

Transcript of Brett Lucht, Ph.D.
Conducted on April 2, 2026

1 (1 to 4)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
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1	DEPOSITION EXHIBITS	5	1 Exhibit 1044, correct?	7
2	BRETT LUCHT, Ph.D.		2 A Yes.	
3	April 2, 2026		3 Q And you prepared that declaration in	
4	NUMBER DESCRIPTION MARKED		4 response to the declaration of Dr. Dean Wheeler in	
5	Exhibit 1050 Copilot Translation 89		5 this proceeding and patent owner's response,	
6			6 correct?	
7			7 A Yes.	
8	PREVIOUSLY MARKED EXHIBITS		8 Q Did you review any other materials besides	
9	NUMBER DESCRIPTION PAGE		9 the exhibits cited in your declaration and that	
10	Exhibit 1001 11		10 response and Wheeler declaration in preparing your	
11	Exhibit 1005 90		11 opinions?	
12	Exhibit 1006 36		12 A No.	
13	Exhibit 1010 59		13 Q None of the new arguments or opinions in	
14	Exhibit 1044 7		14 your supplemental declaration are the result of	
15	Exhibit 2042 28		15 any new experimental work that you performed,	
16			16 correct?	
17			17 A Yes, that is correct. I have performed no	
18			18 new additional experiments.	
19			19 Q And, in fact, you have not performed any	
20			20 experiments, laboratory or otherwise, relating to	
21			21 this IPR proceeding, correct?	
22			22 A Specifically related to this IPR	
1	PROCEEDINGS	6	1 proceeding, no, but relating to the prior court --	8
2	BRETT LUCHT, Ph.D.,		2 or whatever it is, district court case of the	
3	called as a witness, having been duly sworn, was		3 parent patent of the '131 patent, I did do	
4	examined and testified as follows:		4 experiments.	
5	EXAMINATION		5 Q You did not do experiments on the	
6	BY MR. COX:		6 formulations of Zeng or Sunose or Zhou, correct?	
7	Q Morning, Dr. Lucht.		7 A That's not -- I believe I made	
8	A Good morning.		8 formulations of Zeng.	
9	Q You understand that I'm Brady Cox and I		9 Q And you have not relied on those in your	
10	represent the patent owner Ningde Amperex		10 declarations in this IPR proceeding, correct?	
11	Technology, Ltd. in this IPR proceeding?		11 A No, I have not relied upon those in the	
12	A Yes, I do.		12 declarations or the deposition -- previous	
13	Q And you gave a deposition in connection		13 deposition, but I did do those experiments, so...	
14	with this IPR proceeding, which is IPR2025-00431,		14 Q You have not manufactured any electrodes	
15	previously, correct?		15 following Sunose's described structure or	
16	A Yes, I did.		16 technique, correct?	
17	Q Are you aware of anything that was		17 A No, I have not.	
18	incorrect that you said during that initial		18 Q And at no point did you perform the single	
19	deposition?		19 test of injecting Zeng's electrolyte into Sunose's	
20	A Not that I'm aware of.		20 battery structure that you claim would be the	
21	Q And you have, since that deposition,		21 single test needed to confirm compatibility,	
22	prepared a new declaration that you have as		22 correct?	

9 1 A I did not do that experiment, correct. 2 Q You did not substitute propyl propionate 3 for ethyl acetate in Zhou's example 8 to see what 4 would happen, correct? 5 A That is correct. I did not conduct that 6 experiment. 7 Q You agree that the translated language of 8 Zeng may suggest adding a superfluous lithium 9 hexafluorophosphate solution, correct? 10 A I don't agree with that, no. It's -- what 11 is stated would make no sense to any POSITA. And 12 so therefore it -- the only logical way a POSITA 13 would prefer -- would perform that experiment is 14 the way that I described in my declaration and 15 supplemental declaration. 16 Q I'm sorry, I didn't realize you weren't 17 finished. Do you have anything else to add? 18 A No. 19 Q Do you dispute the accuracy of the English 20 translation of Zeng provided by CosMX in this IPR 21 proceeding? 22 A It's -- it is a certified translation.	11 1 that to me. 2 Q Would you please turn to table 2 of the 3 '131 patent. 4 A Okay. Hold on. Which folder is the '131 5 patent in? 6 Q That should be in the 1000 series of 7 exhibits, Exhibit 1001. 8 A Okay. The '131 patent? 9 Q That's right. 10 A I have it open. 11 Q And you're familiar with this patent at 12 this point, correct? 13 A I'm -- yes, I'm familiar with this patent 14 and multiple other patents from this family of 15 patents, yes. 16 Q Would you go to table 2, which is on PDF 17 page 19 around column 28. 18 A PDF page 19? 19 Q Yes. Do you see table 2 there in kind of 20 the middle of column 28? 21 A Yes, I do. 22 Q Okay. Do you recall what the Z weight
10 1 And so my understanding of certified translations 2 is that they are valid translations. 3 Q Do you speak Mandarin, Dr. Lucht? 4 A No, I do not. 5 Q Okay. And did you do anything to 6 investigate or analyze the accuracy of the 7 translation of the paragraph surrounding 8 embodiment 1 that's at dispute between the 9 parties? 10 A I did not do any independent investigation 11 of translations or anything like that, no. 12 Q Are you aware of any other investigation, 13 independent or otherwise, that's happened? 14 A Not that I'm aware of. 15 Q CosMX is a Chinese company, correct? 16 A That is my understanding, yes. 17 Q And did anyone at CosMX approach you and 18 tell you this translation of Zeng's declaration is 19 incorrect? 20 A In regards to this IPR proceedings, I have 21 not been in communication with anybody from CosMX 22 directly, and so therefore, no, nobody has stated	12 1 percent refers to? 2 A The Z weight percent refers to the weight 3 percent of propyl propionate. 4 Q Would you agree that as between examples 5 S2-2 and D2-3, that the Z weight percent, that is 6 the amount of propyl propionate, is identical 7 between those two embodiments? 8 A Which ones again? Say that again. 9 Q Yes. S2-2 and D2-3. 10 A S2-2 contains 10 percent of the propyl 11 propionate. And D2-3 contains 10 percent of the 12 propyl propionate. So those two numbers are the 13 same. 14 Q Okay. And do you recall what the X weight 15 percent refers to? 16 A The X weight percent refers to the 17 dinitrile. 18 Q And would you agree that for those same 19 two examples, S2-2 and D2-3, the X weight percent, 20 that is the amount of dinitrile, is identical 21 between those two examples? 22 A The X weight percent between those two

13 1 examples is both 4 as -- as it is for every value 2 in that table, actually, every -- every sample. 3 So, yes, they are the same. They're both 4. 4 Q And the Y weight percent refers to 5 trinitrile percentage, correct? 6 A Yes. 7 Q And between example S2-2 and example D2-3, 8 those weight percents do vary from 1 weight 9 percent in the case of S2-2 and 5 weight percent 10 in the case of D2-3? 11 A Yes, that is correct. 12 Q And as a consequence, the Y/Z ratios of 13 those two examples also differ, correct? 14 A Yes, that is correct. 15 Q And so would you agree that the only 16 difference between the preparation of examples 17 S2-2 and D2-3 is the Y value, which in turn 18 affects the Y/Z ratio? 19 A Hold on. I'm just looking for what the 20 description is of the table 2 to confirm that. I 21 mean, that's the -- that appears to be what it is 22 in the table. Once again, I -- it doesn't	15 1 similar, but there is a larger difference after 2 400 cycles. 3 Q Is 111.3 greater than 95.7? 4 A 111.3 is greater than 95.7. 5 Q And is a high DC internal resistance after 6 400 cycles a desirable or undesirable 7 characteristic in a lithium-ion battery? 8 A In general, in lithium-ion batteries the 9 lower resistance is preferred. 10 Q Now we're going to do kind of the same 11 exercise, for example, S2-5 and D2-4, if you kind 12 of get those lined up. 13 A Okay. S2-5? 14 Q You'll agree that these two examples, S2-5 15 and D2-4, have the same Z weight percent, correct? 16 A S2-5 have the same Z percent, yes. 17 Q And you would agree that the X weight 18 percent for these two examples, like all examples 19 on this table, are the same at 4 weight percent, 20 correct? 21 A Yes. 22 Q And the Y weight percent varies between
14 1 specifically specify what everything else is. And 2 it says that, right below there: As shown in 3 Table 2, when the content of propyl propionate is 4 within the range of 5 weight percent to 50 weight 5 percent. I would assume somewhere else in the 6 patent it describes what the rest of the 7 components are, but I don't see it right there in 8 the table. 9 Q Would you agree that the DC internal 10 resistance of D2-3 after 400 cycles is higher than 11 the same value for S2-2? 12 A So S2-2 is 95.7. And D2-2 -- sorry, D2-3 13 is 111.3. So, yes, it is -- it's a little higher, 14 yes. Interestingly, you know, in the -- after 15 200 cycles the difference is significantly 16 smaller. It's only 83.1 percent of the S2-2 -- or 17 83.1 and the D2-3 is 85.4. So after 200 cycles 18 they're relatively similar. 19 Q And the values shown here are not 20 percentages, right? They're in milliohms? 21 A In milliohms, yes, sorry. Milliohms. 22 After 200 cycles, the two values are relatively	16 1 those two examples, S2-5 and D2-4, correct? 2 A Yes, that is correct. 3 Q What is the Y/Z ratio in example S2-5? 4 A The Y/Z ratio is 0.02. 5 Q And for example, D2-4, what's the Y/Z 6 ratio? 7 A 0.0025. 8 Q Okay. So would you agree, again, that the 9 only difference in the preparation of these two 10 examples, S2-5 and D2-4, is the Y value, which in 11 turn affects the Y/Z ratio? 12 A Yes, that is correct. 13 Q And would you agree that the DC internal 14 resistance of D2-4 is greater after 400 cycles 15 than the same DC internal resistance of S2-5 after 16 400 cycles? 17 A Looking at the table, so it's S-24 -- 18 S-25, correct? We were just talking about 54 -- 19 yes, so S2-5, the DC resistance after 400 cycles 20 is 98.3, while for the D2-4 it's 109.4. Although 21 I'll also point out, it's interesting that at 22 the -- for the fresh battery, which would be the

17 1 battery as purchased, the S2-5 has a higher 2 resistance, which would be less desirable than the 3 D2-4. The S2-5 has a resistance of 56.3, while 4 the D2-4 has a resistance of 53.2. So as the 5 battery is fresh and purchased, a D2-4 has a 6 superior resistance. 7 Q Would you say it's a superior resistance 8 or roughly the same resistance? 9 A Well, they're similar. They're similar. 10 It's a little better. Much like I just said with 11 the other case, where with the S2-2 after 200 12 cycles versus the D2-3 after 200 cycles, they're 13 relatively similar. You know, the S2-2 slightly 14 better. But as I said, in this case the S2-5 -- 15 or the D2-4 -- the fresh battery's slightly better 16 than the D2-5, but they're similar. 17 Q You testified in your supplemental 18 declaration that -- at paragraph 35 that it's your 19 understanding that the patent owner and 20 Dr. Wheeler believed that the maximum density of 21 the composite electrode active material is 22 4.5 grams per cubic centimeter, correct?	19 1 I -- yeah, I -- I have no reason to dispute his 2 math, as I think I said previously to you, that 3 the math looks reasonable. I just didn't go 4 through it all myself. 5 Q Right. And my question is just, you know, 6 since that deposition, since that time in 7 preparing this declaration, did you go back and do 8 any double-checking or investigation? Or in 9 preparation for this deposition have you done any 10 checking? 11 A No, I have not. 12 MR. PHILBIN: Objection to form. 13 THE WITNESS: Did you get all that, 14 Micheal? Was that okay since Steven -- 15 MR. COX: Yeah. He dropped a small 16 objection to form in, Mr. Johnson. I don't know 17 if you're watching the realtime. 18 BY MR. COX: 19 Q Do you know what level of porosity is 20 assumed in Dr. Wheeler's theoretical maximum 21 compaction density calculation? 22 A I don't recall.
18 1 A Sorry, I just -- where are you at in my 2 supplemental declaration? I just switched over. 3 Q I'm sorry, that's at paragraph 35. 4 A Paragraph 35. I further understand that 5 PO and Dr. Wheeler believe that the maximum 6 density of the composite electrode active material 7 is 4.5 grams per cubic centimeters. Yes. 8 So what's your question? 9 Q So, yeah, that -- that's your 10 understanding, correct? 11 A That is my understanding of what 12 Dr. Wheeler calculated. 13 Q You did not confirm Dr. Wheeler's 14 calculations, correct? 15 A As it says right there, I have not 16 confirmed Dr. Wheeler's calculations. 17 Q But you do not have any reason to dispute 18 those calculations, correct, of maximum 19 theoretical density of the composite electrode 20 active material? 21 A I believe as -- I believe you asked me the 22 same question in the last deposition. I think	20 1 Q Do you know that it's 0 percent? 2 A That -- you know, I think from my 3 recollection, that is consistent, but I said I 4 think I -- I didn't -- I didn't look back over 5 Dr. Wheeler's declaration in preparation for this. 6 Q Is the level of porosity of a electrode 7 active material an important parameter when 8 designing a lithium-ion battery cell? 9 A Can you state that again just so I -- you 10 know. 11 Q Sure. 12 Is porosity of an electrode active 13 material an important parameter when designing a 14 lithium-ion battery cell? 15 A I mean, it's a -- certainly a parameter 16 that you would want to look into. I mean, I think 17 it's somewhat dependent upon what your application 18 is, how important that is going to be. But it's a 19 factor that would be considered for sure. 20 Q Are you -- have you ever designed and 21 manufactured lithium-ion batteries, Dr. Lucht? 22 A Have I -- I mean, we -- we in my lab build

21 1 coin cells all the time. I mean, I don't really 2 do it. I have made a few cells myself, but my 3 grad students, I mean, they're post docs there. 4 Thousands of cells have been made in my lab. 5 Q Are you aware of making any working 6 battery that had a porosity of zero in the active 7 material? 8 A State that question again. 9 Q Do you or your students ever manufacture 10 an electrode active material that has a porosity 11 of zero? 12 A Well, with -- a battery that has a lithium 13 metal anode would have a porosity of zero. So we 14 have done work with lithium metal batteries. 15 Q For a composite electrode active material 16 that has other active materials of the type 17 described in Sunose, are you aware of whether the 18 active material would work at a porosity of zero? 19 A I think you would need to have some level 20 of porosity in the electrode to allow the lithium 21 ions to interpolate into and out. 22 THE REPORTER: Can you repeat the end of	23 1 Q Do you dispute that or disagree with that? 2 A I -- you know, I -- I don't know if that 3 was the statement that he made or not. I mean, 4 you're telling me this. You know, that -- that 5 number seems like it might be a reasonable number, 6 but I'm not certain. 7 Q And is it true or not true that the 8 typical porosity in a lithium-ion battery would 9 typically be at least 20 percent porosity? 10 A Once again, I'm not sure. I don't know. 11 Q And I'm not asking you about his 12 testimony. I'm asking you do you know if that is 13 a typical porosity for a lithium-ion battery? 14 A And I'm saying I'm not certain. 15 Q Okay. Do you understand that 16 Dr. Wheeler's calculated maximum theoretical 17 density for a active layer would decrease as the 18 porosity increases above 0 percent? 19 A Well, yeah. I mean, if you -- if there is 20 additional porosity, that that value would 21 decrease, yes. 22 Q So the theoretical maximum density of
22 1 that answer? 2 THE WITNESS: Excuse me? 3 THE REPORTER: Can you repeat the end of 4 that answer? 5 A I think -- what was I saying? You would 6 have some porosity -- you would need to have some 7 porosity in the electrode material to allow the 8 lithium-ion batteries to interpolate into and out 9 of the electrode materials. 10 BY MR. COX: 11 Q You familiar with Dr. Gido, CosMX's expert 12 witness in connection with a different patent in 13 these IPR proceedings? 14 A No, I am not. 15 Q Have you had any conversations with 16 Dr. Gido? 17 A No, I have not. 18 Q Okay. Are you aware that he said in his 19 deposition that the minimum amount of porosity in 20 an active layer would be, quote, certainly more 21 than 10 percent, end quote? 22 A I'm not aware of that quote.	24 1 4.5 grams per cubic centimeter would decrease to a 2 maximum theoretical density of 4.05 grams per 3 cubic centimeter if you assume 10 percent 4 porosity, correct? 5 A I haven't done that math. 6 Q Are you able to do that math, 4.5 7 times .9? 8 A 4.5 times .9 basically -- that's -- that 9 appears reasonable. I haven't done -- you know, 10 I've said I prefer not to do -- you know, but that 11 appear -- that number appears reasonable. 12 Q At 20 percent porosity, that theoretical 13 maximum density would go down to about 3.6 grams 14 per cubic centimeter, correct? 15 A That is -- 16 (Simultaneous discussion interrupted by 17 reporter.) 18 A That number appears reasonable. 19 BY MR. COX: 20 Q Do you know what porosity Sunose uses in 21 its embodiments? 22 A I'd have to look at the table again, but

25 1 the examples that I reference, examples 3 and 4, 2 3 and 4 report compaction densities, D1 at 4.4, D2 3 at 4.0, D1 at 4.0 and D2 at 4.0. 4 Q A density of 4.4 would represent about 5 2 percent porosity, correct? 6 A Once again, I'd have to do the exact math, 7 but that number seems reasonable. 8 Q Is porosity of 2 percent achievable or 9 desirable in a cathode active material? 10 MR. PHILBIN: Objection, form. 11 A I mean, once again, I think that would be 12 a relatively low, low -- low porosity. However, 13 there may be an application where that's viable. 14 BY MR. COX: 15 Q Do you know if Sunose's porosity was 16 2 percent? 17 A Excuse me, was that a question? I didn't 18 follow what the question was. 19 Q Do you know if Sunose's porosity was 20 2 percent? 21 MR. PHILBIN: Object to form. 22 A I don't understand what your question is	27 1 for the ions to flow? 2 A I don't know. 3 Q You recall in a prior IPR proceeding of 4 yours, IPR2021-1440, you served as an expert for 5 the patent owner? 6 A Like I said, I've done quite a few of 7 these. The numbers, you'd have to show me what it 8 is, but I've served as an expert witness on over a 9 dozen cases, so... 10 Q And this was in the Amperex Technology 11 versus Maxell Holdings -- 12 A Okay. 13 Q -- case, if you recall that. 14 A Yeah. 15 Q And I asked you some questions about that 16 testimony in our prior declaration -- in our prior 17 deposition in this IPR proceeding, correct? 18 A You -- once again, you may have. I just 19 got deposed two weeks ago on the district court 20 case, too, so some of these things kind of blur 21 together. 22 Q Fair enough.
26 1 exactly. You just said a minute ago that the 4.4 2 compaction density would correspond to a 2 percent 3 percentage. And I said that looked like -- it 4 sounded like a reasonable number, but I guess I'm 5 not -- I'm not following how to answer what your 6 question is. 7 BY MR. COX: 8 Q There's an embodiment in Sunose that you 9 contend has a density of 4.4 grams per cubic 10 centimeter, correct? 11 A Yes. 12 Q And that amount is about 98 percent of the 13 theoretical maximum of 4.5 grams per cubic 14 centimeter, correct? 15 A Well, once again, utilizing the numbers 16 that Dr. Wheeler utilized, which I haven't 17 independently confirmed, and what you just said in 18 terms of the estimate from, you know, 2 percent, I 19 mean, that -- that appears to be that what -- what 20 the porosity of that electrode would have. 21 Q Is a porosity of 2 percent sufficient to 22 allow electrolyte-filled pathways in the cathode	28 1 Do you agree that lithium batteries are 2 very, very sensitive to very small changes? 3 A I mean, it depends on what the changes 4 are, but I think what you're talking about is 5 referencing to some statement that I made in that 6 IPR proceeding. And I'd be happy to review that 7 paragraph if you'd like me to. 8 Q Sure. We can find that. Give me just a 9 minute to pull it up. This is Exhibit 2042 in 10 this proceeding. 11 A 2042. 12 Q And if you go to page 156, which is at PDF 13 page 39. 14 A Page 38, 39. Okay. Yeah. 15 Q So you would agree with the statement that 16 lithium batteries are very, very sensitive to very 17 small changes, correct? 18 A Which line are you on? I just want to 19 read this. 20 Q I'm at lines 4 through 7 of page 156. 21 A 156. Let me read this real quick. 22 Q Sure.

29 1 (Witness reviews document.) 2 A I think I'm looking at the wrong page. 3 You said 156? 4 BY MR. COX: 5 Q Sorry. It's PDF page 39. 6 A Yeah. 7 (Simultaneous discussion interrupted by 8 reporter.) 9 BY MR. COX: 10 Q I'll represent to you it's 2042. And if 11 you see, there's four pages on a page here -- 12 (Simultaneous discussion interrupted by 13 reporter.) 14 A So page 156? So 156? 15 BY MR. COX: 16 Q That's right. 17 A So the question was: And that would 18 include the electrolyte formulation? 19 Answer: That -- 20 Q The second -- 21 A What? 22 Q The second sentence.	31 1 Q At 156, line 5, the last word at the end 2 of that line says lithium. 3 A Yes. 4 Q Lithium batteries are very, very 5 sensitive -- 6 (Simultaneous discussion interrupted by 7 reporter.) 8 A Okay. I'm sorry. 9 I see the statement. 10 BY MR. COX: 11 Q Okay. Do you agree that lithium batteries 12 are very, very sensitive to very small changes? 13 A They can be. 14 Q You also testified at page 248, which is 15 on PDF page 62, that: Battery electrolyte systems 16 are very complex. Whenever you change one thing, 17 it can change a lot of other things, correct? 18 A Down there at line 20, I mean, these -- 19 these battery electrolyte systems are very 20 complex. When you change one thing, it can change 21 a lot of other things. 22 Yeah, that is what -- once again, that can
30 1 A I mean, I would say in terms of when 2 you're designing and developing a battery, all of 3 the different components, including the cathode, 4 are things that could be adjusted? 5 Q No. The second sentence of the prior 6 answer you were reading beginning at line 5. 7 A The prior sentence. You would have to 8 consider all the components, everything. Above 9 that: I think when you're designing a battery, 10 you have to consider all of the active materials, 11 both the cathode and the anode. 12 Q Do you see the sentence where you state: 13 Lithium batteries are very, very sensitive to very 14 small changes? 15 A I'm really sorry. I don't see where -- I 16 mean, I believe that I said that. I just don't 17 see that on this page. I am -- this is 18 Exhibit 2042, IPR2025, 441 PDF. I'm on the 19 transcript page 155 within the transcript, 20 page 156. I don't -- I don't -- I'm confused 21 because I don't see that -- I don't see the 22 sentence you're talking about.	32 1 be the case. 2 Q And you agree that perfecting the amounts 3 of additives in solvents is not an exact or 4 straightforward science, correct? 5 A State that again. 6 Q Perfecting the amounts of additives in 7 solvents is not an exact or straightforward 8 science, correct? 9 A I mean, is that a statement that I made 10 somewhere that you're asking me? I don't recall 11 making that statement. I don't -- I don't 12 necessarily -- would agree with that, but I don't 13 know what that -- where you're getting that 14 statement from. 15 Q My question is, do you agree or disagree 16 with the statement that perfecting the amounts of 17 additives in solvents is not an exact or 18 straightforward science? 19 A I don't think -- I don't think that's the 20 terminology that I would use to describe that. 21 But, I mean, that's -- I mean, it's -- there's a, 22 you know, systematic methodology to optimizing

33 1 electrolyte formulations. 2 Q Is it true that when combining electrolyte 3 and electrode systems that typically you would do 4 a whole bunch of testing? 5 A State that again? 6 Q Is it true that when combining electrolyte 7 and electrode systems, that typically you would do 8 a whole bunch of testing? 9 A That -- I don't -- once again, when you're 10 combining -- that's what you're doing. So I 11 don't -- your question isn't really making any 12 sense to me. I'm sorry. Could you try and 13 restate it in a different fashion? 14 Q If you are combining electrolyte systems 15 from one teaching or reference with electrode 16 systems from a different teaching or reference, is 17 it true that typically you would do a whole bunch 18 of testing? 19 A I mean, you would do -- you would do some 20 testing. I don't know if I'd say a whole bunch of 21 testing. I mean, once again, you would want to 22 test the system. You would want to test the	35 1 calculated numbers would not correctly reflect the 2 actual Y/Z ratio disclosed in Zeng, correct? 3 A So first off, it would make absolutely no 4 sense to do something other than add the salt to 5 the solvent blend. So what was the other part of 6 your question? 7 Q My question is if that assumption is 8 incorrect, which I'm not asking you to agree with, 9 but if that assumption is incorrect, then your 10 calculated Y/Z ratio would not accurately reflect 11 the actual amounts of lithium hexafluorophosphate 12 or other materials in Zeng, correct? 13 A So if that -- my interpretation of that 14 electrolyte -- the preparation of that electrolyte 15 formulation was wrong, which would not make any 16 sense, and you did as what Dr. Wheeler suggests, 17 adding a mixture of some unknown solvent of an 18 unknown quantity, which no POSITA would do, then, 19 yes, that would change the values of the Y over Z. 20 Is that what your -- the question was? 21 Q The certified translation of Zeng states 22 that -- and we can go to it. I believe that's
34 1 electrolyte in it. But, once again, if the system 2 worked with similar electrode materials, then it 3 would be obvious that it would most likely 4 function fine. 5 Q You agree that both small and large 6 changes to electrolyte formulations can result in 7 large differences in performance, correct? 8 A I mean, once again, it depends upon what 9 the change is. A small change in the solvent 10 system is not usually going to -- you know, not 11 make a very large difference in the cells. But 12 then again, you know, a small change in some -- 13 something else might. But, I mean, I -- your 14 question's not very well defined. 15 Q Your theory in your original declaration 16 and your supplemental declaration regarding Zeng's 17 Y/Z ratio depends on your assumption that Zeng 18 instructs a POSITA to add solid lithium 19 hexafluorophosphate to its solvent mixture, 20 correct? 21 A Yes. 22 Q And if that assumption is incorrect, your	36 1 Exhibit 1006. 2 A Okay. 3 Q Paragraph 37. 4 A Yes. 5 Q The certified English translation says: 6 Then, lithium hexafluorophosphate of a 7 concentration of 1.0 mol/L per liter is slowly 8 added to the mixed solution. Correct? 9 A That is what is stated there. 10 Q Okay. The of a concentration of 1 mol/L 11 per liter, what noun does that modify? 12 A What noun does it modify? 13 Q Yeah. 14 A The lithium hexafluorophosphate. 15 Q Does solid lithium hexafluorophosphate 16 have a concentration of 1 mole per liter? 17 A The solid -- lithium hexafluorophosphate 18 is a solid. So that -- molarity is a mol/L per 19 liter volume. And so it's solid that you don't -- 20 you wouldn't typically refer to solid as a 21 molarity. 22 Q You agree that as of the time of Zeng,

37 1 commercially available 1 molarity lithium 2 hexafluorophosphate solutions existed and were 3 available for purchase, correct? 4 A Yes, I purchased them myself. 5 Q And, in fact, 1 molarity is common for an 6 off-the-shelf lithium hexafluorophosphate 7 solution, correct? 8 A 1, 1.2 – 1 is definitely a very common 9 electrolyte formulation. I would say 1 molar – 10 lot of our research is done with 1 mole. 11 Q You have no evidence or testimony from 12 Zeng's inventors about what they subjectively 13 intended with respect to this paragraph, correct? 14 A I do not have – I have not spoken to nor 15 seen any transcripts or anything from the 16 inventors of this. But, once again, as a POSITA, 17 the only thing – the only thing that makes any 18 sense is dissolving the salt in the solvent blend. 19 No POSITA would do what Dr. Wheeler said. 20 Q Or what Zeng said? 21 A Zeng – there is a typographical error in 22 Zeng. That's all I can say. It's obvious that –	39 1 unknown solvent. No battery scientist, no POSITA, 2 would add an unknown solvent of an unknown volume 3 to a highly -- as you just said, these electrolyte 4 formulations, you know, they're specific 5 formulations. You wouldn't add an unknown solvent 6 of an unknown quantity. You wouldn't do that. 7 Q Do you believe Zeng could have identified 8 the amount of lithium hexafluorophosphate solution 9 that they added and that would resolve the 10 ambiguity? 11 A Once again, you have to restate that 12 question. I don't understand what you're trying 13 to ask. 14 Q If Zeng's authors were using a liquid 15 solution of lithium hexafluorophosphate and they 16 had indicated in this paragraph how much of that 17 solution they added, would that resolve your 18 ambiguity? 19 A I mean, they -- if -- for what you're 20 describing, which is not what the patent 21 describes, they -- you would have to -- you 22 would -- you would want to have the information of
38 1 as a POSITA, it's obvious you're making a 1 molar 2 solution. And I agree with the PTAB office, which 3 I believe in their statement when they responded 4 to the initial -- the initial declarations, that 5 they agreed with me. 6 Q So is it your position that the original 7 Zeng document in Chinese contained a typographical 8 error? 9 A I don't know about the original 10 typographical -- the original Chinese -- the 11 Chinese -- Chinese patent. All I can tell you is 12 in this -- reading this description as a POSITA, 13 as I said in multiple declarations and as I said 14 multiple times when you deposed me the last time, 15 the only -- the only obvious thing -- the obvious 16 thing for a POSITA to do would be to dissolve the 17 salt, the hexafluorophosphate, in the precisely 18 described blend of solvents of 25 percent EC, 19 10 percent PC -- or sorry -- mass ratios we've 20 used. 25:10:30:5:10:20 of the EC:PC:DEC:FB:EP and 21 PP. 22 It makes absolutely no sense to add an	40 1 what solvent it is and how much of that -- of that 2 electrolyte you're adding, which neither of those 3 two things are there. So as I said many times now 4 and I've said in declarations, from a POSITA's 5 perspective, the only thing that makes sense is 6 adding the salt to the well-defined mixture 7 solvents. And I believe, you know, as I said just 8 a second ago, the PTAB office in their initial -- 9 in their initial response, agreed with my 10 interpretation. 11 Q So you don't believe that it's possible 12 that Zeng's authors could have used lithium 13 hexafluorophosphate solution of a concentration of 14 1.0 mol/L per liter and just omitted saying what 15 the solvent was and how much they were adding? 16 MR. PHILBIN: Object to form. 17 BY MR. COX: 18 Q You believe that's impossible? 19 MR. PHILBIN: Same objection. 20 A Once again, I'm not going to comment about 21 what's possible and not possible. It makes no 22 sense in terms of a POSITA. You would not -- no

41 1 electrolyte scientist would add an unknown solvent 2 with an unknown quantity. It's just not what you 3 would do. This patent -- this patent here and all 4 of the '363 patents from -- from ATL, they all 5 have very specific electrolyte formulations. They 6 have these -- they show what all the electrolyte 7 components are. They don't add an unknown solvent 8 of an unknown quantity. So it makes no sense. 9 BY MR. COX: 10 Q You did not perform -- moving on to 11 criticality now. 12 You did not perform any independent 13 testing to evaluate whether the claimed Y/Z range 14 in the '131 patent is critical, correct? 15 A As I said, I did not conduct any 16 additional experiments. But as stated in my 17 declaration, the values of the examples that are 18 outside of the range claimed are not that 19 different than the ones inside of the claimed 20 range. And my understanding of the legal terms of 21 criticality, which I'm not a lawyer, does not 22 warrant that to be considered the criticality.	43 1 A So, once again, in table 2 the X values 2 are constant and the Y and the Z values vary. And 3 so for some of those -- actually, for many of 4 them, the X plus Y is going to be the same because 5 most of these are -- B is 1. The C value changes 6 quite a bit. 7 Q In the table 2 examples you rely on and 8 compare, those examples do not hold other 9 variables constant besides the Y value and Y/Z 10 ratio, correct? 11 MR. PHILBIN: Object to form. 12 A Say that again? 13 BY MR. COX: 14 Q The examples that you compare in 15 paragraphs 27 to 30 do not hold all other 16 variables constant besides Y and the Y/Z ratio, 17 right? 18 MR. PHILBIN: Same objection. 19 A I'd have to look at all of them, but the 20 D2-4 does not. So that's one of the ones that I 21 give. D2-3, the B -- the Y value also changes, 22 so -- okay. You know, like I said, definitely
42 1 Q You compared on paragraphs 27 to 30 of 2 your supplemental declaration, Exhibit 1044 -- 3 A Hold on. Let me find it. It's open here 4 somewhere. What paragraph are we at again? 5 Q Paragraphs 27 through 30. 6 A Okay. I'm at 27. 7 Q This is where you performed some 8 comparisons of different examples in that table 2 9 that we were looking at earlier, correct? 10 A Yes. 11 Q When you compare your individual data 12 points here across the different formulations, 13 those samples vary not only in the Y/Z ratio, but 14 also in Y and Z and X plus Y and X over Y, 15 correct? 16 MR. PHILBIN: Objection, form. 17 A I would -- yes, if you're going to -- I'd 18 have to look back at the table again, which let me 19 do that just to confirm. So this is table -- is 20 this table 2? 21 BY MR. COX: 22 Q Yes.	44 1 some of them are that way. The D2-1 value, 2 that's -- that has the same A and B -- or X and Y, 3 sorry, the same X and Y. So some of them do, some 4 of them don't. 5 BY MR. COX: 6 Q Sorry, when you say the D2-1 value has the 7 same X and Y, what are you comparing it against? 8 A Well, most of the S examples. 9 Q The C value -- the Z value is different, 10 correct? 11 A For the D2 -- the Z -- the Z value is 12 different for pretty much all of them. Most of 13 the Z values are different. 14 Q And would you agree that if other 15 variables are not held constant, you cannot 16 isolate the effect of changing the Y/Z ratio from 17 the effects of changing those other variables, 18 right? 19 A State that again? 20 Q If other variables in the formulation are 21 not held constant, you cannot isolate the effect 22 of the Y/Z ratio from those other variables,

45 1 right? 2 A So -- I mean, yes. If you have -- if you 3 have a system where you're varying more than one 4 thing, it's difficult to isolate the difference of 5 that -- of that ratio, yes. 6 Q You cite the related '910 patent as having 7 a different Y/Z ratio low-end limit of about .02 8 as compared to the '131 patent's about .01, 9 correct? 10 A I may have said that. Can you direct me 11 to where I stated that just to confirm? 12 Q Sure. 13 A Because there's a lot of different claims 14 in the two patents. 15 Q This is at paragraph 31. 16 A Yes. So what's your question? 17 Q Just that you cite this and you make this 18 argument. 19 A Yes. 20 Q Okay. And you say that: This permitted 21 variation in the claimed Y/Z range contradicts 22 patent owner's and Dr. Wheeler's claim that the	47 1 legal aspect of what the question is I really 2 don't understand. 3 BY MR. COX: 4 Q You understand that patent owner asserts 5 that the range .01 to .3 is critical, correct? 6 A I understand what they're trying to claim 7 is that the about 0.01 to about 0.3 is critical is 8 what they're claiming. 9 Q And you believe that because another 10 patent in the family claims a range of about .02 11 to about .3 means that the range of about .01 to 12 about .3 cannot be critical? 13 A My understanding of the legal term of the 14 criticality is that -- that is my understanding, 15 yes. But, once again, I'm not a lawyer. 16 Q Are you aware that different patents are 17 allowed to have different claim scopes? 18 MR. PHILBIN: Objection, calls for legal 19 opinion. 20 A I mean, different patents by definition 21 have to have different claim scopes because if 22 they would be the exact same claim scope, the
46 1 claimed Y/Z range is critical, correct? 2 A Yes. 3 Q How does that contradict the claim that a 4 range of .01 to .3 is critical? 5 A So first off, it's -- in the patent 6 themselves they're using the "about" language, 7 which permits plus and minus 10. 8 And then secondly, you know, the other 9 patent, the '910 patent, you know, has a different 10 range. And the '910 patent has the exact same 11 specification as the '131 patent. So I don't -- 12 it's a contradiction to say that specific range in 13 the '131 patent is critical when the same 14 specification was used for the '910 patent and the 15 '910 patent has a different set of values. 16 Q Do you believe that patent owners are not 17 allowed to claim narrower claims than their 18 demonstrated range of criticality? 19 MR. PHILBIN: Objection, scope, asks for a 20 legal opinion. 21 A Yeah, I don't -- in terms of that -- I 22 don't understand your question. And I think the	48 1 patent wouldn't be issued because it would be 2 prior art, the first one. 3 BY MR. COX: 4 Q So do you believe that if one patent 5 claims a narrower claim scope, that means the 6 broader claim scope cannot be critical? 7 MR. PHILBIN: Same objection. 8 A Once again, I don't -- I don't -- the 9 legal aspect of what you're saying, I don't think 10 I can answer the question. 11 BY MR. COX: 12 Q With respect to Sunose, your supplemental 13 declaration adds a new theory that Sunose's 14 compaction densities can be calculated from its 15 manufacturing technique, correct? 16 A That's -- yes, that is stated. 17 Q And that theory is not in your original 18 declaration, correct? 19 A That theory is not in the original 20 declaration. That was a response to some of the 21 comments that were made by Dr. Wheeler. 22 Q And your theory is that compaction density

49 1 can be calculated as mass divided by volume using 2 Sunose's known coat weight electrode area and the 3 distance between rollers in the fixed rollers, 4 correct? 5 A That's my understanding of how -- yes, 6 that's my understanding of how this is done in 7 this industry and how it's described in Sunose. 8 Q Have you ever pushed Play-Doh through a 9 roller, Dr. Lucht? 10 A Have I ever pushed Play-Doh through a 11 roller? I don't know. I may have when I was a 12 child. I don't know. 13 Q My question is, does the Play-Doh's 14 density compress or does it lengthen and stretch 15 the Play-Doh that you push through the roller? 16 MR. PHILBIN: Objection, scope, relevance. 17 A Once again, I haven't done that experiment 18 recently, so I don't know. I mean, I had a 19 calendaring machine in my lab and we do calendar 20 electrodes. And so you roll it -- you coat the -- 21 you coat the coating and you roll it through and 22 it compresses it to -- you know, when you use it,	51 1 cathode materials, and then you push it through 2 the calendaring machine -- I mean, everything is 3 going to get pressed together, packed together, 4 but the surface area of the particles isn't going 5 to change unless you break the particles. 6 Q I'm sorry, I'm not referring to surface 7 area of the particles. I'm referring just to 8 the -- kind of the X/Y area, ignoring the Z up and 9 down, if that makes sense. 10 A So state that question again. 11 Q So looking down at this structure that 12 you're pushing through the calendaring machine, 13 just looking down from the top, there's going to 14 be an area in the X and Y direction, correct? 15 A Yes. 16 Q Okay. And my question to you is, is that 17 area always identically constant before and after 18 calendaring or is there any deformation of the 19 area? 20 A So I -- 21 MR. PHILBIN: Object to form. 22 A That's not an experiment that I've
50 1 especially commercially, it's -- you have a known 2 width and that's -- my understanding commercially, 3 that's how they do these things. 4 BY MR. COX: 5 Q Does the surface area always remain 6 constant before and after going through the 7 calendaring machine? 8 A The surface area -- 9 MR. PHILBIN: Objection, form. 10 A I don't understand your question. The 11 surface area of what? Sorry. 12 BY MR. COX: 13 Q Of all the layers -- if you're looking 14 from the top, right, imagine -- you're looking 15 from the top of the calendaring machine down, 16 there's going to be -- there's going to be a 17 surface area of the structure that you're pushing 18 through the calendaring machine, correct? 19 A So if you have a whole bunch of cathode 20 particles and then binder, that you have coat in a 21 slurry and then coat it, yeah, you've got a 22 mixture of the binder and the salt -- and the	52 1 specifically done. However, in general with -- 2 well, let me find Sunose again. Which -- where is 3 Sunose at? Is it in 1000? 4 BY MR. COX: 5 Q Yes. 6 A So yeah -- yeah, the width of the 7 electrode is 30 millimeters, which is 8 3 centimeters, they're saying. This is one 9 example. 10 So in that kind of a size, when you press 11 it down -- these are pretty thin layers. So, I 12 mean, there may be some -- some small expansion 13 for what you're talking about, but I think this 14 expansion in terms of the actual dimension is 15 going to be very small and basically not a 16 significant change. 17 Q Now, the higher the amount of coating 18 without varying the width of the roller could 19 result in greater deformation, correct? 20 A I'm not sure. 21 Q Sunose does not disclose the thickness of 22 the coatings after going through the roller,

53 1 correct? 2 A From my recollection in Sunose, they did 3 not go back and experimentally determine that, but 4 they used the value of how thick -- you know, when 5 it ran it through the calendaring machine. Which, 6 once again, in my understanding this is reasonably 7 standard in the industry. 8 Q Do you know if Sunose's coatings were 9 stretched as a result of going through the roller? 10 A I mean, once again, these -- these 11 coatings are longer than they are wide. And so I 12 think in terms of the length, the change would be 13 even smaller and less relevant than the change in 14 the width. 15 Q Does Sunose disclose the thickness of the 16 coatings after going through the roller? 17 A I think you just answered that -- asked me 18 that question and I think I answered that he 19 doesn't experimentally determine that, at least 20 not that I recall in the patent. Or did you ask 21 me a different question? 22 Q I believe it was slightly different.	55 1 active material through the fixed roll press gap, 2 correct? 3 A I believe that sounds correct, but if you 4 could direct me to where it says that in the 5 declaration. 6 Q I'm looking at paragraph 41 of your 7 declaration, 1044. 8 A Yes, that's what it says. 9 Q And so it's your opinion that a possible 10 explanation for the impossibly high compaction 11 density values is that in those embodiments Sunose 12 attempted to compact too much active material 13 through the mixed roll press gap? 14 A That's -- that is what I've stated, yes. 15 Q And are Sunose's compaction density values 16 for its embodiments measured or calculated? 17 A So as I've said prior to the break, 18 they -- they are measured values. There's nowhere 19 in Sunose that I can recall where they went and 20 measured the values after they did the coating -- 21 or did the calendaring. So they were determined 22 from the calendaring ratio as I described.
54 1 Does -- is it possible that Sunose's 2 coatings kind of elastically come back to a 3 greater total thickness than the thickness of the 4 roller after going through the roller? 5 A Once again, I'm not certain of that. That 6 certainly is not what you would expect, but I 7 don't know. 8 MR. PHILBIN: Brady, I just want to make 9 sure you saw. We've been going a little over an 10 hour and if we want to give Micheal a finger break 11 soon. 12 MR. COX: Sure. Yeah, sorry, I did not 13 see the break. Yes, we can take a break. 14 MR. PHILBIN: Okay. 15 (Recess taken from 11:16 a.m. to 16 11:31 a.m.) 17 BY MR. COX: 18 Q Dr. Lucht, with respect to Sunose, one 19 theory you offer in your supplemental declaration 20 is that one explanation for the impossibly high 21 density values in Sunose is that for some 22 embodiments Sunose attempted to compact too much	56 1 Q So, sorry, I just want to make sure I have 2 that right. 3 My understanding is that means that those 4 values were calculated using the amount of 5 material and the thickness, but there was -- 6 thickness of the gap, but there was not an actual 7 measurement of the density taken after the 8 rolling; is that fair? 9 MR. PHILBIN: Objection to form. 10 A I believe that is what is -- what is 11 stated in my declaration, yes, is that we -- that 12 Sunose did not measure the values after the 13 calendaring. And that what they used was the 14 volume based on the length and the thickness of 15 the coating and then how much was pressed to 16 the -- you know, to the thickness. Yeah, the 17 three values for volume, X times Y times Z. 18 BY MR. COX: 19 Q And that assumes the thickness of all of 20 the layers after calendaring is never greater than 21 the width of the gap, correct? 22 A State that again?

57 1 Q Your assumption regarding the calculations 2 assumes that the thickness of all of the layers 3 post-calendaring is never greater than the 4 thickness of the gap, correct? 5 A Well, my understanding of the way these 6 calendaring machines function is that when you put 7 these coatings through the calendaring machine, 8 the calendaring machine presses them. And in 9 order to go through the calendaring machine, they 10 can't be any larger than what the gap is, which is 11 why in the one case the electrode broke, as was 12 stated in my declaration, because there was too -- 13 if there's -- that's what's being pressed down 14 into. 15 Q And the total thickness of all the layers 16 as they go through the calendaring machine are 17 under some amount of pressure that is greater than 18 atmospheric pressure. Fair to say? 19 A Yes. My understanding is that the 20 calendaring machine is putting a significant 21 amount of pressure on the electrode tape. 22 Q And after exiting the calendaring machine,	59 1 there would be no compacted active material layer 2 from which Sunose could measure or calculate a 3 compaction density, right? 4 A Well, the -- I would say they couldn't 5 measure it. They could theoretically calculate 6 it. But if it broke, it would -- you would not be 7 able to then measure it afterwards. 8 Q Comparative example 3 of Sunose reports a 9 density of 8 grams per cubic centimeter, right? 10 A Hold on. Let me get back to Sunose. What 11 exhibit is that? 12 Q 1010. 13 A 1010. And this is in a table, right? 14 Okay. We're at the table. 15 Comparative example 3 has an active 16 material density M single-side coating portion 17 of 8. 18 Q And you agree that that density value M is 19 greater than any theoretically possible compaction 20 density value using Sunose's materials even 21 assuming a porosity of 0 percent, correct? 22 MR. PHILBIN: Objection to form.
58 1 they're no longer under that same amount of 2 pressure or compression, correct? 3 A After they're outside of the calendaring 4 machine, they're not under that same amount of 5 pressure, correct. But they had to go through the 6 gap. 7 Q And after they are no longer under the 8 same amount of pressure, the total thickness of 9 all of the layers could be greater at atmospheric 10 pressure than it was when going through the gap, 11 correct? 12 A That I -- I mean, in order to go through 13 the gap, it has to be compressed down to fit 14 through the gap. 15 Q If the coating broke during rolling, there 16 would be no compacted active material layer from 17 which Sunose could measure or calculate a 18 compaction density, right? 19 A Could you please restate that question 20 just -- it was a little confusing to me. 21 Q Sorry. 22 If the coating broke during rolling, then	60 1 A Once again, that was a long question. Can 2 you maybe break it in half or something or just 3 clarify better? 4 BY MR. COX: 5 Q Comparative example 3 reports active 6 material density M of single-side coated portion 7 grams per cubic centimeter of 8 grams per cubic 8 centimeter, correct? 9 A Yes, that is correct. 10 Q And that is materially greater than 11 4.5 grams per cubic centimeter, correct? 12 A So as I said in our -- the previous 13 deposition when you asked me a very similar 14 question, yes, that is higher than the calculated 15 theoretical value that Dr. Wheeler calculated. 16 Q And that's even assuming zero porosity, 17 correct? 18 A Dr. -- as I recall, Dr. Wheeler's 19 calculation was zero porosity. 20 Q Do you agree or disagree that this value 21 of 8 grams per cubic centimeter is physically 22 impossible to be the compaction density value for

61 1 Sunose's materials? 2 MR. PHILBIN: Objection to form. 3 A I think in terms of the calculation, you 4 could put too much material that would not go 5 through the rolling device and so then it would 6 break, which is what happened in that. 7 BY MR. COX: 8 Q For comparative example 2 in embodiment 1 9 and embodiment 2, all of those reported active 10 material density M are greater than the maximum 11 theoretical compaction density of Sunose's 12 materials, assuming zero porosity, correct? 13 A Yes. As I've stated several times when 14 you've asked several times, yes, those values are 15 above 4.5. 16 Q Do you believe that those values were 17 calculated incorrectly? 18 A That -- once again, I don't know. Once 19 again, they calculated and reported those values. 20 The values that I'm utilizing are the values from 21 embodiment 3 and embodiment 4, which are 22 reasonable values. In terms of did they calculate	63 1 porosity that would represent, correct? 2 A No, I have not done that calculation. 3 Q Do you know if that level of porosity 4 would be feasible to use with any other 5 electrolyte that you propose combining Sunose 6 with? 7 A Okay. Once again, that -- you kind of 8 threw that added part at the end there. Could you 9 ask that again? 10 Q Do you know if the level of porosity that 11 would correspond to a compaction density of 4.4 12 would work with any of the electrolyte solutions 13 that you proposed to combine with Sunose? 14 A So in terms of how well it would work, 15 once again, I'm not -- I'm not sure. The 16 compaction density of 4.4 is, as you said, 17 relatively going to have relatively low porosity. 18 Which I'll point out that the maximum density that 19 is utilized in the '131 patent is up to 4.3, which 20 is just slightly lower than 4.4. And certainly 21 that's what ATL claimed, making electrodes up to 22 4.3 is an important -- is an important aspect of
62 1 those things -- what did you say again? 2 Q Do you mean which embodiments? 3 A No. The question you said, how you stated 4 the question. I just want you to restate the 5 question so I can -- 6 Q My question is, are those reported active 7 material densities M in grams per cubic centimeter 8 for embodiment 1, embodiment 2 and comparative 9 example 2 all greater than the maximum theoretical 10 compaction density of Sunose's materials assuming 11 zero porosity? 12 A Once again, according to the calculated 13 value by Dr. Wheeler, which was 4.5, all of those 14 values are above 4.5, yes. 15 Q You say that the value of 4.4 is 16 reasonable? 17 A You certainly could have that utilizing 18 the value -- utilizing the calculation from 19 Dr. Wheeler, 4.4 is less than 5. I mean, it's 20 conceivable that you could get an electrode with 21 that density. 22 Q You've not calculated what level of	64 1 the patent. So 4.4 is slightly higher than that, 2 but ATL, yeah, utilizes 4.3. 3 Q You appreciate that different active 4 materials can have different densities? 5 A Yes. Different active materials could 6 have different densities. 7 Q And it's not your position that the 8 '131 patent only uses the same active materials 9 that Sunose uses, correct? 10 A I'm sorry, could you restate the question? 11 Q It's not your position that the '131 12 patent only uses the same active materials that 13 Sunose uses, correct? 14 A I would have to look back to be able to 15 answer that question. I think the '131 patent 16 only uses lithium cobalt oxide, but I'd have to 17 look to confirm that. 18 Anode, cathode. Yeah, the '131 patent 19 describes the use of lithium cobalt oxide. I 20 think that's the same active material that is 21 utilized by Sunose. Let me see. 22 Yeah, lithium cobalt oxide. So they're

65 1 both -- so it appears they're both utilizing the 2 same active material. 3 Is that what your question was? 4 Q The same ratios with everything else in 5 the layer? 6 A So I'm not sure in terms of how much 7 binder and conductive carbon they're utilizing, 8 but, you know, they're both utilizing lithium 9 cobalt oxide. They could vary the amount of 10 binder. I mean, that's something that's typically 11 done. 12 Q Is it your opinion that the authors of 13 Sunose correctly calculated the active material 14 density M for embodiments 3, 4 and comparative 15 example 1, but incorrectly calculated that density 16 for embodiments 1, 2 and comparative examples 2 17 and 3? 18 A So, once again, could you restate that? 19 That was a fairly long and confusing question. 20 Q Is it your opinion that the authors of 21 Sunose incorrectly calculated the active material 22 density M for embodiments 1 and 2 and comparative	67 1 this active material density M was calculated for 2 embodiments 3 and 4 compared to how any other 3 embodiment was calculated? 4 A There's no -- I mean, from -- from the 5 Sunose document, I don't -- I don't see any 6 differences, no. 7 Q Sunose's working examples refer only to 8 cathodes, correct? 9 A I mean, that's what -- you know, once 10 again, my understanding is this is directed to 11 lithium cobalt oxide cathodes. I would have to 12 look back through it again just to confirm that 13 there's no anode examples, but that's -- I think 14 the primary objective was cathodes. 15 Q Can you identify any example in Sunose 16 where Sunose's N/M ratio is applied to an anode? 17 A So in paragraph 21 it states: In the 18 present invention, in a battery configured by a 19 positive electrode plate and a negative electrode 20 plate being wound in a spiral through a separator. 21 So they mentioned both plates there. 22 And then it says down below: A current
66 1 examples 2 and 3? 2 A So, once again, I don't know how -- 3 what -- I'm not -- I'm not certain if they 4 calculated those things incorrectly or not. I 5 mean, they -- as much as I stated, too, with the 6 sample with comparative example 3, there could 7 have been too much material on the surface to go 8 through the -- through the calendaring machine. I 9 don't know. 10 All I can say is that the -- the 11 embodiments that I utilized are embodiments 3 and 12 embodiments 4 and those values are viable values. 13 As I've said previously, the values for the ones 14 you're talking about, embodiment 1, 2, comparative 15 examples 2 and 3, are high. They're above the 4.5 16 value. And I don't -- you know, I'm not certain, 17 you know, why -- where those values -- where they 18 came up with those values, but that's where they 19 came -- it's possible they put that much material 20 on the coating sheet and there was too much 21 material. 22 Q Are you aware of any differences in how	68 1 collector as M and the packing density of the 2 active material layer on which the coating has 3 been applied and dried on another electrode plate 4 on the inner circumference as N, the packing 5 density M and the packing density N. 6 And so in this paragraph, it appears that 7 they're describing either electrolyte with this N 8 to M ratio of .7 to 1. 9 Q Where specifically are you reading? Are 10 you looking at claim 2? 11 A I'm reading paragraph -- I'm in 12 paragraph 21 of the Sunose patent on page 4. And 13 it says, the first line says: In the present 14 invention, in a battery configured by a positive 15 electrode plate and a negative electrode plate 16 being wound through a spiral through a separate -- 17 is the first sentence. 18 And then later on it says: The packing 19 density of the active material layer on which 20 coating has been applied and dried on the opposite 21 through a current collector as M and the packing 22 density of the active material on which the

69 1 coating has been applied or dried to another 2 electrode plate on the inner circumference N, and 3 the packing density M -- M and N is made between 4 zero and 1 -- 0.7 and 1. 5 Q Is there any embodiment described where an 6 anode has such a ratio N over M? 7 A I don't believe that any of the 8 embodiments are anodes. 9 Q Cathode and anode active materials have 10 different densities and different mechanical 11 properties and different responses to compaction, 12 correct? 13 MR. PHILBIN: Objection to form. 14 BY MR. COX: 15 Q I'll ask it three different ways. 16 A That's like three different questions. 17 Q Yeah, I'll ask three different questions. 18 That's fine. 19 Cathode and anode active materials have 20 different densities, right? 21 A Yes. 22 Q And cathode and anode active materials	71 1 Give me one sec to pull it. 2 MR. PHILBIN: Paragraph 45. 3 MR. COX: Thank you. 4 BY MR. COX: 5 Q You say that counsel has informed you that 6 Sunose need not be enabled for purposes of 7 obviousness. 8 A Yes. 9 Q Does the portion of Sunose that you're 10 relying on in the combination need to be enabled? 11 MR. PHILBIN: Objection, asks for a legal 12 opinion. 13 A Once again, I'm not a lawyer. I would 14 have to -- I would have to go to counsel. 15 BY MR. COX: 16 Q Do you know if Zeng's electrolyte solution 17 would work or would work well with an active 18 material that has 2 percent porosity? 19 MR. PHILBIN: Object to form. 20 A So as I said in terms of the porosity, it 21 might depend upon the application. I mean, that's 22 a relatively, you know, low porosity. But the
70 1 have different mechanical properties, correct? 2 A I don't know. 3 Q Cathode and anode active materials have 4 different responses to compaction, right? 5 A Once again, I don't know. I'm not sure if 6 they would have different responses to the 7 compaction. 8 Q Have you done any analysis or experiments 9 to confirm that Sunose's N/M ratio would work for 10 anode active materials? 11 A Well, so once again, going back to 12 paragraph 21, it indicates either anode or cathode 13 related to those compaction densities. But have I 14 done any experiments? No, I have not. 15 Q It's your understanding that Sunose does 16 not need to be enabled in an obviousness 17 combination, correct? 18 A So, once again, I'm not a lawyer. But 19 could you kind of rephrase -- where -- is this 20 something you're referencing to from my 21 declaration? 22 Q Yes, it is. It is in your declaration.	72 1 porosity's not going to be that much different 2 than the 4.3 value that's stated in the -- in the 3 '131 patent. So it's going to be slightly lower 4 porosity in that case than in the -- than what's 5 described in the '131 patent. And they presumably 6 claimed up to 4.3 assuming that that would work 7 well. So if ATL thinks that 4.3 works well, then 8 4.4 might work fine. 9 BY MR. COX: 10 Q And are you saying a POSITA would rely on 11 ATL's disclosure of what values would work or are 12 you relying on Sunose and Zeng alone? 13 MR. PHILBIN: Object to form. 14 A I'm relying on Sunose and Zeng alone. I 15 mean, that's the combination that I'm putting 16 together. But you asked me the question is with 17 that porosity do I think it would work and I tried 18 to answer it the best I could. 19 BY MR. COX: 20 Q The '131 patent tested two data points 21 that are outside of the claimed D1/D2 ratio range, 22 correct?

73 1 A That's my recollection, yes. 2 Q And that's at .7 and 1.3? 3 A Hold on. Let me go back to the patent 4 just so I can see. I don't like to discuss things 5 and ask -- answer questions without seeing it. 6 Q And we can go to page -- paragraph 53 of 7 your supplemental declaration if that helps orient 8 you. 9 A Okay. I'm there. 10 Q .7 and 1.3 are both actually outside of 11 the claimed D1/D2 range, correct? 12 A Yes. 13 Q You say that this measurement is 14 statistically insignificant, correct? 15 A I would say that the difference between 16 0.7 and 0.72, which the about -- value from about 17 the .8 is -- that's a very small difference, yes. 18 Q Did you perform any statistical tests? 19 A No, I did not. 20 Q So how did you conclude whether the 21 differences between performance inside and outside 22 the claimed D1/D2 range was statistically	75 1 range -- once again, let me see -- this is in 2 claim 1, correct? Is .8 -- about 0.8 to about 3 1.2. And as I said, the about, which is defined 4 in the '131 patent, is plus or minus 10 percent. 5 So if you add the about to the 8 -- to the 6 .8 -- or subtract it from the .8, you get to 0.72, 7 which utilizing the significant figures of the 8 patent, which is only one significant figure below 9 the decimal point, 0.72 is 0.7. And so therefore 10 that -- it's -- that data point within the -- to 11 me is within the range. Because 0.72 is 0.7 12 rounding. 13 Q You don't dispute that these two data 14 points have worse performance than the embodiments 15 in the patent that are shown to be within the 16 claimed D1/D2 range, correct? 17 A Can you state that again? 18 Q You don't dispute that these two data 19 points' embodiments have worse performance than 20 the D1/D2 values that are in the claimed range, 21 correct? 22 MR. PHILBIN: Objection.
74 1 significant or not? 2 A I just offered this as my opinion. The 3 difference between 0.72 and 0.7 is very small. In 4 fact, 0.72 rounds to .7. And the values that were 5 in the patent only have the one significant figure 6 below the decimal. And so therefore that would be 7 my opinion, that they're statistically 8 insignificant because it rounds to that value with 9 what -- utilizing the significant figures that are 10 available in the '131 patent. 11 Q So your claim about statistical 12 significance is about the difference between these 13 endpoints and what values are within the D1/D2 14 range? 15 MR. PHILBIN: Object to form. 16 A Can you say that again? 17 BY MR. COX: 18 Q Your claim as to statistical significance 19 is about the difference -- or the distance between 20 these measured values and that would be inside of 21 the claimed D1/D2 range? 22 A So my understanding of the claimed	76 1 A Which table? This is 10 through 24? 2 BY MR. COX: 3 Q Table 7. 4 A Table 7. 5 Q Is what you cite. 6 A So, I mean, looking at those values, so 7 there's the one that's at 1.3 and the one that's 8 in 0.7, which are 83.6 and 82.7 respectfully -- 9 respectively, those values are -- have lower 10 capacity retentions than the other ones do. And 11 so those do have, you know, somewhat worse 12 performance. 13 But, once again, I mean, the performance 14 difference is, you know, relatively moderate. 15 And, once again, in my opinion, the value of 0.7 16 is included in the about 0.8. 17 Q Zeng says nothing about electrode 18 compaction densities, correct? 19 A I would have to look back at it again, but 20 I don't recall it doing that, which is not unusual 21 for, you know, a lot of electrolyte patents or a 22 lot of electrolyte research papers. They -- you

77 1 know, that's not something that they're focussed 2 on with the research. But usually you're going to 3 have to put it into some kind of cell system, some 4 type of a battery. And so therefore those are 5 going to have to have compaction densities. 6 Q And Zhou similarly says nothing about 7 electrolyte compaction densities, correct? 8 A I mean, once again, like Zeng, Zhou is a 9 patent that's directed predominantly towards 10 electrolyte development. And as with many of my 11 research articles, a lot of times, you know, you 12 don't mention the compaction densities. 13 Q And Sunose says nothing about electrolyte 14 compositions for its batteries, correct? 15 A I mean, I think Sunose does use an 16 electrolyte and I think it states what it is. I 17 would have to go back and look at Sunose again. 18 Let's go back to -- they do not, from what I'm 19 seeing. It does not appear they mention -- once 20 again, if you're making electrodes for a 21 lithium-ion battery, you're going to have to use 22 it with electrolyte or else you're not going to	79 1 rate performance can change. 2 Q And did you do any analysis to determine 3 how Zeng or Zhou's electrolyte solutions would 4 perform in a battery with porosity of 2 percent or 5 11 percent? 6 MR. PHILBIN: Object to form. 7 A So I did not do any measurement with that. 8 But, I mean, I would also just point out that 9 Sunose utilizes electrode densities of 4.0 also, 10 which is one of the values that we use that I 11 utilize. In that case, the porosity would be 12 significantly higher. 13 BY MR. COX: 14 Q It would be 11 percent, right? 15 A You stated that number earlier. And 16 certainly, you know, that -- in terms of that 17 being the case, I -- I'm not going to dispute 18 that, but I don't know that for certain. But, 19 once again, the 4.0 is pretty much right in the 20 center of what's claimed by the '131 patent since 21 it's 3.5 to 4.3. 22 So I would say, looking at that, certainly
78 1 make a battery out of it. 2 Q You say that electrolyte performance 3 generally does not depend on form factor, correct? 4 A I think I may have stated -- made that 5 statement somewhere. But I'm -- once again, I 6 would want to confirm by looking at it. 7 Q Do you agree that electrolyte performance 8 generally does not depend on form factor? 9 A I mean, I think -- once again, I think 10 that's something that I've stated. And usually, 11 you know, the electrolyte -- it's going to -- you 12 know, the form factor of the battery is usually 13 not going to have a large impact. If an 14 electrolyte works well on a coin cell, it's 15 probably going to work well on a pouch cell and 16 it's probably going to work well in a cylindrical 17 cell or a prismatic cell. 18 Q Does electrolyte performance depend on 19 porosity of the active layer? 20 A I mean, the electrolyte performance 21 itself, I mean, that's probably not going to 22 change. The battery performance in terms of your	80 1 an electrolyte formulation, according to the 2 '131 patent, would function at that density. And 3 so I -- I'm not relying upon that, of course. I'm 4 relying upon Sunose and relying upon Zeng. Are we 5 talking about Zeng or Zhou at this point? 6 Q I was asking about both actually. 7 A Okay. For either one. For either one. 8 Certainly I think you would have a reliable 9 battery system with an electrode packing density 10 of 4. 11 Q Do you know what porosity levels for an 12 active layer a POSITA, at the time of the 13 invention of the '131 patent, would have believed 14 would have been typical or acceptable? 15 A I don't know. 16 Q Do you agree that Sunose's electrodes 17 could deteriorate the performance in Zeng? 18 A I don't -- I don't agree with that. I 19 mean, once again, they're electrodes. The 20 electrode performance versus Zeng, I don't know in 21 that. I think there was certainly no reason to 22 say that it's going to be worse.

81 1 Q Your supplemental declaration describes 2 the Matsuoka as minimally intrusive to Zeng's 3 electrolytes, correct? 4 A Well, I would have to look and see that I 5 use that term "minimally" -- what term did you 6 say? 7 Q That's at paragraph 64. 8 A Yes. 9 Q And you say you've proposed a combination 10 that is minimally-intrusive to Zeng's 11 electrolytes, correct? 12 A Yes. 13 Q Why would a POSITA looking at Matsuoka and 14 combining it with Zeng only change the propyl 15 propionate percentage and not change any of the 16 other weight percentages? 17 A Well, first off, they're not necessarily 18 changing the weight percentage from Zeng anyways, 19 because the Zeng weight percentage, which you can 20 calculate as I did, overlaps with the weight 21 percentage in Matsuoka. The only reason I'm 22 relying upon Matsuoka is it specifically refers to	83 1 A Yes, that's what's stated there. 2 Q In your initial declaration, you 3 overstated example 8's performance relative to 4 examples 1 and 2, right? 5 A Yes. And, once again, yeah, I 6 misinterpreted the AC impedance results. And I 7 would have to look back again, but I believe, yes, 8 1 and 2 outperform 8. 9 Q And they outperform 8 considerably, 10 correct? 11 A Let me look. This is Zhou we're talking 12 about, correct? 13 Q Zhou, Figure 4. 14 A Example 8 versus example 1 and 2? 15 Q Right. 16 A It's -- example 2 is slightly better than 17 8. Example 1 is I would say more significantly 18 better. I mean, looking at the impedance result, 19 example 2's probably at about 42, 43. And 20 example 8 is at 50ish, while example 1's lower 21 down at 35. Maybe 30. 22 So, yeah. I mean, sample 2 and 8 are
82 1 propyl propionate as a total weight percentage 2 versus the total electrolyte, which Zeng did not. 3 But in Zeng you can calculate what that value 4 would be or you could prepare the electrolyte as I 5 did previously. 6 Q And you can calculate that if you agree 7 with your assumption that solid lithium 8 hexafluorophosphate is added to Zeng, correct? 9 A Well, yes. Agreeing with the fact that 10 that's the only obvious thing that would be 11 happening in Zeng, a POSITA would know that's 12 really the only option. 13 Q You acknowledge that you initially 14 misinterpreted the AC impedance results shown in 15 Zhou, the Nyquist plot? 16 A Yes. 17 Q Okay. And in paragraph 77 of your 18 supplemental declaration you say that: Example 8 19 outperformed at least the comparative examples and 20 examples 4 and 6, correct? 21 A Paragraph 77? 22 Q Yes.	84 1 reasonably similar. Sample 2 being a little 2 better. Example 1's the best. 3 Q You would agree that a POSITA looking at 4 Figure 4 would see that examples 1 and 2 are 5 superior to example 8, correct? 6 A For that experiment. However, I think I 7 also state that it's, you know, the discharge 8 capacity test, example 8 outperforms at least the 9 comparative examples 3 and 6 in Zhou's Figure 1 10 discharge capacity test. 11 Q Zhou lists eight optional esters that can 12 be used, correct? 13 A Zhou lists I think it was eight or maybe 14 nine. Having just gone over this the other day, I 15 thought it was nine, but it might be eight. 16 Which paragraph is that in? 17 Q I was looking at paragraph 11. Maybe I 18 need to count too. 19 A Paragraph 11. Propyl propionate, ethyl 20 propionate, propyl acetate, butyl propionate, 21 ethyl acetate, isopropyl propionate, ethyl 22 butyrate --

85 1 THE REPORTER: Can you slow that down, 2 please. 3 THE WITNESS: Oh, sorry. 4 A Eight. I can read them again. 5 Propyl propionate, ethyl propionate, 6 propyl acetate, butyl propionate, ethyl acetate, 7 isopropyl propionate, ethyl butyrate and methyl 8 acetate. And counting that was eight. You were 9 right. 10 BY MR. COX: 11 Q All of Zhou's working examples use propyl 12 propionate, correct? 13 A Yes, that is correct. 14 Q Example 8 uses ethyl acetate, correct? 15 A I believe that's correct. 16 Q And in paragraph 4 Zhou explains that it's 17 selecting low boiling point organic solvents to 18 improve the kinetic properties of the electrolyte, 19 right? 20 A Where is this again? 21 Q Paragraph 4 of Zhou. 22 A Commonly used to improve kinetic	87 1 a higher melting point than ethyl acetate, which 2 would lead to improved safety providers, a lot of 3 times when they're dissolved as solvents, like 4 ethyl acetate can be problematic for certain 5 applications. 6 Q Does your original declaration say that 7 the reason for adding propyl propionate is safety? 8 A I don't recall if that was in my original 9 declaration or not. 10 Q Is it in your supplemental declaration? 11 A I don't recall. I would have to look 12 through it. I mean, it's -- it's -- safety -- 13 safety's an important thing with a lot of 14 batteries. As I've said, it may have been in my 15 other declarations that I was deposed about two 16 weeks ago. 17 Q Substituting propyl propionate would 18 increase the melting point and the boiling point 19 of example 8's electrolyte, correct? 20 A Yes, it would somewhat increase it -- 21 Q And that -- 22 A -- would be causing a problem. I mean, it
86 1 properties of the electrolyte? 2 Q Right. 3 A Yes. 4 Q And it uses these low boiling point 5 organic solvents to provide a more suitable 6 channel for lithium-ion transmission, correct? 7 A That's what is stated there. 8 Q And that's because of the lower viscosity, 9 correct? 10 A Yes. The lower viscosity in part by the 11 esters in general, yes. 12 Q You agree that propyl propionate's 13 viscosity is more than 50 percent higher than the 14 viscosity of ethyl acetate? 15 A I would have to see that. I mean, I don't 16 have that data in front of me. I mean, if it's -- 17 it is likely higher, but also it's going to be a 18 lot lower than a lot of carbonate solvents, such 19 as ethylene carbonate. 20 Q It has a higher melting point and a higher 21 boiling point than ethyl acetate, correct? 22 A It's going have a higher boiling point and	88 1 would increase it. But, once again, Zhou -- in 2 Zhou's patents they suggest all of those esters as 3 viable alternatives and they're the ones that are 4 listed there. So I would look at that and view 5 that as these are viable esters that are going to 6 give the benefit that he's looking for, or she. 7 Q Zhou's stated objective is reducing 8 impedance and improving ion conductivity, not 9 improving high-temperature safety, correct? 10 A It doesn't say anything about 11 high-temperature safety, but, I mean, any POSITA's 12 going to be concerned about safety. 13 Q You agree that the substitution of propyl 14 propionate for ethyl acetate will change the 15 performance of the electrolyte solution in 16 example 8, right? 17 A It might change it somewhat. And in terms 18 of what the applications are, I mean, I don't -- 19 it might, it might not. It probably would change 20 it some. Certainly, like you say, it's going to 21 change the melting point and the freezing point of 22 the electrolyte in terms of the performance. You

89 1 know, it depends on what the performance criteria 2 you're looking for is. 3 Q I'm dropping an exhibit into the chat. 4 We'll call it Exhibit 1050. 5 (Deposition Exhibit 1050 marked for 6 identification.) 7 BY MR. COX: 8 Q Let me know when you have that. 9 A Hold on a second. Okay. 10 Q Did you ever attempt to translate the 11 paragraph in Zeng about its embodiment 1's 12 electrolyte preparation procedure using any 13 machine translation? 14 A Did I ever personally try and do that? 15 Q Uh-huh. 16 A No. 17 Q Do you see that this Copilot translation 18 states that lithium hexafluorophosphate with a 19 concentration of 1 mol/L was then slowly added to 20 the mixed solution? 21 MR. PHILBIN: I object to the foundation 22 of this exhibit.	91 1 A Yeah. 2 Q And so that 1.0 mol/L is in the original 3 Chinese version of Zeng, correct? 4 A The 1.0 mol/L is in the original Chinese 5 version. I would interpret that to be adding the 6 salt into that solvent blend to a 1.0 mol/L 7 solution. 8 Q Does a solid salt have a concentration 9 expressed in mol/L? 10 A Generally not. 11 Q Do you have any reason to dispute this 12 machine translation shown in Exhibit 1050 that 13 says lithium hexafluorophosphate with a 14 concentration of 1.0 mol/L was then slowly added 15 to the mixed solution? 16 MR. PHILBIN: Object to the foundation and 17 relevance. 18 A I have no reason to trust or distrust this 19 translation, which I don't know where the origin 20 is from. I would trust the certified translation 21 that was provided to me, which I have commented on 22 in multiple declarations and multiple depositions.
90 1 A I agree that that's what it says there. 2 Let me go back to the other Zhou. I've got too 3 many things open. 4 BY MR. COX: 5 Q This would be Exhibit 1006 in the English. 6 A Let me -- 1006? 7 Q That's right. And actually go ahead and 8 open 1005 for me as well. 9 A Hold on. 1006. Which paragraph are we 10 talking about here? 11 Q Paragraph 37. 12 A On this one it says: Then, lithium 13 hexafluorophosphate of a concentration of 14 1.0 mol/L is slowly added. 15 You want me to add the Chinese one? 16 Q Yeah, I do actually. 17 A Okay. That's fine. 18 Q I will only have you read the English in 19 it. 20 A Where do you want me to look in this? 21 Q So you see right dead center of 22 paragraph 37 it says 1.0 mol/L in English?	92 1 BY MR. COX: 2 Q Do you believe that the certified English 3 translation has a typographical error? 4 MR. PHILBIN: Objection, asked and 5 answered. 6 A I think I've already said that I think 7 that's a typographical error because it makes no 8 sense to do what they're describing. A POSITA 9 would never add an unknown quantity of a salt -- 10 of an electrolyte solution of an unknown solvent 11 to something else in a battery electrolyte. It's 12 not -- it's not something a POSITA would do. The 13 only thing that makes sense is adding the solid 14 lithium hexafluorophosphate, LiPF₆, to the 15 specific mixture of solvents. 16 BY MR. COX: 17 Q My question is do you believe -- I 18 understand that you believe there's a 19 typographical error. My question is do you 20 believe the typographical error existed in the 21 original Chinese Zeng exhibit or if that error was 22 introduced in translation into English?

93 1 MR. PHILBIN: Objection, form and 2 relevance. 3 A Being that I can't read Chinese, I don't 4 know. I mean, it's possible that it's a 5 typographical error. It's possible that it's a 6 translation error. All I can tell you is that 7 clearly from a POSITA's perspective, you can't do 8 specifically what's described. And so it's 9 obvious that you would be dissolving the lithium 10 hexafluorophosphate salt into the solid mixture 11 that's listed there. 12 BY MR. COX: 13 Q And you agree that the only thing the 14 board has to go on is the certified English 15 translation because I don't think we can assume 16 the board speaks Mandarin either, right? 17 MR. PHILBIN: Objection, form. 18 A I have no idea if anybody on the board 19 speaks Mandarin. There's a lot of Chinese 20 researchers that study batteries in the US. 21 MR. COX: Take a five-minute break. I 22 think we've been going another hour.	95 1 CERTIFICATE OF SHORTHAND REPORTER 2 3 I, Micheal A. Johnson, Registered 4 Diplomat Reporter and Notary Public within and 5 for the State of Texas, do hereby certify: 6 That BRETT LUCHT, Ph.D., with witness 7 whose deposition is hereinbefore set forth, was 8 duly sworn by me before the commencement of such 9 deposition and that such deposition was taken 10 before me and is a true record of the testimony 11 given by such witness. 12 I further certify that the adverse party, 13 Petitioner, was represented by counsel at the 14 deposition. 15 I further certify that the deposition of 16 BRETT LUCHT, Ph.D. occurred remotely at the 17 location of the witness on Thursday, 18 April 2, 2026, commencing at 10:11 a.m. to 19 1:10 p.m. 20 I further certify that I am not related to 21 any of the parties to this action by blood or 22 marriage, I am not employed by or an attorney to
94 1 THE WITNESS: That's fine by me. 2 (Recess taken from 12:28 p.m. to 1:10 p.m.) 3 MR. COX: Pass the witness. 4 MR. PHILBIN: We're done. I have nothing. 5 (Deposition concluded at 1:10 p.m.) 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	96 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 IN WITNESS WHEREOF, I have hereunto set my 5 hand this 2nd day of April, 2026. 6 7  8 9 MICHEAL A. JOHNSON, RDR, CRR 10 NOTARY PUBLIC IN AND FOR 11 THE STATE OF TEXAS 12 13 14 15 16 17 18 19 20 21 22

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