 134:3, 174:12, 227:16, 228:18 might 14:3, 25:7, 27:7, 36:1, 122:1, 133:2, 135:10, 156:10, 157:2, 240:10 military 35:9, 42:19, 60:7, 60:10, 60:22, 94:1, 94:16 million 56:6, 56:13 mind 28:8, 46:9, 244:2 mine 80:18 minute 167:13, 178:5 minutes 23:14, 41:21, 125:8 miranda 3:5, 5:22 mislead 208:12 misleading 192:17 missing 27:7, 179:21 misstatement 256:5 mistake 72:15 mixed 91:3, 228:9 mixture 170:19, 171:2, 171:12, 171:14,
--	---	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 93 of 120

171:16, 172:18, 173:2, 222:21 modification 58:7 modify 159:10, 159:20 molecule 125:14, 125:15, 126:10, 127:18, 128:11, 129:19, 181:6, 181:21, 182:8, 182:17, 183:20, 184:15, 187:20, 188:11, 189:6, 191:6, 192:11, 193:6, 193:18, 194:6, 194:13, 195:1, 195:8, 195:18, 196:14, 197:7, 198:19, 199:16, 200:4, 200:13, 200:21, 201:9, 201:17, 202:5, 202:13, 257:16, 257:22, 259:1, 259:9, 259:19 molecules 126:16 moment 73:15, 92:10, 115:7 moments 174:19 money 46:17, 48:12 monitor 5:12 mononitrile 126:7, 126:9, 129:4, 238:4, 238:11, 238:14, 238:17, 240:7, 248:7, 249:6, 249:16, 263:2, 265:13 mononitriles 126:13, 126:19,	127:1, 129:11, 248:3, 248:4 monotrial 129:3 month 42:17 months 25:7 more 19:5, 20:21, 36:2, 38:8, 38:11, 51:8, 72:7, 94:18, 94:19, 96:9, 98:2, 98:4, 102:16, 107:20, 110:1, 122:4, 135:7, 147:7, 154:11, 166:18, 168:19, 185:16, 191:1, 205:22, 240:17, 244:20 morning 5:18, 6:1, 6:17, 6:18 morphed 41:5 most 12:4, 12:13, 18:17, 22:15, 49:3, 52:15, 53:10, 54:5, 54:8, 54:10, 58:5, 58:9, 87:12, 88:1, 93:18, 96:10, 103:5, 103:18, 103:22, 111:12, 111:17, 121:8, 122:11, 122:13, 124:7, 128:13, 132:8, 132:18, 160:18, 176:2 mostly 37:12, 86:7 mot 265:16 motivated 181:12, 192:18	motivation 185:14, 188:1, 188:18, 188:20, 191:2, 265:16 motivations 191:2 move 158:10, 158:13, 228:17 movement 158:17 moving 203:2 much 13:8, 38:8, 53:8, 63:8, 75:19, 76:16, 98:14, 118:10, 119:7, 121:10, 161:13, 210:12, 249:14 multiple 95:18, 112:12, 113:13, 128:17, 133:2 must 14:4, 43:21 myself 43:7, 46:14, 57:14 mz 219:9 N n-o-h 261:7, 261:17, 262:13 name 6:22, 8:10, 8:11, 18:13, 20:3 names 127:4 nasa 37:18, 42:12, 42:15, 42:19, 42:22, 43:2, 43:11, 55:10,	60:17, 94:12 nasa's 40:8, 42:20 national 4:12, 4:18, 220:17 natural 19:7 nc 3:9 nca 87:14, 91:2, 99:4, 99:15, 99:20, 100:20, 102:3, 104:17, 105:3, 105:4, 106:12, 115:3, 115:12 ncm 95:20 ncms 91:4 near 144:9, 223:5 nearly 160:4 necessarily 61:1, 115:5 necessary 27:17 need 14:20, 27:13, 28:2, 30:11, 72:15, 121:7, 188:13, 210:2 negishi 263:12, 263:17, 265:4 negishi's 265:17 never 53:8 new 48:10 next 44:5, 135:19, 142:4, 172:14, 222:13, 226:21,
---	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 94 of 120

227:1, 229:11, 232:21 nicad 85:20 nice 52:2 nickel 44:3, 87:15, 91:1, 91:2, 91:4, 92:21, 93:5, 93:19, 94:3, 94:13, 94:14, 95:21, 96:1, 99:4, 99:20, 104:18, 107:21, 137:22, 139:10, 139:11, 139:14, 139:21, 140:2, 140:20, 140:21, 141:7, 141:12, 141:18, 141:20, 141:21, 145:5, 152:1, 152:7, 222:22, 223:3 nickel's 108:1 nickel-based 96:3 nickel-metal 85:20 nine 58:15 nitrite 125:13, 125:18, 126:16, 127:10, 127:18, 127:20, 128:3, 128:7, 128:10, 128:17, 128:18, 128:19, 128:22, 179:3, 181:6, 181:21, 182:7, 182:17, 183:20, 184:14, 185:2, 185:20, 187:19, 188:10, 189:5, 191:5, 192:11, 193:6,	193:17, 194:6, 194:13, 195:1, 195:7, 195:18, 196:13, 197:6, 198:19, 199:16, 200:4, 200:12, 200:20, 201:8, 201:16, 201:21, 202:5, 202:12, 232:7, 240:9, 246:15, 253:13, 257:15, 257:22, 258:3, 258:11, 259:1, 259:8, 259:19 nitrite's 125:14 nitrites 62:2, 62:10, 63:6, 63:13, 63:20, 64:2, 64:7, 64:9, 122:19, 125:9, 126:1, 179:3 nixon 224:19 nob 156:10, 158:5 nobody 8:21, 125:5 nods 14:16 noh 153:9, 153:10, 153:11, 153:18, 154:4, 261:7, 261:14, 261:17, 261:22, 262:1, 262:2, 262:13 noh's 261:13, 263:4 nomen 237:6 non 101:18 non-electrically 131:15 non-transition 99:8, 99:14,	100:2, 101:18, 101:21, 102:7 nonaq 188:11 nonaqueous 119:12, 119:14, 181:7, 181:22, 182:8, 182:18, 183:21, 184:15, 187:20, 188:11, 189:6, 191:6, 192:12, 193:6, 193:18, 194:6, 194:14, 195:1, 195:10, 195:18, 196:14, 197:7, 198:20, 199:17, 200:5, 200:13, 200:21, 201:9, 201:17, 202:6, 202:13, 229:22, 241:1, 245:2, 245:8, 246:12, 246:18, 247:6, 250:18, 251:2, 251:11, 251:20, 252:10, 252:13, 253:10, 253:20, 254:16, 255:5, 255:20, 256:9, 256:14, 256:15, 257:8, 257:12, 257:16, 258:1, 259:1, 259:9, 259:19, 261:2, 261:8, 261:18, 262:14, 263:18, 264:8, 264:17 nos 42:5 notary 2:9, 267:1, 267:4 notation 174:5, 218:1, 219:2 note 7:6	notebook 179:18 notes 76:19, 265:22 nothing 6:12 notice 2:8 noticed 230:13 novolyte 55:18 number 117:5, 134:4, 134:12, 136:19, 143:22, 220:17, 221:2, 221:12 numbered 22:16, 22:17 numbering 221:16 numbers 143:19, 176:3, 236:3, 240:16 O oath 13:14 object 14:3 objection 83:8, 84:2, 85:2, 89:8, 103:10, 111:8, 117:19, 161:19, 171:3, 189:20, 191:10, 204:8, 212:18, 213:10 objectives 101:7 obtain 156:17, 156:22, 157:8, 157:16 obvi 265:15, 265:16 obviating 265:16 obviously 183:4
---	---	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 95 of 120

occur 76:13 occurring 47:11, 112:5 odd 147:16 offer 248:7, 249:4, 249:17 offers 265:13 office 1:1, 5:9, 8:17, 209:20, 216:9 oh 18:18, 26:17, 27:11, 28:6, 51:13, 55:22, 72:11, 72:12, 76:8, 123:20, 162:14, 197:16, 197:18, 203:4, 208:19, 210:3, 211:18, 222:12, 238:6, 238:8, 260:11, 260:13, 262:8 ohning 3:22, 5:13 once 12:3, 29:11, 33:2, 36:2, 40:22, 43:14, 47:20, 62:22, 64:17, 71:11, 75:21, 76:18, 84:15, 87:18, 99:9, 100:17, 101:5, 102:9, 102:11, 102:14, 108:19, 109:7, 109:19, 111:9, 112:18, 115:3, 117:8, 117:14, 126:21, 127:11, 129:14, 131:4, 157:18, 160:9, 161:12, 168:18,	177:13, 182:9, 185:22, 187:21, 188:13, 191:11, 193:19, 194:15, 195:13, 196:17, 197:8, 199:4, 199:18, 200:6, 201:11, 201:18, 201:21, 202:7, 202:15, 223:22, 229:6, 234:12, 234:21, 237:6, 247:20, 251:4, 255:22, 256:11, 256:17, 261:20 one 10:16, 10:19, 14:8, 18:11, 19:6, 21:1, 21:12, 21:14, 26:17, 39:4, 41:3, 41:21, 44:5, 44:13, 52:2, 55:16, 57:22, 58:1, 61:19, 63:3, 63:17, 85:16, 85:19, 89:15, 100:7, 100:11, 101:6, 105:11, 108:2, 108:7, 108:8, 111:18, 112:12, 118:14, 122:21, 123:1, 128:14, 132:17, 133:4, 137:21, 139:9, 139:22, 140:19, 141:8, 141:19, 145:4, 145:7, 146:4, 146:13, 147:7, 150:4, 150:19, 151:4, 152:18, 154:3, 157:4, 159:11, 162:16, 162:18, 167:17, 170:13, 171:14, 173:21, 175:13,	175:14, 179:6, 179:20, 179:21, 180:5, 197:14, 197:16, 198:3, 205:21, 208:10, 210:7, 212:10, 213:1, 213:22, 216:2, 219:3, 224:7, 225:19, 226:5, 227:9, 229:11, 231:8, 233:11, 233:17, 234:13, 240:17, 240:18, 248:22, 260:11, 262:5, 262:7, 262:16 one's 175:22, 176:1, 226:16 ones 18:11, 39:7, 41:22, 44:10, 54:22, 56:7, 61:19, 61:20, 92:11, 92:22, 93:4, 122:17, 137:10 only 14:8, 19:5, 21:19, 26:17, 30:8, 60:21, 121:22, 189:14, 196:2, 200:6, 202:7, 206:22, 253:22, 258:12 oops 69:3 open 74:3, 216:4, 216:7 opening 74:1 opine 194:3 opined 189:14 opinion 82:14, 105:17,	106:6, 106:16, 108:17, 109:1, 110:2, 110:3, 110:19, 114:12, 176:5, 187:17, 188:8, 189:3, 189:7, 189:18, 190:4, 190:13, 191:15, 192:9, 193:15, 233:19, 234:9 opinion's 190:13 opinions 77:12, 78:4, 78:19, 79:12, 80:14, 81:18, 82:6, 183:7, 183:10, 189:2, 189:13, 190:8, 190:10 opposed 40:16, 234:17, 234:22 opposing 18:5 optimize 157:3 option 142:22 optional 215:9, 215:18, 216:22, 217:19, 218:13, 219:12, 219:17 optodot 51:2, 53:12, 55:20, 55:21, 58:1, 58:2 order 18:12, 19:11, 28:1, 116:12, 236:3 ordinary 185:1 organic 31:15, 62:21, 63:3, 64:16,
---	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 96 of 120

64:22, 65:4, 125:15, 126:10, 126:15, 127:11, 129:19, 248:9, 248:14, 249:4, 249:18, 264:19 original 72:3 originally 25:10, 29:14, 41:2, 41:4, 53:13, 59:5 other 10:22, 13:2, 15:19, 18:6, 18:8, 21:15, 21:16, 22:1, 23:13, 27:2, 30:9, 30:10, 39:7, 42:3, 46:18, 48:17, 52:6, 52:7, 52:18, 53:19, 54:19, 57:20, 59:9, 61:2, 61:9, 77:14, 78:6, 78:22, 79:15, 81:5, 81:8, 81:20, 83:4, 83:22, 86:8, 88:6, 95:6, 96:20, 101:11, 105:4, 124:22, 144:6, 145:7, 147:7, 158:19, 159:1, 159:8, 160:19, 162:21, 171:19, 172:3, 172:7, 175:20, 176:11, 184:22, 185:18, 186:6, 186:7, 186:8, 186:9, 186:17, 186:21, 187:4, 213:1, 213:5, 213:7, 213:22, 214:9, 215:4, 215:13,	216:16, 218:6, 227:9, 233:18, 234:13, 247:16, 249:1, 253:18 others 15:6, 90:21, 90:22, 127:7, 158:17, 160:7, 161:17, 162:3 otherwise 13:20, 14:5, 27:17, 268:2 out 15:10, 28:17, 48:13, 89:16, 113:3, 131:12, 155:1, 189:1, 189:12, 189:17, 190:9 outcome 268:3 outside 12:22, 63:5, 94:15, 94:17, 94:19, 122:15, 189:9, 206:20 over 7:7, 12:7, 25:10, 50:20, 56:12, 240:12 over-flipped 140:6 overall 118:4, 159:3, 159:10 overcharging 111:22 overlap 70:17, 70:21, 71:10 owner 1:14, 3:12, 6:3, 11:14, 11:20, 16:7 owner's 11:17, 24:13 oxalato 48:14	oxalato-type 48:17 oxidation 49:16, 92:4, 95:18, 113:13, 113:18, 114:9, 116:16, 116:19, 116:20, 117:1, 117:5, 117:9 oxide 44:3, 86:7, 87:13, 90:8, 90:11, 90:13, 90:19, 90:20, 91:1, 91:14, 91:20, 92:2, 92:3, 92:11, 94:19, 95:19, 95:21, 96:20, 99:7, 99:13, 100:8, 104:21, 109:6, 111:18, 116:6, 116:10, 116:13, 116:15, 135:3, 137:1, 137:7, 137:18, 137:22, 139:10, 139:11, 139:14, 139:21, 140:1, 140:2, 140:21, 141:7, 141:12, 142:20, 143:1, 143:6, 145:5, 145:8, 145:11, 145:13, 145:17, 145:18, 145:20, 146:4, 146:7, 146:13, 146:17, 146:18, 150:20, 151:5, 152:2, 152:4, 152:7, 152:8, 152:10, 152:18, 153:2, 154:3, 154:6, 222:22, 223:3, 224:4, 224:6, 225:16, 225:17, 225:19, 242:5	oxides 87:4, 90:17, 96:9, 96:13, 96:17, 100:16, 101:4, 102:2, 102:19, 108:6, 111:19, 137:10, 137:20, 145:3, 146:5, 146:15, 150:15, 151:21, 152:19, 154:4, 173:3 oxygen 111:20 P pack 230:19 page 4:2, 4:8, 23:5, 23:7, 24:1, 39:11, 56:11, 58:21, 67:17, 67:18, 67:21, 68:13, 69:9, 69:12, 70:2, 70:5, 71:16, 74:1, 74:5, 74:19, 74:21, 77:8, 77:21, 78:13, 78:16, 79:7, 79:20, 81:14, 83:19, 134:2, 134:3, 134:8, 134:10, 135:9, 135:17, 136:4, 138:12, 138:15, 139:3, 140:3, 140:8, 143:10, 143:14, 143:18, 143:19, 143:21, 144:3, 144:8, 144:16, 146:2, 147:2, 147:5, 150:2, 153:18, 163:12, 180:12, 185:8, 194:20, 196:22,
--	--	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 97 of 120

203:15, 211:8, 221:12, 221:18, 221:19, 221:20, 222:13, 222:18, 223:4, 223:5, 223:6, 223:12, 226:9, 226:11, 227:1, 227:15, 227:16, 228:8, 228:17, 228:19, 232:21, 250:1, 251:9, 261:1 pages 1:27, 73:2, 135:11, 177:20, 188:16, 189:11, 190:16, 203:6, 203:9, 223:20 paige 3:13, 6:2, 19:21, 266:11 paige's 20:2 paper 39:8, 39:13, 44:17, 61:15, 61:21, 62:2, 62:4, 62:7, 65:12, 108:15, 133:18 papers 29:14, 30:6, 44:12, 45:16, 61:13, 61:15, 64:9, 65:6, 65:10, 82:17, 99:22, 109:21, 125:5 par 171:10, 204:12 paragraphs 186:10, 187:16, 187:22, 188:8, 188:15, 203:2, 203:4, 203:7, 226:15, 229:15, 229:16, 230:3, 237:9, 237:16,	251:9, 251:15, 251:18, 251:19, 252:8, 253:4, 253:8, 255:12, 255:19, 256:1, 256:7, 257:3, 257:6, 257:10, 257:13, 257:19, 258:2, 259:5, 259:15, 259:21, 260:9, 261:10, 261:16, 261:21, 262:6, 262:12, 263:1, 263:8, 264:2, 264:5, 264:10, 264:14, 264:15, 264:18, 265:5, 265:8 paren 135:19 parentheses 174:2, 185:12, 220:17 part 36:12, 56:21, 82:6, 82:14, 96:6, 96:10, 108:9, 145:21, 152:11 partes 10:8, 10:11 partic 20:14 participate 113:6, 113:11, 113:16, 113:21, 114:5 particle 111:13, 111:16, 112:8, 112:16, 112:21, 113:3, 115:10, 117:3, 145:6, 145:8, 145:21, 146:8, 152:2, 152:4, 153:3, 170:9, 170:12, 171:10, 171:20, 172:4,	172:8, 173:4, 173:9, 173:14, 173:16, 173:17, 174:15 particles 35:15, 98:21, 99:2, 103:20, 170:22, 171:15, 173:19, 223:2 particular 20:16, 127:4, 187:8, 240:3, 247:1, 251:5 particularly 49:17 parties 7:6, 7:8, 7:16, 7:20, 10:14, 267:21, 268:1 partnership 46:4, 46:11, 46:22 parts 49:10, 49:13, 50:2, 132:17 party 267:14 pass 266:11, 266:12 passivate 161:9 passivation 164:19, 164:21, 165:5, 165:8, 169:1, 169:3 pat 247:15 patents 12:15, 17:13, 18:4, 18:15, 19:1, 24:15, 24:19, 24:22, 58:12, 58:20, 59:1, 59:7, 59:9, 84:20, 102:5, 102:20, 105:10, 108:9, 109:8, 112:13,	112:19, 122:18, 126:22, 174:8 paths 251:17 pause 28:12, 28:16 peabody 224:19 pending 14:22, 58:19 pennsylvania 2:10, 267:5 people 46:18, 98:11, 98:13, 101:13, 102:5, 102:6, 102:10, 105:4, 106:10, 110:13, 122:16, 176:21 people's 220:19, 226:5 people's 4:19 percent 99:16, 99:20, 99:21, 100:20, 104:18, 104:19, 105:2, 115:6, 115:12, 115:14, 140:21, 141:12, 141:13, 141:19, 141:21, 174:11, 230:22, 235:8, 235:10, 235:15, 236:1, 236:20, 237:1, 237:21, 238:2, 239:14, 239:18, 240:13 perfect 135:9 performance 41:15, 48:1, 48:3, 50:4, 120:20, 120:21, 125:21, 159:5 perhaps 110:14 period 34:16, 34:21,
--	---	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 98 of 120

37:2, 38:3, 40:2, 40:13, 47:3, 47:6, 47:17, 98:6, 98:18, 99:3, 100:5 periodic 91:11, 91:12 person 14:8, 176:6, 177:11, 185:1, 185:18 perspective 97:10 petition 185:13 petitioner 1:7, 3:2, 5:19, 6:14, 7:2, 11:15, 11:21, 16:3, 195:4, 195:5 petitioner's 12:1 petitions 21:11 pf5 45:19 ph 1:19, 2:1, 4:2, 4:25, 4:27, 4:30, 5:7, 6:9, 31:3, 32:4, 32:8, 32:10, 33:1, 33:2, 33:6, 33:9, 33:17, 33:20, 68:19, 69:18, 70:11, 74:11, 75:4, 266:16, 267:7, 267:17 phase 155:10, 155:20 phos 39:6 phosphate 48:15 phosphates 42:3, 87:4	phosphazenes 39:5, 42:1 phosphoramides 42:3 phrasing 157:11 physically 7:9, 8:15 place 5:15, 12:8, 161:4 places 25:22 planet 5:14, 6:5 please 5:16, 6:7, 8:9, 13:19, 14:15, 14:21, 14:22, 22:10, 67:17, 68:10, 69:9, 71:17, 79:21, 81:10, 85:1, 85:3, 100:3, 106:1, 134:14, 136:2, 136:6, 136:14, 138:21, 142:9, 142:11, 143:10, 143:21, 144:21, 149:1, 149:5, 150:7, 151:9, 151:11, 153:20, 162:8, 163:11, 163:14, 163:20, 163:21, 165:14, 167:10, 167:20, 168:6, 169:11, 169:13, 170:4, 172:20, 178:4, 178:16, 178:19, 180:9, 180:22, 198:11, 199:10, 203:20, 204:11, 207:15, 208:22, 211:4, 215:19, 217:1, 217:7, 217:20, 218:21, 221:17,	222:8, 225:8, 225:12, 228:3, 229:14, 231:15, 231:22, 236:13, 237:11, 237:17, 238:19, 245:17, 246:1, 250:13, 259:12, 262:20, 263:11 plus 213:12, 214:3 point 48:18, 77:20, 102:4, 121:14, 134:9, 242:17 points 53:1 poly 132:4 polymers 34:6, 59:5 polyolefin 132:8 polyolefins 132:3 polypropylene 132:3, 132:9, 132:18 pool 46:12 porous 131:16 portion 7:21 posita 180:19, 181:5, 181:12, 181:20, 182:6, 182:16, 182:20, 183:19, 184:13, 187:18, 188:9, 189:4, 189:16, 191:4, 192:10, 192:14, 193:4, 193:16, 194:4, 194:12, 194:21, 195:5, 195:11, 195:16, 196:12, 197:5,	198:18, 199:15, 200:3, 200:11, 200:19, 201:7, 201:15, 202:4, 202:11, 257:14, 257:21, 258:21, 259:7, 259:17, 261:8, 265:12 posita's 192:17 position 27:9, 27:11, 27:15, 27:21, 54:3 positions 52:7 positive 40:10, 94:21, 154:7, 165:6, 165:9, 169:4, 170:1, 170:18, 171:1, 171:11, 171:16, 222:1, 225:20, 240:21, 240:22, 241:6, 241:22, 245:2, 245:7, 246:11, 246:16, 246:17, 247:5, 264:21 possible 29:9 possibly 114:8, 119:9 post-doc 34:4, 34:8 post-doctoral 33:21 potassium 102:8 potential 49:16, 107:19, 109:10, 112:6, 113:18, 123:15, 175:8, 177:10 potentially 45:9, 61:11, 104:11, 114:2, 117:9, 137:11,
---	---	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 99 of 120

160:2 potentials 125:21 power 60:18 prc 4:13 predom 41:1 predominantly 47:20, 132:3, 132:4 prefer 73:10 preferably 226:12 preferred 138:19, 140:12 preparation 19:18, 20:22, 21:9, 21:18, 23:17, 24:7, 75:8, 76:3, 84:4, 84:11, 144:10, 145:22, 146:9, 151:18, 152:12, 153:4, 229:21, 232:17 preparations 151:15 prepare 18:2, 75:11, 75:15, 76:5, 76:10, 152:12 preparing 20:14, 20:16, 21:3, 23:10, 75:20, 76:17, 77:15, 78:7, 79:1, 79:16, 81:6, 81:21, 84:1 presence 241:19 present 3:21, 19:22, 51:5, 121:11, 136:9, 214:11,	214:16, 215:7, 215:15, 216:18, 217:14, 218:9, 219:7, 220:8 presented 19:7 presumably 115:11 pretty 19:16, 54:15, 63:8, 118:10, 119:7, 121:10, 161:13, 168:18, 210:12, 240:15 prevent 160:13, 240:22, 246:17, 247:18 prevented 247:8 prevents 247:12 previous 10:10, 199:19, 228:14, 251:9 previously 4:6, 4:8, 5:2, 126:3, 128:22, 130:11 pri 64:18 primarily 34:5, 35:5, 38:6, 38:10, 38:17, 43:14, 47:8, 57:3, 99:4, 120:1, 121:9 primary 18:18, 35:5, 54:22, 62:13, 62:17, 63:4, 63:16, 63:17, 64:19, 83:11, 85:14, 85:15, 86:5, 86:17, 86:21, 88:7, 92:11, 92:22, 94:12, 101:7,	108:3, 110:12, 121:21, 158:12, 172:12 print 72:19, 73:1 printed 28:1, 28:4 prior 18:16, 20:8, 21:17, 21:20, 43:7, 63:5, 63:8, 63:13, 64:14, 64:19, 108:9, 109:8, 112:19, 126:22, 261:15 probab 75:17 probably 21:6, 30:8, 31:9, 35:11, 35:22, 65:5, 65:12, 65:18, 65:20, 66:5, 93:4, 177:3, 234:7 problem 11:12, 28:9, 50:7, 73:22, 80:6, 164:7, 164:10, 164:12, 165:4, 169:9, 177:22, 252:7 problematic 114:11 problems 46:14, 111:19, 157:20, 158:2 procedures 232:10 proceed 13:11, 18:12 proceeding 8:2, 10:8, 10:12, 66:20, 66:21, 69:2, 71:21, 135:14 proceedings 7:12, 7:18,	10:15, 28:20, 29:5, 59:19, 75:9, 107:10, 109:9, 147:20, 154:18, 210:17, 243:2, 244:9, 266:5 process 100:7, 100:11, 112:4 product 101:8 production 101:8 products 35:7, 36:7, 37:15, 42:18, 43:1, 49:20 profe 52:1 professional 267:4 professor 34:13, 34:14, 34:17, 34:22, 35:4, 36:19, 37:2, 37:7, 37:11, 37:17, 50:17, 51:5, 51:7, 51:10, 51:14, 51:15, 52:2, 52:8, 52:9 professors 124:22 program 31:19, 32:1, 32:4, 32:8, 32:10, 32:12, 33:1, 33:2 project 125:3 projects 101:9, 125:1 promoted 51:9 pronounce 6:19 propane 65:14
--	---	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 100 of 120

properties 114:17, 114:19, 115:1, 117:10, 157:3 property 4:12, 4:18, 111:11, 220:18 propionitrile 237:21, 238:1, 238:2, 238:3, 238:4 proposal 46:15 propulsion 37:18, 40:9, 42:20, 55:10 propylene 227:7 protect 159:12, 159:15, 161:7 protecting 160:7 protective 264:20 provide 42:14, 49:1, 86:13, 88:9, 114:21, 118:19, 123:5, 123:8, 123:11, 125:18, 150:18, 151:3, 159:7, 180:17, 180:19, 181:4, 181:18, 182:15, 183:8, 183:11, 183:18, 184:13, 185:18, 188:9, 189:4, 198:17, 258:21 provided 29:22, 46:12, 67:14, 110:11, 127:1, 182:20, 183:9, 203:16 provides 131:17, 139:4, 151:14, 181:19,	182:5, 184:22, 187:18, 189:15, 189:16, 192:9, 193:4, 193:16, 194:4, 194:11, 194:21, 195:16, 196:12, 197:5, 199:14, 200:2, 200:11, 200:19, 201:7, 201:15, 202:3, 202:11, 257:14, 257:20, 259:7, 259:17, 261:7 providing 115:9 pub 135:19, 153:12 public 2:9, 58:14, 267:1, 267:4 publication 4:17, 4:24, 149:18, 224:14 publications 43:16 publish 44:5, 64:13, 108:15, 129:14 published 29:14, 30:6, 39:8, 39:12, 64:9, 65:5, 65:10, 66:4, 125:5, 126:5 puget 30:18, 31:20, 32:12 pull 28:2 purchasing 41:8, 41:18 purpose 67:9, 73:4, 86:17, 87:16, 88:11, 91:18, 92:2, 116:8 purposes 45:11, 68:2,	73:4, 101:9 pursuant 2:8 pursue 180:20, 181:5, 181:20, 182:6, 182:16, 182:21, 183:19, 184:14, 185:2, 185:19, 187:18, 188:10, 189:4, 191:5, 192:10, 193:5, 193:16, 194:5, 194:12, 194:22, 195:17, 196:13, 197:5, 198:18, 199:15, 200:3, 200:11, 200:19, 201:8, 201:15, 202:4, 202:12, 257:15, 257:21, 258:10, 258:22, 259:7, 259:18 put 17:20, 17:21, 27:13, 28:18, 41:6, 46:15, 57:1, 72:16 putting 116:15, 117:3, 186:22 pyridine 42:2 Q qua 114:3 question 13:18, 13:21, 14:11, 14:22, 15:1, 61:7, 71:5, 82:7, 85:4, 86:15, 88:10, 91:16, 92:15, 94:6, 101:17, 103:12, 105:20, 106:2, 111:1, 112:19,	116:8, 120:7, 120:14, 126:15, 147:15, 159:17, 172:1, 172:5, 185:7, 186:1, 197:3, 206:17, 212:19, 241:2, 241:11, 248:11, 248:18, 252:5, 255:22, 259:13 question's 157:11 questions 7:2, 7:22, 13:14, 14:3, 14:4, 14:9, 15:21, 107:20, 148:10, 148:12, 190:2, 190:19, 190:21, 196:18, 209:12, 210:7, 244:14, 244:19, 266:9 quick 210:7, 242:17, 266:1 quickly 21:13, 28:8, 30:14, 71:11, 212:6, 216:4, 244:3, 265:22 quite 48:8, 48:9, 57:19, 196:19 R range 113:13, 113:18, 122:16, 141:22, 206:20, 213:18, 213:21 rather 210:8 ratios 223:17, 224:2 rd 76:13 reach 15:10
--	--	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 101 of 120

react 160:2 reaction 43:21, 45:22, 113:7, 113:11, 113:16, 113:22, 114:6, 160:14, 247:5, 247:8 reactions 47:10, 160:4 read 18:4, 18:14, 19:8, 21:10, 21:20, 51:5, 82:16, 82:19, 105:11, 136:14, 138:6, 163:18, 170:4, 171:22, 204:10, 212:5, 217:16, 222:14, 236:15, 246:4, 247:3, 251:12, 259:10, 262:17, 263:10, 264:2 reading 21:7, 112:18, 192:17, 194:9, 197:1, 213:19, 252:6 ready 154:12 really 20:18, 21:20, 45:19, 48:19, 51:18, 53:8, 58:8, 62:12, 82:15, 88:10, 97:22, 98:8, 100:18, 103:6, 103:11, 106:9, 106:19, 112:1, 120:8, 123:12, 129:8, 157:11, 172:10, 183:1, 185:22, 186:1, 188:14, 197:8, 241:20, 251:6, 253:22, 256:12,	258:12, 259:21 reason 15:19, 105:3, 123:13, 180:20, 181:5, 181:20, 182:6, 182:16, 182:21, 183:19, 184:13, 185:1, 185:19, 187:18, 188:9, 189:4, 191:4, 192:10, 193:5, 193:16, 194:5, 194:12, 194:22, 195:17, 196:6, 196:12, 197:5, 198:18, 199:15, 200:3, 200:11, 200:19, 201:7, 201:15, 202:4, 202:11, 257:14, 257:21, 258:10, 258:22, 259:7, 259:18 reasonably 106:13 reasons 110:12 receive 30:16 received 30:17, 56:12 receiving 33:17, 33:20 recent 12:4, 12:13 recently 13:10, 19:5, 102:13 recess 59:18, 107:9, 154:17, 210:16, 243:1, 266:4 rechargeable 85:11, 85:15 recited 213:18, 219:21 recliner 149:3	recognize 28:21, 67:13, 178:12, 221:7, 221:9, 224:11 recollection 70:20, 96:8, 187:1, 247:22 recommended 64:6 record 7:6, 8:10, 28:8, 28:11, 28:12, 28:14, 59:17, 59:21, 67:10, 100:1, 107:6, 107:8, 107:12, 129:16, 131:12, 154:16, 154:20, 210:10, 210:15, 210:19, 242:22, 243:4, 266:1, 266:3, 266:7, 266:17, 266:18, 267:11 reduce 160:13, 160:21, 242:11 refer 16:3, 16:6, 16:10, 17:13, 68:3, 68:16, 69:15, 70:8, 74:8, 75:1, 253:4 referen 182:6 reference 42:4, 132:22, 134:11, 134:19, 135:13, 136:2, 138:10, 140:8, 141:17, 143:4, 143:9, 149:15, 153:10, 178:10, 178:13, 180:17, 180:19, 181:4, 181:19, 182:5, 182:10, 182:15,	182:20, 183:1, 183:8, 183:10, 183:18, 184:2, 184:5, 184:11, 184:13, 184:22, 187:7, 189:3, 189:8, 189:15, 190:3, 190:4, 192:9, 193:4, 193:11, 193:15, 194:4, 194:11, 194:21, 195:12, 195:16, 195:20, 196:1, 196:2, 196:5, 196:7, 196:12, 197:4, 197:14, 198:17, 199:14, 200:2, 200:7, 200:8, 200:10, 200:18, 201:7, 201:14, 202:3, 202:11, 214:7, 215:1, 221:8, 221:10, 224:12, 224:13, 225:9, 229:11, 241:15, 241:18, 241:19, 241:20, 251:2, 261:7 references 21:17, 133:3, 147:11, 147:19, 185:18, 186:7, 186:9, 186:22, 217:12, 243:8, 243:12, 243:16 referred 21:17, 45:12, 112:7, 228:15 referring 16:4, 16:7, 16:12, 16:19, 17:6, 17:14, 68:6, 68:18, 69:17, 70:10, 74:10, 75:3, 97:17, 110:5, 112:20, 113:4,
---	---	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 102 of 120

139:14, 175:13, 182:13, 196:22, 200:17, 232:5, 235:4 refers 91:10, 179:2 regarding 8:1, 25:18 regards 25:4 registered 267:3 relate 125:9 related 10:4, 10:8, 10:11, 13:11, 20:10, 20:20, 46:14, 58:9, 59:1, 64:9, 84:21, 101:16, 104:7, 105:20, 110:11, 111:18, 113:1, 147:22, 164:2, 164:4, 166:22, 168:11, 188:4, 193:1, 200:15, 243:13, 252:16, 253:22, 258:13, 267:20 relates 7:11, 89:7, 96:12, 119:12, 119:18, 138:4 relating 147:13, 243:17, 244:15, 263:4 relationship 200:22, 264:12 relative 239:1 relatively 105:5 relied 62:2, 77:11, 77:15, 78:3, 78:7, 78:19, 79:1, 79:11,	79:16, 80:13, 81:6, 81:17, 81:21, 83:3, 83:5 rely 191:3 relying 27:9, 27:16, 83:21, 248:12 remember 20:3, 25:8, 44:13, 57:5, 57:6, 101:12, 109:21, 127:5, 127:7, 174:21, 176:14, 243:9 remembered 56:2 remote 9:8, 14:15 remotely 5:15, 7:7, 267:17 render 192:8, 193:15 rendered 187:17, 188:7, 189:2, 189:7 rendering 82:14 repeated 232:10 rephrase 13:20, 111:2 reported 1:28 reporter 6:4, 6:7, 7:10, 11:2, 14:7, 14:17, 118:1, 130:6, 132:6, 267:1, 267:4 reporters 15:11 reports 123:14 represent 5:17, 12:20	represented 11:14, 178:22, 267:14 representing 5:13, 6:3, 6:5 represents 211:14, 212:10, 212:22, 213:21, 214:9, 215:4, 215:12, 216:16, 218:6, 219:3 republic 4:20, 220:19, 226:6 request 131:4 required 96:10, 214:11, 214:16, 214:18, 215:6, 215:15, 216:18, 217:14, 218:9, 219:7, 220:8, 220:10 requirement 135:10 research 43:2, 52:21, 53:14, 53:15, 53:22, 54:3, 54:6, 54:13, 54:14, 54:15, 54:20, 55:1, 55:11, 56:13, 56:17, 64:19, 101:9, 126:2, 129:4, 129:8, 130:13, 130:18 researchers 43:10, 46:13 reside 8:13, 8:14 resistance 164:22, 165:10, 165:12, 169:5, 169:7 respect 62:3, 64:2, 82:2, 82:9,	82:22, 89:13, 89:19, 90:1, 96:16, 100:15, 101:2, 101:17, 102:1, 116:17, 117:6, 119:15, 119:21, 122:7, 122:8, 123:17, 123:22, 148:12, 162:3, 164:13, 165:4, 167:7, 176:22, 185:3, 185:20, 189:8, 197:3, 202:9, 208:2, 208:6, 209:12, 241:9, 241:15, 243:12, 244:13 respond 14:15 responding 14:10, 187:14 rest 171:22 restate 61:6, 82:7, 85:3, 86:15, 91:16, 92:15, 94:6, 106:2, 111:2, 120:7, 147:15, 155:11, 171:4, 172:5, 185:16, 241:2 results 64:12, 89:6, 114:9 retained 25:4, 25:13, 25:18, 26:3, 26:6, 26:9 retardants 42:8 retarding 42:6 retention 235:5, 239:12, 239:13, 239:16, 239:18, 239:20,
---	---	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 103 of 120

240:6, 240:14, 242:6, 253:15, 258:6 retire 51:12 reversed 211:21 review 10:8, 10:11, 13:12, 18:22, 19:13, 21:15, 134:14, 136:16, 138:21, 142:9, 144:21, 150:7, 151:11, 153:20, 163:20, 166:9, 168:6, 172:20, 178:19, 180:22, 203:19, 222:8, 225:11, 226:20, 228:3, 231:22, 237:16, 246:1, 253:4, 257:3, 260:19 reviewed 19:10, 19:15, 23:9, 23:17, 24:6, 81:3, 84:5, 84:6, 84:10, 84:16, 163:7, 163:9 reviewing 83:21, 110:10, 151:2, 167:3, 212:21 rhode 8:14, 8:18, 33:16, 34:10, 36:19, 46:6, 46:11, 52:8, 52:10 right 13:7, 21:2, 23:3, 26:11, 29:20, 39:18, 42:4, 44:1, 50:8, 66:9, 66:15, 66:16,	68:22, 77:1, 79:19, 107:14, 135:6, 138:9, 140:4, 142:21, 143:8, 143:15, 144:18, 148:19, 148:21, 162:8, 167:10, 167:17, 169:19, 172:10, 177:16, 178:9, 199:7, 209:16, 210:21, 211:8, 217:3, 220:11, 221:15, 224:18, 225:22, 231:13, 242:15, 242:16, 243:6, 256:16, 259:5, 261:11 right-hand 135:18, 143:22, 149:17, 153:12 ring 128:13 rings 128:17 role 51:7, 86:13, 88:8, 91:13, 118:18 room 8:19, 8:21 ross 3:16 rough 42:13 roughly 9:3, 9:7, 9:12, 9:19, 10:10, 14:19, 40:13, 50:15, 142:8 round 206:14, 206:22, 234:14 rounding 206:9, 206:16, 234:5, 234:20 rovers 60:18	row 55:8 rpr 1:28, 2:9, 267:3, 268:12 rules 13:12, 206:16 résumé 31:5, 36:3, 51:6, 54:21, 57:2, 57:7 S s-u-c-c-i-n-o 130:8 sabbatical 37:18, 38:2, 40:8, 42:12, 42:16, 43:4 safe 106:13 safety 159:7, 159:10 said 12:12, 21:21, 30:5, 38:4, 40:3, 40:6, 41:20, 48:22, 63:15, 73:2, 83:7, 85:21, 91:2, 92:10, 100:20, 104:17, 105:1, 105:10, 118:14, 126:3, 130:11, 133:11, 148:2, 162:5, 184:12, 187:1, 187:4, 190:22, 205:16, 205:17, 227:9, 229:17, 240:10, 248:13, 260:17 salt 32:17, 45:5, 45:17, 48:10, 86:10, 121:5, 121:8 salts 32:18, 33:4	sam 92:18 same 14:14, 29:18, 33:3, 37:13, 40:2, 44:10, 44:15, 73:17, 93:4, 121:20, 133:19, 134:2, 134:7, 135:13, 135:17, 144:15, 147:11, 147:19, 148:5, 148:12, 148:13, 148:16, 148:17, 153:7, 166:14, 166:19, 169:12, 176:4, 176:11, 179:18, 184:9, 191:19, 192:5, 197:1, 199:2, 202:17, 205:11, 208:1, 208:4, 208:17, 209:7, 209:9, 209:11, 214:5, 220:5, 223:16, 224:1, 224:10, 224:22, 225:2, 225:6, 230:14, 232:6, 232:14, 233:15, 236:3, 238:9, 243:16, 244:8, 244:14, 244:17, 249:15, 250:22, 252:16, 254:20 samsung 10:18, 10:21, 11:18, 12:1, 12:3, 55:2, 56:4 sarah 3:22, 5:13 saw 57:22, 102:20, 221:14 say 11:3, 11:7, 16:18, 17:5,
--	--	--	--

26:19, 32:6, 35:21, 40:16, 45:22, 50:5, 50:6, 63:12, 73:19, 82:18, 84:9, 92:11, 98:8, 102:4, 103:8, 121:22, 141:15, 145:10, 147:4, 147:10, 156:12, 158:15, 159:2, 159:14, 160:3, 166:17, 166:19, 174:15, 177:6, 182:1, 191:4, 196:16, 196:17, 199:1, 204:1, 206:6, 233:13, 234:7, 235:5, 235:13, 235:17, 239:5, 239:19, 240:4, 240:19, 241:11, 241:21, 245:4, 249:13, 249:15, 250:7, 257:18, 261:1 saying 125:11, 139:16, 147:16, 171:13, 184:19, 188:5, 188:15, 193:8, 206:4, 233:21, 241:12 says 56:12, 84:4, 134:4, 135:19, 137:16, 138:19, 143:14, 144:10, 144:18, 147:4, 164:15, 164:20, 165:7, 169:2, 170:1, 180:16, 182:14, 188:20, 204:13, 222:20, 226:17, 232:17, 234:19, 236:22, 247:4, 250:17,	258:20, 263:17 sbir 54:14 scan 43:15, 58:13, 65:11, 208:18 scanning 43:18 science 129:9, 157:13 scientific 206:9, 206:16 scope 189:2, 189:13 screen 27:13, 28:3, 28:17, 28:18, 28:22, 29:8, 39:11, 72:16, 73:6, 260:12 scroll 29:8 sec 258:5 second 10:19, 24:2, 24:4, 59:4, 68:16, 70:8, 71:7, 71:8, 74:15, 75:1, 76:3, 76:6, 76:10, 76:17, 79:5, 79:12, 79:16, 79:20, 79:22, 80:7, 80:10, 80:14, 81:7, 81:10, 81:18, 81:21, 82:3, 82:10, 83:1, 92:20, 107:3, 134:10, 142:21, 143:17, 143:20, 148:20, 185:5, 202:21, 211:16, 215:22, 226:15, 238:15, 252:15, 252:20, 253:5, 253:9,	256:20, 257:4, 257:7, 257:20, 262:3, 265:3 secondary 84:22, 85:8, 85:10, 85:11, 85:13, 85:18, 85:22, 86:1, 86:4, 86:14, 86:18, 87:17, 88:9, 88:12, 88:18, 89:7, 89:13, 89:20, 90:1, 90:18, 91:15, 91:21, 92:9, 92:20, 93:3, 93:7, 93:11, 93:14, 93:17, 93:22, 97:15, 97:20, 100:16, 101:4, 102:2, 110:21, 111:7, 113:8, 113:21, 114:7, 114:14, 115:21, 117:13, 117:18, 118:8, 118:15, 118:19, 119:2, 120:3, 120:4, 120:13, 121:3, 121:18, 122:10, 124:2, 124:11, 126:20, 130:2, 131:10, 132:1, 132:16, 137:17, 155:3, 177:1, 192:19, 253:14, 258:5 section 164:2, 168:11, 181:10, 181:12, 181:17, 181:18, 182:4, 187:8, 191:3, 191:14, 193:13, 264:1, 265:8 seeing 127:5, 183:6,	190:8 seem 107:2 seems 27:17 seen 108:10, 108:11, 123:14, 174:7, 176:16, 176:18, 176:19 sei 49:5, 49:8, 121:12, 160:10 select 95:8, 108:18 selected 93:21, 95:16, 96:1, 96:5, 104:20, 125:2, 137:21, 212:11, 219:4 selecting 57:20, 120:5 sense 157:12 sensitive 156:6 sent 26:22, 29:12, 29:13 sentence 137:14, 172:18, 197:2, 204:1, 204:11, 204:12, 205:5, 205:12, 206:2, 206:12, 207:17, 208:1, 208:17, 209:1, 209:7, 209:10, 247:3 separation 131:18 separator 47:16, 58:3, 86:11, 131:11, 131:13, 131:22, 132:12, 132:15, 155:4, 155:20
--	--	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 105 of 120

separators 50:10, 50:20, 58:2, 131:14 september 1:21, 5:11, 267:18, 268:6 series 12:14, 38:20, 54:16, 61:20, 91:11, 102:20, 126:22 serve 91:13 set 77:12, 78:4, 78:19, 79:12, 80:14, 81:18, 267:8, 268:5 sev 75:22 seven 41:5 several 18:16, 20:20, 53:19, 58:18, 62:6, 127:1 share 73:5 sharing 28:17, 66:7 shelf 41:8 short 19:16, 131:19 shortening 164:16 shorthand 267:1 shortly 76:11 should 83:6, 229:11 shouldn't 45:22 show 27:10, 28:2, 39:11, 43:16 showing 241:7	shown 179:14 shows 179:3, 242:3 sic 35:20, 89:6, 219:9, 231:11 side 10:17, 10:21, 10:22, 11:17, 12:1, 51:19, 52:3, 132:20, 159:18, 160:1, 160:5, 161:9 signature 67:20, 68:14, 69:12, 70:5, 72:6, 74:6, 74:21 signature-mig2k 268:10 significant 114:17, 114:19, 114:22, 159:3, 206:7, 233:17, 233:22 significantly 47:10 silicon 65:19, 65:21, 88:2, 123:12, 124:20 silicon's 88:2 silicons 88:5 similar 42:21, 43:3, 87:9, 97:2, 117:21, 118:3, 166:17, 166:20, 168:18, 168:21, 189:7, 192:16, 199:5, 199:18, 233:16, 234:7, 240:15 similarities 71:12	simply 189:7 simultaneously 51:14 since 29:14, 43:4, 56:14, 102:11, 102:12, 106:16, 132:12, 216:21, 217:18 single 126:11, 127:17, 127:20, 128:15, 179:12, 179:13 sir 10:2, 22:14, 22:20, 23:5, 61:8, 67:3, 71:20, 80:9, 133:12, 134:7, 136:14, 144:5, 148:3, 148:7, 148:9, 150:3, 150:6, 165:19, 167:18, 169:16, 175:2, 193:9, 198:14, 203:20, 205:8, 206:5, 207:12, 207:15, 208:22, 209:2, 217:5, 217:9, 220:15, 226:13, 229:15, 229:18, 231:5, 251:14, 252:1, 255:8 sit 54:18, 95:15, 100:13, 103:15, 104:2, 108:16, 108:22, 109:16, 110:2, 127:3, 129:21, 132:14, 172:2, 172:6, 196:6, 233:19, 249:2 sitting 57:14 situation 150:18	situations 113:10, 113:15 six 21:7, 30:6, 84:12, 128:14, 263:16 sixth 141:6 size 117:11, 117:16, 117:21, 118:3, 146:8, 152:3, 173:10, 173:14, 173:16, 173:17, 173:21, 174:15 sizes 170:10, 170:12, 170:13, 171:10, 171:11, 171:20, 171:21, 172:4, 172:8, 173:4 skill 176:6, 177:11, 185:1, 185:18 slightly 122:1, 174:6, 240:16 slow 73:21 small 10:19, 46:17, 50:15, 50:19, 53:7, 53:12, 53:19, 54:14, 54:15, 142:5, 156:6, 170:9, 170:22, 171:15, 194:1 smaller 170:13, 171:10, 171:20, 172:4, 172:8, 174:1 smart 37:20, 43:20 society 30:7, 52:12, 52:15 sodium 102:9
---	--	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 106 of 120

solid 159:19 solid-electrolyte 49:4, 159:22 solu 115:19 solubility 115:19, 116:1, 116:3, 116:5, 116:6, 116:9, 116:14 solution 32:17, 33:4, 33:11, 50:1, 160:15, 164:8, 226:17, 226:21, 229:22, 230:20, 232:12, 242:10 solvation 32:21 solvent 86:9, 120:1, 121:7, 228:9, 248:9, 249:6, 249:18, 264:20, 265:13, 265:15 solvents 62:21, 63:3, 64:16, 64:18, 64:22, 65:4, 119:7, 123:7, 228:6, 228:13, 228:21, 229:5, 229:7, 230:4, 230:10, 248:15, 249:4, 249:16, 263:2 some 7:2, 13:12, 18:6, 18:15, 20:21, 31:1, 31:3, 39:5, 41:9, 42:2, 47:16, 47:22, 49:19, 50:3, 50:4, 53:1, 57:16, 58:6, 58:19, 70:20,	82:19, 85:17, 86:9, 90:16, 92:8, 92:18, 93:1, 96:19, 101:9, 101:19, 101:21, 102:22, 110:13, 111:10, 119:9, 121:14, 122:8, 122:17, 122:20, 129:19, 131:14, 132:19, 149:2, 158:16, 158:18, 158:21, 159:6, 159:15, 160:6, 160:9, 160:12, 160:20, 161:6, 161:10, 161:16, 162:2, 183:7, 196:17 somehow 125:20 something 9:6, 9:10, 11:7, 21:8, 36:4, 36:14, 45:10, 57:3, 62:16, 65:13, 66:4, 66:6, 75:22, 82:18, 82:20, 98:13, 102:22, 103:1, 112:11, 116:11, 116:18, 135:8, 147:16, 157:19, 174:3, 174:6, 177:5, 177:14, 184:19, 221:22, 247:16, 249:20, 250:6 sometime 75:18, 131:8 sometimes 58:16, 102:7, 196:19 somewhat 87:8 somewhere 56:5, 82:19	son 37:22 sooter 3:5, 5:22 sorry 9:17, 11:8, 12:10, 22:15, 31:13, 72:12, 73:21, 76:8, 76:14, 76:22, 78:15, 80:2, 80:5, 80:18, 92:14, 123:20, 133:14, 136:4, 136:6, 136:11, 136:12, 140:4, 144:4, 144:6, 144:17, 147:9, 147:16, 152:21, 152:22, 162:22, 167:15, 182:1, 182:3, 182:12, 185:6, 191:22, 193:13, 197:13, 197:18, 197:19, 198:5, 203:6, 203:8, 203:11, 203:13, 208:19, 210:13, 211:20, 216:5, 216:8, 216:12, 218:4, 234:8, 236:6, 236:7, 238:6, 240:10, 252:6, 254:6, 254:12, 254:14, 256:5, 259:14, 260:12, 260:13, 262:8 sort 66:12 sorted 15:13 sound 8:3, 29:20, 30:18, 31:20, 32:13 sounds 9:13, 13:8,	13:9, 19:10, 191:8 source 86:21 south 3:7 spans 194:20 speak 24:8 speaking 31:4 specialty 42:19 species 42:2, 48:17, 128:12, 128:19 specific 38:14, 104:6, 157:21, 184:18, 190:19, 190:21 specifically 20:19, 44:13, 60:14, 61:15, 83:3, 84:7, 104:5, 104:8, 109:4, 109:19, 109:21, 154:1, 249:20, 252:12 specifics 101:12 speller 130:8 spelling 224:18 spend 20:13, 21:3 spent 21:6, 42:17, 49:6, 75:20, 76:17, 124:19 spoken 24:12, 24:17 stability 38:19, 38:21, 39:2, 49:8, 64:5, 105:5, 105:6, 110:14,
--	--	---	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 107 of 120

111:13, 111:15, 159:22, 164:17, 176:13, 176:17, 176:18, 176:19, 177:2, 177:4, 177:7, 177:12, 195:8, 195:10, 255:15, 256:14, 257:12, 258:13, 259:22, 261:3, 261:9, 261:14, 261:19, 262:2, 262:15, 263:3, 263:19, 264:9, 264:13, 264:17, 265:1, 265:10, 265:19 stabilization 115:10 stabilizing 39:15, 42:9, 44:4, 44:8, 44:18, 44:22, 45:3, 45:8, 45:10, 45:13, 45:15, 64:5, 112:2 stable 49:17, 95:19, 96:9, 120:15, 120:17 standard 38:18, 41:1, 41:14, 41:15, 47:20, 206:9, 206:15 standpoint 157:13 start 58:20, 66:19, 105:22, 110:7, 169:12, 182:3, 183:15, 186:7, 240:11 started 7:5, 25:10, 35:10, 35:11, 35:22, 36:1,	38:8, 38:11, 47:14, 48:8, 48:16, 49:10, 50:9, 51:1, 53:9, 56:1, 66:5, 98:9, 175:17, 186:20 starting 48:20, 49:9, 101:5, 102:6, 102:15, 136:22, 138:22, 140:11, 141:5, 142:14, 166:13, 167:4, 167:21, 170:14, 172:17, 186:3, 203:15, 212:9, 212:22, 214:6, 222:9, 222:18, 226:16, 226:20, 227:22, 228:7, 245:20, 247:3, 254:7, 256:22, 260:17, 263:22 starts 134:12, 137:15, 138:16, 142:4, 143:15, 166:6, 166:10, 168:2, 180:16, 207:18, 211:14, 212:2, 222:5, 252:22 state 5:17, 8:9, 92:4, 113:18, 114:9, 145:14, 156:19, 181:3, 183:17, 192:13, 195:3, 195:21, 198:16, 206:11, 212:19 stated 84:15, 112:12, 179:8, 181:9, 184:17, 184:20, 253:17, 258:8 statement 84:10, 182:14,	184:9, 184:19, 205:4, 206:1, 246:13, 246:20, 247:1, 249:7, 249:10, 249:21, 250:5, 250:7, 253:22, 258:3, 258:12 states 1:1, 4:9, 4:16, 4:23, 5:8, 95:18, 113:13, 116:16, 116:19, 116:20, 117:1, 117:5, 117:9, 138:8, 154:6, 230:20, 232:9, 242:9, 246:10, 246:14, 253:12 stating 193:20 stay 135:8 staying 151:8 step 241:13 stepping 57:9 stick 202:17 sticking 214:4 sticky 135:8 still 27:19, 38:10, 40:5, 43:12, 47:8, 50:6, 51:10, 58:19, 105:6, 132:17, 183:1, 192:2, 202:22, 209:16, 216:4, 216:6 stop 15:12, 66:7, 140:5 stor 114:3	store 88:22 straight 66:11, 68:3 street 3:7 strike 9:17, 20:14, 36:5, 52:17, 53:3, 61:22, 84:19, 93:8, 101:20, 110:16, 112:14, 123:21, 123:22, 158:3, 165:2 strong 45:19 structure 32:18, 33:11, 49:7, 117:22, 118:4, 159:21, 179:3 structures 33:4, 63:17 students 43:8, 108:20, 109:13 studied 32:17, 32:21 study 31:18, 31:22, 32:3, 32:9, 32:11, 32:15, 66:1, 103:19, 129:11 studying 35:5, 37:12, 39:2, 40:18, 43:3, 46:14, 47:8, 47:19, 49:7, 95:12, 124:20 stuff 25:10, 36:3, 43:7, 53:9, 55:8, 57:1, 57:15, 58:9, 59:10
---	---	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 108 of 120

stuff's 22:16, 58:5 su 114:1 sub 174:3, 174:9, 174:16 subcontracts 54:16 subject 15:6, 24:10, 24:14, 33:5, 33:9, 34:2 submitted 29:15, 29:18, 69:1 submitting 29:4, 66:21 subscript 215:8, 215:17, 216:20, 217:16, 218:11, 219:9, 219:15, 220:4 substantial 70:17, 71:3, 71:9 substitute 265:17 substituted 238:11 subunit 214:13 success 50:17 succil 231:11 succinonitrile 130:7, 130:9, 130:20, 131:2, 231:11 succinonitriles 130:4, 130:18 sufficient 185:13, 188:18 suggest 192:22, 232:12, 234:19 suggests 248:1	suite 3:8, 3:17 sultone 65:15 sum 173:20 summarized 232:18 summary 163:16 superior 248:7, 249:5, 249:17, 265:14 supplemental 4:29, 67:1, 68:11, 69:22, 72:5 supplementals 72:2 supplier 52:19 suppliers 54:19 supplies 106:21 supply 53:4 supporting 247:1 supposed 103:2 suppress 245:1, 245:6 suppressed 247:7 suppresses 246:11 sure 8:5, 29:16, 33:12, 53:6, 62:7, 66:15, 71:4, 73:8, 73:18, 86:16, 94:7, 97:19, 98:15, 100:1, 104:6, 105:1, 109:3, 116:4, 126:14, 127:7,	134:1, 145:15, 147:7, 150:8, 154:13, 184:17, 203:21, 224:17, 225:13, 249:19 surface 43:21, 49:10, 49:12, 49:18, 49:19, 49:21, 58:6, 160:2, 160:4, 164:21, 165:5, 165:9, 169:4, 240:21, 241:5, 241:22, 242:12, 246:16, 264:21 surfaces 58:10, 159:13, 159:16, 160:8, 161:7 swear 6:7 swelling 160:21, 160:22 switch 135:12, 148:19, 148:22, 216:11 switched 149:12 sworn 6:10, 267:9 syn 41:22 synonyms 175:20 synthesis 34:5, 100:10 synthesize 41:11 synthesizing 41:19, 42:1, 101:7 synthetic 100:11 system 94:3, 94:12, 239:10, 240:3, 248:20	systems 93:18, 94:11, 122:20, 131:5, 248:21 T table 91:12, 216:1, 232:18, 233:2, 233:4, 233:8, 234:13, 235:5, 235:9, 235:12, 235:16, 235:22, 238:18, 238:21, 239:11, 242:2 tables 82:5, 82:12 tacoma 30:18 take 7:7, 14:19, 27:15, 28:3, 52:3, 57:16, 133:17, 149:7, 149:9, 167:13, 178:5, 210:1, 241:13, 242:17, 266:1 taken 9:1, 9:4, 89:16, 267:10 taking 5:14, 27:8, 27:11, 27:21, 43:6, 241:13 talk 75:7, 84:21, 116:9, 196:19 talked 61:3, 62:1, 104:10, 107:18, 118:12, 122:6, 123:5, 131:11, 166:15, 168:16, 176:12, 176:16, 180:4, 237:3 talking 19:3, 28:20,
---	--	---	---

39:13, 60:3, 99:10, 107:15, 112:8, 116:4, 121:17, 146:20, 149:14, 149:16, 155:2, 163:6, 170:15, 173:1, 174:18, 174:20, 175:6, 196:20, 206:18, 208:2, 210:21, 214:6, 220:21, 224:22, 236:10, 237:12, 241:14, 241:16, 243:7, 243:11, 261:11, 263:12 talks 44:17, 139:3 teach 126:15, 127:11 teaches 264:19 teachings 189:15, 191:3 tech 40:4 technical 35:7, 36:7, 37:15, 42:18, 42:22, 43:1 technically 31:4 technologies 5:20, 61:2, 61:9 technology 1:5, 3:3, 5:7, 6:15, 7:3, 16:4, 47:16, 58:3, 193:21 tell 13:20, 244:11 temperature 112:5, 120:20 term 85:8, 89:5, 89:10, 89:12, 89:18, 89:22,	90:6, 90:10, 91:5, 91:8, 96:12, 96:15, 96:21, 111:15, 116:3, 119:11, 119:14, 119:17, 119:20, 126:6, 127:9, 128:6, 175:3, 176:17, 176:18, 176:19, 177:1, 177:4 terms 32:18, 35:13, 35:21, 45:10, 76:19, 92:15, 97:2, 97:3, 97:7, 114:2, 118:9, 139:13, 156:12, 175:13, 191:13, 201:1 testified 6:12, 12:16, 60:6 testify 6:11, 15:17 testifying 11:20 testimony 8:1, 15:7, 204:18, 204:19, 267:11 testing 43:6 tetrafluoro 48:14 texas 3:18 th 5:11, 29:19, 69:19, 74:6, 74:12, 180:6, 267:18, 268:6 thank 15:15, 36:16, 52:4, 57:8, 61:8, 68:9, 78:15, 130:21, 134:8, 205:21,	225:5, 225:7, 230:18 thanks 8:8, 28:16, 266:8 themselves 5:17, 157:8 theoretical 175:16 theoretically 175:16 therefore 129:10, 171:17, 204:2, 204:14, 207:18, 209:3, 215:9, 219:17 thermal 38:19, 38:21, 39:15, 42:9, 45:2, 45:13, 45:15, 164:17, 195:8, 195:10, 261:3, 261:9, 261:18, 262:14, 263:3, 263:19, 264:8, 264:12, 264:17, 265:1, 265:10, 265:19 thermally 45:18 thermochromic 59:4 thesis 33:6, 33:10 thing 33:3, 51:17, 51:19, 57:22, 58:14, 73:18, 102:14, 121:22, 157:4, 166:19, 174:15, 186:21, 208:4, 230:14, 248:22 things 10:1, 18:18, 19:7, 20:9, 21:14, 21:19, 21:22, 22:7,	35:16, 41:12, 43:3, 46:18, 48:7, 48:8, 52:2, 53:7, 57:13, 57:16, 60:13, 62:6, 62:15, 63:2, 66:16, 73:5, 80:1, 82:18, 86:8, 87:8, 94:20, 98:20, 102:8, 102:10, 105:12, 117:15, 117:17, 117:21, 129:10, 135:7, 156:15, 166:17, 168:21, 169:10, 186:17, 187:4, 219:5, 247:16, 249:1 think 9:5, 9:9, 9:10, 10:13, 10:18, 10:21, 12:3, 12:12, 15:22, 19:11, 19:15, 20:18, 21:1, 21:12, 22:1, 25:11, 25:15, 26:21, 27:19, 30:6, 36:14, 37:13, 37:17, 37:21, 38:1, 39:8, 39:12, 40:9, 40:11, 42:1, 44:14, 45:12, 50:13, 50:19, 50:22, 51:2, 52:22, 53:12, 54:11, 54:12, 58:14, 58:15, 59:12, 62:5, 63:2, 63:15, 64:12, 71:22, 72:22, 73:11, 76:11, 81:4, 83:7, 94:18, 98:4,
---	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 110 of 120

98:12, 99:16, 99:19, 102:6, 102:7, 102:21, 104:18, 105:10, 111:9, 113:4, 114:16, 115:6, 122:2, 126:5, 129:7, 132:4, 132:8, 147:1, 147:6, 154:10, 155:16, 162:5, 167:9, 171:13, 172:11, 174:11, 174:17, 174:22, 179:20, 186:20, 187:1, 187:21, 188:2, 189:14, 208:16, 210:11, 213:11, 213:19, 230:13, 242:3, 245:9, 246:22, 247:14, 249:13 thinking 66:1 third 139:2, 140:15 third-to-last 140:20 thoroughly 72:7 thought 48:11, 125:6 thousands 126:16 three 7:11, 7:18, 9:9, 19:1, 19:14, 19:16, 26:13, 41:5, 53:10, 142:16, 188:16, 226:12, 251:15, 266:9 three-quarters 221:20 ti 212:16, 213:4 time 5:12, 9:5,	13:12, 14:8, 14:20, 24:12, 24:17, 28:14, 29:18, 34:12, 34:16, 34:21, 35:3, 35:10, 35:20, 36:1, 36:17, 37:1, 37:6, 37:10, 37:13, 37:17, 38:3, 38:7, 38:13, 38:16, 40:2, 40:7, 40:13, 40:20, 41:8, 41:20, 42:11, 43:5, 43:8, 43:11, 46:20, 47:3, 47:6, 47:15, 47:17, 48:7, 49:6, 50:5, 50:12, 59:6, 59:13, 59:17, 59:21, 62:6, 62:10, 62:18, 63:2, 65:10, 75:20, 76:17, 93:18, 94:12, 94:18, 98:1, 98:6, 98:12, 98:17, 99:3, 99:9, 99:13, 100:14, 100:17, 101:10, 104:17, 105:4, 105:21, 105:22, 106:10, 106:14, 107:3, 107:8, 107:12, 110:8, 110:16, 110:18, 111:4, 119:4, 121:19, 124:20, 133:19, 138:11, 143:9, 149:16, 154:16, 154:20, 176:11, 205:22, 210:15, 210:19, 242:22, 243:4, 266:3,	266:7 times 9:3, 20:6, 20:7, 20:15, 50:21, 129:17 timing 42:13 tin 102:7, 108:4, 108:7, 108:13, 108:15, 108:18, 109:2, 109:4 titanium 109:5, 109:9, 109:12, 109:17, 109:20, 212:11, 212:16, 213:5, 213:7, 213:8, 213:12, 213:16, 213:17, 214:3 titanium's 109:22 title 33:13, 44:17, 169:20, 181:15 tl 3:4 today 5:13, 5:21, 6:5, 7:2, 8:16, 8:20, 8:21, 9:8, 12:10, 13:14, 15:4, 15:17, 15:21, 17:18, 17:19, 22:3, 24:9, 27:20, 28:2, 28:20, 50:6, 54:19, 57:19, 61:4, 68:17, 69:16, 70:9, 74:9, 75:2, 84:21, 95:16, 100:13, 103:15, 104:2, 108:16, 108:22, 109:16, 110:2, 110:6, 127:4, 129:21, 132:14,	149:2, 155:2, 172:2, 172:6, 196:6, 233:20, 249:2, 266:10 today's 5:11, 7:11, 7:22, 18:3, 24:10, 25:1, 30:3 together 186:22 token 205:11 told 23:14, 52:18 tons 48:12 took 42:12, 43:4, 43:5, 44:5, 131:6 top 134:11, 137:15, 172:10, 220:16, 261:1 topic 254:20 total 20:9 totally 15:10 toward 142:13 track 14:8, 58:16 trademark 1:1, 5:9 tradeoff 177:15 trammell 3:15 transa 145:2 transact 90:7 transcribe 14:17 transcript 4:7, 5:4, 7:16,
---	---	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 111 of 120

7:21 transi 92:12, 139:22 transition 34:7, 90:7, 90:11, 90:12, 90:17, 91:6, 91:8, 91:10, 91:11, 91:13, 91:14, 91:19, 91:20, 92:2, 92:3, 92:8, 92:12, 92:19, 93:2, 93:16, 93:20, 94:9, 94:15, 95:1, 95:4, 95:9, 96:1, 96:6, 96:13, 96:16, 97:16, 97:21, 98:1, 98:3, 98:7, 98:17, 99:2, 99:7, 99:13, 100:5, 100:8, 100:16, 100:18, 101:3, 101:10, 101:16, 102:1, 102:19, 104:7, 104:21, 108:6, 109:6, 113:12, 114:10, 117:2, 135:3, 137:7, 137:10, 137:18, 137:20, 140:1, 145:2, 145:12, 145:18, 146:5, 146:14, 146:17, 150:20, 151:5, 151:21, 152:8, 152:19, 154:4, 173:3, 217:1, 225:17 transitional 101:3, 146:14, 150:15 transitioning 141:6 transport 113:3, 118:21	transported 88:14 transporting 120:19 trees 22:5 trial 1:2, 12:17 tried 59:10 triple 125:16, 126:11, 129:20 true 267:11 truth 6:11, 6:12 truthful 15:20 truthfully 13:15 try 14:12, 46:17, 48:12, 66:11, 129:8, 129:12, 133:18, 188:14, 205:21 trying 50:17, 50:20, 52:22, 68:2, 80:21, 82:22, 120:9, 147:18, 161:21, 183:2, 183:3, 186:2, 187:5, 187:6, 188:6, 188:22, 189:1, 189:12, 189:17, 190:9, 208:11, 256:1 tryon 3:7 tuesday 1:21, 267:18 turn 14:10, 23:5, 26:12, 67:17, 68:10, 68:13, 69:9, 69:21,	70:2, 71:7, 71:13, 71:16, 74:19, 77:1, 77:7, 77:17, 78:10, 78:13, 79:4, 79:6, 79:19, 81:9, 81:13, 132:21, 136:2, 136:6, 138:12, 141:3, 142:1, 149:5, 149:22, 151:9, 152:14, 153:6, 153:17, 162:8, 163:11, 165:14, 166:2, 167:10, 167:20, 169:11, 169:13, 170:19, 178:16, 180:1, 180:9, 181:11, 185:8, 191:18, 197:10, 198:11, 202:18, 207:5, 208:16, 208:18, 211:3, 211:7, 215:19, 217:3, 217:20, 218:14, 220:12, 221:18, 223:4, 225:8, 226:9, 226:14, 229:14, 231:14, 232:21, 237:8, 242:7, 245:11, 245:16, 248:3, 250:9, 250:13, 252:15, 254:4, 254:8, 256:19, 260:3, 260:6, 263:5 turning 46:2, 61:13, 74:15, 83:14, 83:18, 143:3, 143:8, 146:11, 162:17, 162:21, 193:14, 194:10, 194:19, 196:10, 199:7, 199:22,	200:9, 201:5, 201:13, 214:19, 215:10, 223:12, 223:18, 224:9, 229:10, 230:19, 231:14, 242:7, 251:18, 252:22, 255:1, 255:17, 257:1, 258:15, 262:3, 265:3 twist 12:10 two 10:13, 10:15, 21:5, 22:16, 30:8, 31:10, 52:16, 60:13, 66:21, 67:2, 69:1, 70:17, 71:3, 71:10, 71:12, 72:2, 72:4, 127:5, 127:8, 127:21, 129:20, 142:16, 143:14, 143:19, 145:2, 147:11, 147:19, 148:5, 148:13, 150:21, 151:20, 170:11, 173:2, 173:5, 173:6, 176:3, 179:3, 181:6, 181:21, 182:7, 182:17, 183:20, 184:14, 185:2, 185:20, 187:19, 188:10, 188:15, 188:16, 189:5, 191:5, 192:11, 193:5, 193:17, 194:5, 194:13, 194:22, 195:7, 195:17, 196:13, 197:6, 198:19, 199:16, 200:4, 200:12, 200:20, 201:8, 201:16, 201:20, 202:5,
---	---	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 112 of 120

202:12, 210:7, 213:20, 223:16, 224:1, 226:15, 235:2, 251:17, 254:5, 257:15, 257:22, 258:2, 258:11, 258:22, 259:8, 259:18, 261:11, 261:20, 263:1 type 34:20, 37:5, 37:9, 54:13, 62:14, 178:22 types 35:2, 44:15, 47:2, 47:5, 60:10, 90:4, 95:13, 119:1, 156:16, 156:21 typically 54:9, 86:6, 87:3, 128:12, 132:7, 174:7 U u-b-e 11:8 ube 10:16, 11:6, 11:8, 11:13, 11:17, 224:20, 224:22, 225:2, 225:6 ube's 10:17 uh-huh 206:21 uh-huhs 14:16 un 51:17 under 13:14, 31:2, 112:19, 166:6, 168:2, 169:19, 183:1, 224:18, 227:21, 229:20,	231:18 undergraduate 30:16, 30:17, 31:19, 32:12 understand 13:16, 13:18, 13:21, 14:4, 16:2, 16:6, 16:11, 16:14, 16:19, 16:22, 17:6, 17:9, 17:14, 17:17, 27:4, 28:6, 31:6, 36:18, 67:6, 68:5, 68:17, 69:17, 70:9, 71:4, 74:9, 75:2, 82:15, 82:22, 83:4, 88:10, 93:9, 103:11, 104:14, 123:16, 129:9, 129:12, 166:21, 175:18, 186:19, 188:7, 195:4, 212:15 understanding 7:20, 29:7, 112:3, 112:20, 116:2, 119:4, 148:15, 160:3, 186:2, 186:12, 189:14, 243:15, 244:22 understood 19:9, 23:21, 26:1, 52:4, 57:17, 58:11, 59:11, 128:20, 158:3, 265:13 united 1:1, 4:9, 4:16, 4:23, 5:8 universities 31:2 university 30:18, 31:19, 32:1, 32:4,	32:8, 32:12, 32:16, 33:1, 33:16, 33:22, 34:3, 34:8, 34:9, 36:19, 46:6, 46:11, 46:12, 52:8, 52:10, 57:3, 124:19 unless 14:5 unrelated 51:18, 189:10 unsaturation 179:11 unsolved 50:7 until 51:12, 53:9 updates 30:2, 30:8 upper 135:18, 149:17, 153:12 uri 124:22 usa 8:14, 8:18 use 15:5, 27:20, 63:20, 85:16, 94:8, 97:7, 105:18, 106:7, 106:18, 110:20, 111:6, 111:15, 124:12, 171:20, 174:7, 175:13, 175:19, 176:20, 210:2, 222:21, 228:11, 229:4, 230:9, 230:11, 238:1 uses 174:2, 232:6, 236:20, 237:20 using 95:3, 95:11, 98:11, 99:4,	101:10, 101:14, 102:6, 104:3, 105:4, 106:11, 109:2, 109:17, 110:4, 110:9, 110:13, 112:9, 115:4, 115:7, 129:3, 149:3, 172:3, 172:7, 176:21, 221:16, 223:16, 239:6 usually 31:5, 47:13, 86:9, 108:1, 108:2, 112:3, 117:20, 118:2, 121:13, 131:14, 160:22, 161:4, 175:15, 179:4, 230:7, 230:16, 230:17 utilize 223:22, 230:11 utilized 104:16, 122:11, 122:19, 122:22, 129:11, 130:4, 242:4 utilizes 145:20, 228:9, 229:1 V value 205:6, 205:13, 206:3, 206:12, 208:6, 209:12, 212:17, 213:8, 213:17, 215:17, 216:21, 219:21, 220:3, 220:5, 233:10, 234:1, 239:1 values 234:12, 235:2, 235:22 various 48:17, 88:6,
---	--	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 113 of 120

95:13 vc 65:14, 65:16, 122:12, 160:10 vein 14:14 venue 10:4 verbally 14:15 version 73:12, 180:16 versus 240:13 via 267:17 vice 52:14 video 5:12, 5:14, 7:7, 12:7, 28:14, 59:17, 59:21, 107:8, 107:12, 154:16, 154:20, 210:15, 210:19, 242:22, 243:4, 266:3, 266:7, 266:16 videoconference 267:18 videographer 3:22, 5:5, 5:13, 6:4, 28:10, 28:13, 59:16, 59:20, 107:7, 107:11, 154:15, 154:19, 210:14, 210:18, 242:21, 243:3, 266:2, 266:6, 266:14 videotaped 1:18, 2:1, 5:6, 266:15 view 205:4 vinson 3:14, 6:2	vinylene 66:2, 122:12 virtually 1:20, 2:2, 119:5, 121:5 vitae 4:26 voice-identify 5:16 voltage 64:5, 111:20, 176:17, 176:18, 176:19, 177:2, 177:4, 177:7, 177:9, 177:12 volts 164:14 volume 104:12 W wait 22:12, 37:15, 61:6, 79:22, 92:11, 143:17, 147:14, 192:1, 202:21, 205:14, 211:16, 238:15 walk 30:14 walked 57:19 walking 56:16 want 22:19, 27:15, 74:2, 112:1, 116:14, 118:2, 120:15, 120:16, 120:18, 120:19, 120:21, 133:18, 157:2, 163:18, 176:6, 177:12, 216:1, 217:6, 236:14, 244:1, 244:20, 248:3, 251:12, 256:5, 259:10, 262:16,	263:9, 265:21 wanted 7:5 wanting 117:21 washington 30:19 water 119:16, 120:1 way 19:6, 29:9, 73:10, 147:16, 157:10, 162:19, 167:14, 185:22, 188:5, 221:21, 249:15, 268:2 ways 20:21, 45:9 we'll 15:12, 29:8, 73:5, 169:12, 190:6, 190:22, 217:2, 233:10 we're 14:15, 19:3, 23:22, 28:20, 39:10, 43:18, 65:19, 66:16, 68:6, 84:21, 134:1, 134:2, 135:17, 143:17, 143:18, 144:15, 149:13, 149:14, 149:16, 163:4, 189:11, 202:22, 210:11, 210:14, 237:12, 266:13 we've 28:18, 44:10, 57:19, 58:6, 59:12, 105:11, 107:1, 129:16, 146:20, 154:10, 177:3, 214:5, 241:14, 241:16, 266:10 week 21:6	weeks 52:16 weight 31:3, 230:22, 236:20, 237:1, 237:21, 238:2 welcome 60:2, 107:14, 154:22 went 12:7, 35:9, 40:8, 42:12, 42:17, 42:20, 50:21, 144:6, 208:7, 209:11, 244:16 wentao 39:16 weren't 41:7, 98:19 western 1:28, 2:8, 6:5, 267:3, 268:12 whatever 29:9, 108:10, 111:22, 123:13, 191:14 when's 37:16 whenever 248:22 whereby 169:3, 247:7 wherein 211:14, 212:2 whereof 268:5 whereupon 59:18, 107:9, 154:17, 210:16, 243:1, 266:4 whether 21:10, 25:12, 62:9, 64:8, 83:4, 98:16, 98:22, 109:1, 110:3, 110:20, 111:5, 130:22,
---	---	--	---

181:19, 182:5, 182:19, 182:20, 184:22, 185:17, 187:17, 188:7, 188:8, 191:3, 192:9, 193:4, 193:15, 194:4, 194:11, 194:21, 195:16, 196:11, 197:4, 199:14, 200:2, 200:10, 200:18, 201:6, 201:14, 202:3, 202:10, 244:22, 249:3, 251:1, 251:10, 251:20, 252:9, 253:9, 253:19, 255:3, 255:4, 255:19, 255:22, 256:9, 257:8, 257:14, 257:20, 259:6, 259:17, 261:7, 261:17, 262:13, 264:7, 264:16 whole 6:11, 12:6, 38:9, 55:7, 122:15, 142:10, 186:20, 248:20 widely 94:19, 122:11 wiring 227:22, 228:8 within 141:13, 258:2, 262:2, 267:4 without 240:8, 253:16, 258:6 witness 6:8, 23:20, 59:15, 76:12, 83:9, 84:3, 85:3, 89:9, 103:11, 107:4, 111:9, 117:20, 118:2, 130:7,	132:7, 154:13, 161:20, 171:4, 189:21, 190:1, 191:11, 212:19, 213:11, 242:19, 266:11, 266:12, 267:7, 267:12, 268:5 wondering 184:7, 186:15 word 89:10, 129:16, 138:16, 226:11 word-for-word 166:19, 168:20 word-to-word 199:6 wording 186:1 work 12:20, 13:2, 32:7, 32:22, 34:2, 34:18, 34:20, 35:2, 36:5, 37:3, 37:5, 37:9, 40:12, 42:22, 43:17, 45:16, 47:5, 48:13, 50:18, 54:2, 54:5, 54:11, 58:6, 58:9, 62:3, 63:5, 63:9, 64:10, 65:2, 89:4, 100:19, 103:5, 103:18, 123:17, 129:7, 158:16, 160:7, 161:17, 162:2, 242:18 worked 13:4, 38:4, 43:5, 52:19, 53:3, 53:5, 55:19, 57:12, 60:20, 62:9, 103:16, 106:11, 106:22, 108:17,	108:20, 109:14, 109:20, 123:17, 125:5, 155:1 working 33:16, 34:9, 38:15, 40:3, 43:12, 46:22, 47:3, 48:3, 48:22, 49:2, 50:9, 50:18, 51:1, 56:1, 62:11, 64:14, 64:20, 66:5, 87:14, 93:6, 93:10, 94:2, 94:9, 98:9, 101:6, 102:15, 106:21 works 158:1 wouldn't 32:20 wright 3:13, 6:1, 6:2, 15:11, 20:16, 26:22, 27:6, 27:11, 27:19, 28:7, 28:9, 72:8, 72:11, 72:14, 83:8, 84:2, 85:2, 89:8, 103:10, 111:8, 117:19, 161:19, 171:3, 189:20, 189:22, 191:10, 204:8, 212:18, 213:10, 266:12 write 205:16 written 234:13 wrong 205:18 wrote 62:2 x xo2 141:18	y y 11:5, 36:8 y-a-r-d-n-e-y 36:11 yard 36:9 yarden 35:20, 36:7 yardney 35:7, 36:11, 37:15, 40:4, 40:6, 40:12, 40:21, 41:19, 42:18, 42:22, 43:1, 43:9, 44:11, 52:18, 54:2, 54:12, 54:17, 55:3, 55:5, 55:9, 55:13, 55:14, 55:18, 57:13, 60:4, 60:7, 60:11, 60:20, 61:4, 61:10, 61:17, 62:3, 62:11, 62:19, 63:6, 63:9, 87:14, 91:2, 93:6, 93:10, 93:12, 93:13, 93:16, 93:21, 94:11, 95:6, 95:11, 95:16, 95:22, 96:5, 98:9, 98:16, 100:20, 104:13, 104:20, 115:4, 122:7 yardney's 60:17 yeah 8:5, 8:8, 15:15, 22:7, 24:3, 38:1, 39:15, 40:17, 40:18, 42:17,
--	---	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 115 of 120

45:22, 46:1, 48:5, 48:7, 51:9, 51:11, 51:15, 54:10, 56:10, 56:19, 58:13, 58:22, 72:13, 72:14, 72:21, 73:1, 73:11, 73:17, 80:16, 81:2, 90:22, 98:5, 111:3, 126:21, 131:8, 133:13, 133:15, 138:2, 138:6, 140:9, 141:20, 144:1, 147:2, 147:3, 147:9, 148:4, 153:1, 161:8, 163:20, 164:10, 164:20, 165:17, 171:7, 174:4, 177:21, 186:5, 197:22, 203:1, 203:15, 206:19, 207:13, 208:15, 208:19, 209:20, 210:5, 215:4, 231:12, 236:9, 240:13, 244:4, 244:5, 244:7, 247:17, 250:3, 252:7, 254:14, 262:22 year 25:11, 30:4 years 31:10, 53:10, 103:1, 120:21 yep 23:2, 39:22, 44:20, 46:5, 56:15, 77:19, 133:16, 134:6, 135:16, 135:22, 136:21, 139:1, 140:14, 142:12, 144:17, 151:10,	153:8, 153:14, 163:18, 163:22, 166:8, 167:15, 168:1, 168:5, 169:18, 170:3, 170:6, 170:7, 172:19, 178:7, 178:18, 178:21, 180:3, 180:7, 181:1, 205:15, 211:6, 212:7, 217:6, 218:16, 221:3, 222:7, 222:14, 226:3, 229:13, 236:16, 243:22, 245:15, 245:18, 245:22, 246:2, 246:3, 252:4, 252:17, 254:6, 263:7 yesterday 20:4, 20:18, 21:1, 21:4 young 50:16 yourself 212:6 z zero 141:8, 141:19, 151:7, 214:14, 214:18, 215:8, 215:18, 216:22, 217:17, 218:12, 219:10, 219:11, 219:17 zero's 217:18 zirco 103:4 zirconium 102:17, 103:4, 103:8, 103:17, 104:4, 104:5, 104:8, 212:12 . .0 230:21	.0008 205:6 .001 207:1 .002 204:3 .005 204:4 .0051 205:13 .0055 206:14 .05 212:17 .055 206:13 .2 236:20, 237:20 .99 234:19 0 0.0008 205:7, 206:18 0.002 204:15, 205:9, 205:20, 209:4 0.005 204:17, 220:4 0.0051 205:16 0.02 215:9, 215:18, 219:16 0.05 206:8, 209:5, 213:9, 213:13, 214:15, 216:21, 217:17, 219:10 0.051 206:3, 206:4, 206:7 0.055 206:14 0.06 206:15 0.2 218:12, 237:1,	238:2 0.96 239:4 0.99 234:21 001394.6 4:24 0013946 224:14 01 243:4 0144 71:21 01440 1:6, 5:9, 7:12, 16:16, 66:20, 67:15, 68:4, 68:11, 68:20, 77:2, 79:8, 83:22 01441 1:9, 5:10, 7:13, 17:2, 71:14, 74:12, 75:5 01442 80:12 01443 1:12, 5:10, 7:14, 17:11, 69:1, 69:19, 69:22, 70:12, 202:20, 243:17, 255:18, 256:8, 258:17 019 17:5, 17:9, 17:15, 26:5, 69:16, 70:8, 70:16, 71:1, 71:8, 75:9, 76:4, 77:18, 78:4, 78:8, 79:21, 80:4, 80:14, 81:7, 147:22, 165:15, 166:22, 197:11, 197:12, 198:4,
--	---	--	---

PLANET DEPOS
888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030
AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.
IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042
Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.
IPR2025-00431, U.S. Patent No. 11,799,131
Page 116 of 120

198:8, 198:10, 204:5, 204:17, 204:21, 205:3, 208:2, 215:20, 217:2, 217:4, 217:11, 217:15, 217:21, 218:10, 243:17 0197667 153:13 02 59:17 0208371 4:17, 135:20 0257745 149:18 035 16:18, 16:22, 17:15, 26:8, 71:21, 74:5, 74:8, 74:17, 75:1, 75:9, 76:4, 78:11, 78:20, 79:2, 81:10, 81:18, 81:22, 148:22, 149:13, 150:1, 167:11, 167:13, 168:11, 168:16, 169:1, 169:12, 170:9, 170:15, 171:9, 174:10, 197:19, 208:14, 208:15, 218:15, 218:18, 218:19, 219:8, 219:20, 260:4 05 139:3 06 102:12, 119:4 1 1 154:20 1.00 233:10, 233:18, 233:20, 234:3,	234:10, 234:13, 234:17, 234:22 1.001 234:6 1.02 239:1 1.1 234:14, 234:16 1.3 146:9, 153:3 1.4 143:16 1.7 56:6 10 59:17, 59:21, 75:22, 135:19, 138:12, 138:14, 138:15, 139:3, 140:8, 140:21, 141:13, 141:21, 142:8, 145:5, 152:2, 262:12, 262:17, 262:18, 262:19, 262:22 100 235:6, 235:13, 235:14, 235:18, 235:20, 239:20, 239:22 1000 3:10, 178:5 1001 4:9, 5:1, 16:15, 17:1, 17:10, 23:15, 162:9, 162:13, 165:15, 165:18, 166:14, 166:16, 167:5, 167:11, 167:17, 167:21, 209:21, 209:22, 211:4, 217:8, 245:12, 245:13 1005 4:12, 5:1, 133:7, 133:14, 133:15, 134:18,	138:10, 138:13, 139:3, 140:8, 142:2, 143:9, 143:11, 146:21, 147:11, 148:11, 148:13, 149:6, 149:14, 150:1, 151:3, 151:8 1006 4:16, 5:1, 135:15, 135:16, 135:18, 136:1, 136:3, 139:20, 141:4, 143:4, 146:11, 146:21, 147:12, 148:11, 148:13, 153:6, 153:11, 154:5, 177:17, 178:4, 178:9, 179:1 1007 4:18, 5:1, 220:13, 220:14, 220:16, 221:7, 222:18, 226:1, 226:10, 243:20 1008 4:23, 5:1, 23:15, 224:9, 224:11, 229:12, 231:16, 236:20, 237:11, 243:20 101 3:7 105 148:6 106 148:6 107 244:5 108 244:7 11 107:8, 107:12, 153:18, 185:8, 226:9, 226:11, 262:12, 262:17, 262:18, 262:19,	263:1 12 25:7, 29:19, 74:6, 74:12, 150:2, 154:16, 180:6, 194:20, 221:18, 221:19, 221:20, 222:18, 223:2, 245:20, 262:16, 265:5, 265:7, 265:9 13 1:21, 5:11, 143:10, 143:18, 144:5, 144:6, 144:8, 180:12, 194:20, 227:15, 228:8, 267:18 14 56:13, 145:6, 146:2, 152:3, 170:14, 174:22, 175:4, 176:7, 223:4, 223:6, 223:7, 223:12, 223:20, 246:14, 261:1 1440 22:10, 133:9, 133:10, 135:14, 135:19, 138:10, 142:2, 143:4, 146:21, 147:6, 147:9, 148:11, 162:9, 162:11, 166:16, 177:17, 177:19, 177:22, 178:1, 179:19, 191:22, 192:1, 199:3, 207:5, 207:11, 207:13, 208:7, 209:8, 211:4, 220:12, 224:10, 226:1, 226:3, 243:12, 244:9, 244:13, 245:11, 250:10, 250:11, 252:16,
--	--	--	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 117 of 120

254:21 1441 71:21, 81:11, 148:22, 149:6, 149:12, 153:7, 167:12, 167:21, 208:13, 218:17, 260:4, 263:6, 264:6 1442 8:2 1443 26:14, 77:21, 80:4, 80:5, 80:7, 147:13, 147:22, 148:1, 148:14, 165:15, 165:16, 166:14, 197:11, 198:4, 198:6, 199:2, 199:12, 200:1, 202:2, 202:22, 208:3, 209:8, 215:21, 216:3, 217:2, 243:19, 244:9, 244:15, 254:4, 254:6, 254:9, 255:2, 256:20, 257:7, 259:16 15 58:21, 99:20, 104:18, 179:7, 223:20, 228:17, 252:19, 252:21, 253:4, 253:8, 256:22, 257:3, 257:6, 257:10, 257:13, 257:19, 258:11, 265:5, 265:7, 265:9 16 142:14, 143:18, 169:14, 169:15, 169:17, 170:8, 171:9, 175:1, 175:5, 176:8, 203:15, 223:1,	268:6 17 56:11, 172:15, 172:16, 246:14, 247:4, 253:5, 253:8, 257:4, 257:6, 257:10, 257:13, 257:19, 258:11 170 44:12 18 25:7, 69:19, 211:8, 242:8 19 59:21, 220:17 1991 30:19 1996 31:8 1998 34:11, 34:17, 34:22, 35:4 2 2 37:22, 46:20, 210:15, 210:19, 252:22 20 75:22, 102:12, 119:4, 120:21, 216:14, 221:1 2000 35:11, 37:1, 47:14 2001 3:16, 36:2 2002 34:17, 34:22, 35:4, 36:1, 36:18, 38:4, 38:15, 40:13, 62:10, 62:19 2004 4:24, 37:22, 153:13, 224:14 2005 4:17, 38:1,	39:9, 39:17, 39:18, 40:7, 40:10, 40:11, 42:11, 61:15, 135:20 2006 36:18, 37:16, 38:4, 38:16, 40:14, 51:5, 51:9, 62:10, 62:19, 63:5, 63:8, 63:14, 63:19, 64:1, 64:14, 64:19, 64:20, 65:2, 87:7, 87:11, 87:12, 88:5, 88:7, 93:1, 93:4, 97:18, 97:19, 98:3, 98:17, 99:3, 99:13, 100:14, 101:1, 102:12, 102:14, 105:21, 105:22, 106:7, 106:16, 110:7, 110:8, 110:12, 110:16, 110:18, 111:4, 119:4, 121:19, 122:1, 122:3, 131:21, 132:2, 132:12, 149:18 200610004421.7 4:14, 134:6 200610073006.7 4:21, 221:4, 226:6 2007 46:3, 46:21, 47:7, 47:18, 48:4, 49:15, 50:10 2008 4:25, 5:2, 22:11, 44:4, 67:5, 67:11, 68:4, 68:7,	69:17, 74:10, 77:2, 77:21, 180:4, 191:22, 199:2, 199:3, 199:12, 200:1, 202:2, 202:19 2009 4:26, 5:2, 26:13, 26:20, 27:16, 28:19, 28:22, 29:2 2010 36:14, 46:3, 46:21, 47:7, 47:18, 48:6, 48:21, 49:9, 49:15, 50:4, 50:10, 51:3, 51:6, 58:1, 65:13 2011 50:5, 51:3, 55:21, 58:2, 66:6 2012 55:22, 65:13, 66:6, 98:10, 102:15 2013 56:4, 98:10, 102:15 2014 56:4, 66:5 2015 4:29, 5:2, 24:5, 50:5, 68:18, 70:10, 75:3, 79:8, 80:11 2016 102:12, 110:6 2021 1:6, 1:9, 1:12, 5:9, 7:12, 7:13, 7:14, 16:16, 17:2, 17:11, 67:15, 68:11, 68:20, 69:1,
---	--	---	--

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 118 of 120

69:19, 70:12, 74:12, 75:5, 79:8, 80:12, 147:22, 255:18, 256:8, 258:17 2022 1:21, 5:11, 29:19, 30:1, 51:6, 68:20, 69:19, 70:12, 72:6, 74:6, 74:12, 75:5, 75:17, 122:4, 180:6, 267:18, 268:6 2025 268:7 21 75:18, 134:4, 221:1 214 3:19 220 3:19 23 76:13 24 107:8 25 28:10, 69:9, 69:12, 173:8 26 28:14, 42:5, 67:17, 68:1 268 1:27 27 173:9 28 211:13, 211:17, 212:1 28280 3:9 29 39:20, 61:15, 61:21, 62:2, 62:4, 172:15, 172:16, 214:22,	219:1 3 3 242:22 30 71:16, 73:2, 73:3, 74:5, 75:22, 202:7, 215:11, 215:12, 216:14 32 261:16 33 186:3, 186:10, 187:16, 191:18, 192:6, 192:8, 192:13, 199:8, 199:10, 199:13, 199:19, 225:9, 225:10, 225:11, 225:15, 225:21, 261:16 34 193:3, 193:8, 193:10, 193:13, 199:22, 200:1, 200:6, 260:9, 260:15, 260:17, 260:18, 260:19, 260:22, 261:6, 261:10 35 154:20, 163:15, 163:18, 163:20, 164:1, 164:6, 164:12, 164:18, 165:3, 167:7, 168:17, 193:14, 200:9, 200:10, 200:14, 219:1, 260:10, 260:20, 261:10 36 136:2, 136:7, 136:8, 194:3, 194:8, 200:17, 200:18	37 178:17, 178:18, 178:20, 179:1, 179:2, 179:15, 194:10, 194:15, 201:5, 201:6 38 179:8, 194:19, 194:20, 201:13, 201:14 39 180:9, 180:11, 180:12, 180:22, 181:3, 181:10, 183:7, 183:16, 184:3, 184:4, 184:5, 184:10, 195:15, 195:20, 195:22, 196:3, 197:2, 198:12, 198:15, 198:16, 199:1, 199:3, 202:1, 202:7, 208:16, 208:22, 209:1, 266:3 3900 3:17 4 4 243:4, 266:3, 266:7, 266:17, 266:18, 267:19 4.2 164:10, 164:14 40 44:1, 107:12, 167:21, 168:7, 168:10, 168:15, 168:22, 186:4, 186:10, 187:16, 196:10, 196:11, 196:22, 197:4, 202:9, 202:10, 202:15 4000 3:8 41 44:6, 229:15,	229:16, 229:18, 229:19, 229:21, 230:3, 242:22 42 210:15, 229:15, 229:16, 229:18, 229:19, 230:3, 230:19 44 166:5, 166:10, 166:13, 167:4, 207:14, 207:16, 207:18, 266:7, 266:17, 266:18, 267:19 440 26:14 441 26:14, 71:19, 74:4, 74:5, 75:9, 80:3, 208:15, 218:19 442 80:3 443 80:3, 80:16, 198:8, 217:4 444 3:10 446 16:11, 16:14, 17:14, 23:1, 23:2, 26:3, 68:5, 68:16, 70:15, 71:1, 71:7, 76:4, 77:2, 77:5, 77:12, 79:5, 79:12, 79:17, 82:3, 82:9, 82:10, 83:1, 83:15, 133:7, 133:10, 162:9, 163:2, 163:7, 163:9, 163:12, 164:2, 166:22, 167:8, 168:17, 207:6, 209:17,
---	---	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 119 of 120

209:18, 209:21, 211:3, 214:5, 214:12, 214:17, 214:19, 215:7, 215:10, 215:16, 216:3, 216:13, 216:19, 243:13, 245:14, 246:9, 252:18 45 163:15, 163:20, 164:1, 164:6, 164:13, 164:18, 165:3, 167:8, 168:17 46 202:18, 202:19, 203:5, 203:12, 203:13, 203:20, 204:11, 204:13, 205:5, 205:12, 206:2, 206:12 462946 1:26 47 154:16, 264:1, 264:2, 264:5, 264:10 48 219:14 49 228:8, 264:2, 264:6, 264:10 5 5(a) 191:14 5-0 211:19 50 115:12, 115:14, 168:7, 168:10, 168:15, 168:22, 174:3, 174:9, 174:11, 174:16, 211:13, 211:19, 211:20, 212:1, 212:22, 263:8,	263:9, 263:16, 264:14, 264:15, 264:18 51 212:9, 263:8, 263:9 52 264:15, 264:18 53 214:7 54 210:19 57 255:2, 255:7, 255:9, 255:12, 259:5, 259:10, 259:15 58 236:6, 236:8, 236:9 59 1:22, 5:12, 267:19 6 6-8 252:3, 252:4 60 255:2, 255:8, 255:9, 255:12 61 236:4, 236:7, 236:9, 251:8, 251:9, 251:15, 255:17, 255:19, 256:7, 256:12 62 251:15 63 251:9, 251:10, 251:16, 254:12, 254:13 64 153:18, 153:19, 153:20, 251:18, 252:8, 254:8, 254:10, 254:11, 258:16, 258:20	65 151:9, 151:10, 151:11, 151:14, 153:18, 153:21, 154:2, 154:5, 154:6, 255:18, 255:19, 256:7, 256:12, 259:5, 259:11, 259:16 66 151:12, 250:14, 250:15, 250:16, 251:1 67 152:15 68 231:15, 231:17, 231:22, 232:5, 232:9, 251:19, 251:22, 252:1, 252:2, 252:8 69 136:12, 136:13, 136:15, 136:18, 137:5, 137:14, 138:5, 139:21, 141:4, 141:14, 143:4, 146:12, 146:15, 146:16 7 70 232:16 704 3:10 71 232:1 72 221:12 75201 3:18 7891 3:19 8 8 1:22, 5:12, 267:19	8,691,446 1:7, 4:10, 7:13, 16:12 80 99:20, 104:18, 145:5, 152:2, 236:2 81 223:1, 237:9, 237:16, 237:18 82.4 239:18, 240:13 82.6 235:15, 236:2, 240:13 83 232:22, 237:9 84 233:1, 237:17, 237:18 86.2 235:8, 235:10, 236:1, 236:2 89.2 239:14 8th 68:20, 70:12, 72:6, 75:5 9 9 28:10, 28:14 9,077,035 1:10, 7:14, 16:20 9,350,019 1:13, 7:15, 17:7, 147:13 90 140:21, 141:12, 141:19, 141:21 91 31:10, 66:1
---	---	--	---

PLANET DEPOS

888.433.3767 | WWW.PLANETDEPOS.COM

AMPEREX EX. 1030

AMPEREX TECHNOLOGY LIMITED v. MAXELL, LTD.

IPR2021-01440

Ningde Amperex Tech. Exhibit No. 2042

Zhuhai CosMX Battery Co. Ltd. v. Ningde Amperex Tech.

IPR2025-00431, U.S. Patent No. 11,799,131

Page 120 of 120