

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG DISPLAY CO., LTD.,
Petitioner,

v.

PICTIVA DISPLAYS INTERNATIONAL LTD.,
Patent Owner.

IPR2024-01094
Patent 8,558,223 B2

Before GRACE KARAFFA OBERMANN, GARTH D. BAER, and
MICHAEL G. MCMANUS, *Administrative Patent Judges*.

OBERMANN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314(a)

I. INTRODUCTION

Petitioner¹ filed a Petition to institute an *inter partes* review of claims 1–4, 6, and 8–14 of U.S. Patent 8,558,223 B2 (Ex. 1001, “the ’223 patent”). Paper 1 (“Pet.”). Patent Owner² filed a Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”).

With Board authorization, Petitioner filed a Reply (Paper 7), Patent Owner filed a Sur-reply (Paper 8), Petitioner filed a Notice and Stipulation (Paper 9; Ex. 1019), and Patent Owner filed a Preliminary Supplementation (Paper 10). *See* Exs. 3001, 3002 (emails, authorizing these additional submissions).

We have authority to institute an *inter partes* review where a petitioner shows a reasonable likelihood of prevailing with respect to at least one challenged claim. 35 U.S.C. § 314(a); 37 C.F.R. § 42.4(a). Applying that standard, for reasons set forth below, we institute an *inter partes* review.

II. BACKGROUND

A. *Related Proceedings*

The parties identify *Pictiva Displays Int’l Ltd. v. Samsung Electronics Co., Ltd.*, No. 2:23–cv–00495 (E.D. Tex.) (“the District Court action”) as a related proceeding. Pet. 2; Paper 3, 1. In addition, in the Reply, Petitioner identifies *Pictiva Displays Int’l Ltd. v Samsung Elecs. Co., Ltd.*, No. 2:24–

¹ Petitioner identifies Samsung Display Co., Ltd., Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. as real parties-in-interest. Pet. 2.

² Patent Owner identifies Pictiva Displays International Limited, “a subsidiary of Key Patent Innovations Limited,” as “the owner” of the ’223 patent. Paper 3, 1. Patent Owner further states that Key Patent Innovations Limited “is a wholly-owned subsidiary of New PP Licensing, LLC.” *Id.*

cv–00532 (E.D. Tex.), filed by Patent Owner on July 12, 2024, as “a replacement lawsuit” for the District Court action. Reply 4–5.

B. The '223 Patent (Ex. 1001)

The '223 patent relates to an organic electronic component that includes a substrate, a first electrode, a second electrode, and an electron-conducting layer that is electrically conductively connected to at least one of the electrodes.” Ex. 1001, 1:16–19. The '223 patent explains that “the electron-conducting layer can be obtained by joint vaporization of a metal complex, which comprises a central metal atom, with an organic compound.” *Id.* at 1:20–22.

We reproduce below Figure 1 of the '223 patent.

FIG 1

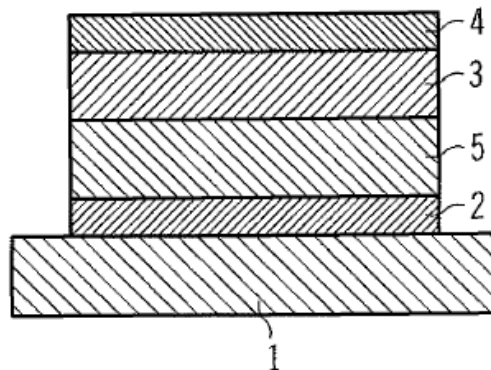


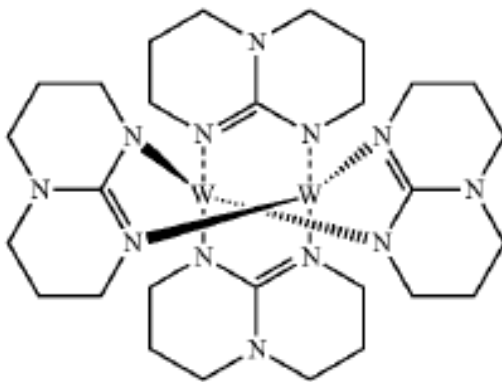
Figure 1 is a side view for an embodiment of an OLED. *Id.* at 14:56–58. The embodiment includes substrate 1, first electrode 2, second electrode 4, electron-conducting layer 3, and emitting layer 5. *Id.* at 15:14–17.

The '223 patent explains that, due to a voltage being applied to electrodes 2 and 4, “electrons are injected by one of the two electrodes, the cathode, into the layers 3 and 5 and holes are injected by the other electrode,” “[e]xcitons can be formed by the recombination of the electrons

and holes,” and “radiation is emitted from the emitting layer 5.” *Id.* at 15:17–21.

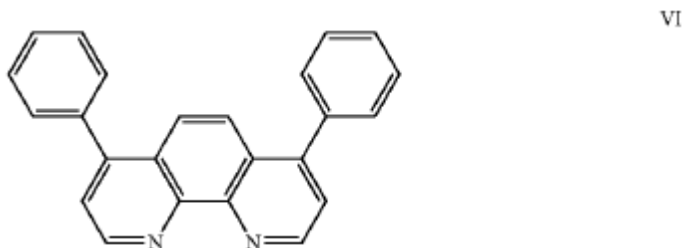
The '223 patent describes an electron-conducting layer being formed “by joint vaporization of a metal complex with an organic compound.” *Id.* at 1:57–59. According to the '223 patent, the metal complex and organic compound “interact with one another in the gas phase or when they meet one another on the substrate surface,” which “causes the compounds to be mutually coordinated.” *Id.* at 1:60–64. The '223 patent further indicates that this coordination, as well as associated overlap of orbitals, permits additional electrons to be available for transportation in the organic electronic component, which improves electron conductivity, efficiency, and the serviceable life of the component. *Id.* at 2:6–16.

The metal complex may include two central atoms, given that, according to the '233 patent, metal complexes with “two central atoms are particularly well suited for the formation of chains.” *Id.* at 2:44–45, 2:49–50. In one embodiment, the central atom or atoms may be selected from Cr, Mo, or W, with W being “a preferred central metal atom.” *Id.* at 3:1–4. The '223 patent describes the $W_2(TBDA)_4$ complex, which we reproduce below.



Id. at 3:25–38. The above illustration shows schematically the structure of the $W_2(TBDA)_4$ complex. *Id.* at 3:22–25.

The '223 patent further describes an organic compound that includes “a heteroaromatic compound which is conjugated with an aromatic compound via a C—C bond.” *Id.* at 4:1–4. The '223 patent describes several organic compounds and one of those, compound VI, we reproduce below.



Id. at 5:13–8:42. The above illustration shows the structure of compound VI, which, according to the '223 patent, is among a number of compounds that “are particularly well suited as an organic compound for the electron-conducting layer.” *Id.* at 7:42–45.

With regard to coordination, the '223 patent states:

By suitable selection of the metal complexes, for example binuclear metal complexes, and suitable selection of the organic compounds such as for example the compounds I to XXIII, the joint vaporization of the metal complex with the organic compound in the gas phase or on the deposited surface results in interactions, so that the compounds coordinate to each other. The coordination is also retained when forming the electron-conducting layer. This coordination can result in the formation of two-dimensional chains or three-dimensional networks. These chains or networks are deposited as such in the vaporization process and are also present as such in the electron-conducting layer in the organic electronic component. The formation of chain-like or network-like structures enables additional electrons to be able to be transferred from the metal complexes to the organic compounds, said electrons are then available for charge transport in the electron-conducting layer.

Id. at 11:17–33.

C. Challenged Claims

Claims 1–4, 6, and 8–14 of the '223 patent are at issue in this proceeding. Pet. 1. Claim 1, reproduced below, is illustrative of the claimed subject matter.

1. An organic electronic component, comprising:

a substrate,

a first electrode,

a second electrode,

an electron-conducting layer which is arranged in such a way that it is electrically conductively connected to at least one of the electrodes,

wherein the electron-conducting layer is obtained by joint vaporization of a metal complex, which comprises a central metal atom, with an organic compound, wherein the organic compound comprises a heteroaromatic compound which is conjugated with an aromatic compound via a C–C bond.

Ex. 1001, 19:10–23.

D. Asserted Challenges to Patentability

The Petition sets forth the following challenges to patentability.

Claim(s) Challenged	35 U.S.C. §³	Reference(s)/Basis
1–4, 6, 8–14	103(a)	Werner ⁴
1–2, 6, 8–14	103(a)	Ma ⁵

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103 effective March 16, 2013. Because the '223 patent's priority date is before the AIA's amendments to Section 103, this decision refers to the pre-AIA statutory provision. Neither party indicates the result would change under the AIA version.

⁴ WO 2005/086251 A2, published September 15, 2005 (Ex. 1006). We refer to the certified English translation of Werner (Ex. 1005).

⁵ Ma et al., *Organic light-emitting diodes based on new n-doped electron transport layer*, *Synthetic Metals* 158, 810–814 (2008) (Ex. 1007).

Pet. 3–4. Petitioner advances the Declaration of Barry P. Rand, Ph.D. (Ex. 1003). Patent Owner advances the Declaration of Kirk S. Schanze, Ph.D. (Ex. 2001).

III. DISCRETIONARY DENIAL

A. *Discretionary Denial under 35 U.S.C. § 325(d)*

The Board may institute an *inter partes* review where the information presented “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least [one] of the claims challenged in the petition.” 35 U.S.C. § 314(a). Even where a petitioner meets that threshold showing, however, the Board has discretion to deny the request for review where the petitioner advances “the same or substantially the same prior art or arguments previously” presented to the Office. 35 U.S.C. § 325(d).

We apply a two-part framework when assessing whether to exercise our discretion to deny a petition under Section 325(d). First, we consider whether the same or substantially the same prior art or arguments previously were presented to the Office. Second, if either condition is satisfied, we assess whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (setting forth two-part framework that guides the Board’s decision whether to exercise its discretion to deny review under Section 325(d)).

1. *Substantially the Same Prior Art*

Petitioner asserts that “none of the prior art references asserted in this Petition were substantively considered by the Examiner during prosecution” because “Werner and Ma were not of record during prosecution.” Pet. 76.

However, Petitioner acknowledges that, during prosecution, the Examiner allowed the patent claims over another reference, Ikeda (Ex. 1010). *Id.*

In Petitioner's view, Ikeda teaches layer 106, which may include "an electron-conducting layer that is comprised of various metal complexes (such as Alq₃ or Zn(BOX)₂) and may also contain certain organic compounds as discussed in the '223 patent. *Id.* (citing Ex. 1010 ¶¶ 71–73). Petitioner acknowledges that Ikeda's layer 106 differs from Werner and Ma, "which disclose layers comprising an organic compound (BPhen) in combination with W₂(hpp)₄ or Liq." *Id.*

Patent Owner emphasizes that Ikeda's paragraphs 71–73, discussed by Petitioner, "do not suggest that layer 106 includes a mixture of metal complexes and organic compounds" because paragraph 71 describes examples of "metal complex[es] having a quinoline skeleton or a benzoquinoline skeleton," paragraph 72 describes "another metal complex having an oxazole ligand or a [thiazole ligand," and paragraph 73 describes the use of certain organic compounds. Prelim. Resp. 70. Against that backdrop, Patent Owner argues that Ikeda's paragraph 73 does not modify paragraphs 71 and 72 by teaching organic compounds that may be used with the metal complexes of paragraphs 71 and 72. *Id.*

Based on the information presented, Petitioner does not show sufficiently that Ikeda is cumulative to Werner and Ma because Ikeda teaches the use of different metal catalysts. Specifically, Petitioner relies on Werner's disclosure of W₂(hpp)₄ as a metal catalyst and Ma's disclosure of Liq as a metal catalyst. Pet. 22–23, 58. W₂(hpp)₄ includes tungsten as the metal and Liq includes lithium as its metal. Ex. 1005, 60:20–21; Ex. 1007,

810. The cited portions of Ikeda do not teach the use of either of these metal catalysts, much less their use with an organic compound. Ex. 1010 ¶¶ 71–73.

2. Conclusion

For the above reasons, Werner and Ma are not cumulative to Ikeda, therefore, the first part of the analysis under *Advanced Bionics* is not satisfied. On this record, neither the prior art nor the arguments presented in the Petition are substantially the same as those previously presented to the Office. As a result, we do not exercise our discretion under Section 325(d) to deny institution of *inter partes* review.

B. Discretionary Denial under 35 U.S.C. § 314(a)

We have discretion to deny institution of an *inter partes* review under the provisions of 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular circumstances, but not requiring institution under any circumstances). *See Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 273 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (“[Section] 314(a) invests the Director with discretion on the question whetherto institute review” (emphasis omitted)); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

When determining whether to exercise discretion to deny institution in view of a parallel proceeding, we consider the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). “These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.*

In *Sotera Wireless, Inc. v. Massimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential), the Board declined to exercise its discretion to deny review under *Fintiv* where the patent owner stipulated “if IPR is instituted, they will not pursue in the District Court Litigation any ground raised or that could have been reasonably raised in an IPR.” *Sotera Wireless*, Paper 12 at 18.

Importantly, moreover, on June 21, 2022, the Director of the United States Patent and Trademark Office issued a Memorandum setting forth an “Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation” (“Guidance Memo”).⁶ The Guidance Memo states that “[c]onsistent with *Sotera Wireless, Inc.*, the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.” Guidance Memo 3 (footnote and emphasis omitted).

In the District Court action, Petitioner has stipulated as follows:

Defendants hereby stipule that, if the Patent Trial and Appeal Board institutes an inter partes review proceeding for U.S. Patent No. 8,558,223 on the grounds presented in the petition in IPR2014-01094, then Defendants will not pursue an invalidity defense in this case that the patent claims subject to the instituted IPR are invalid based on grounds that were raised or reasonably could have been raised in the IPR.

Ex. 1019.

We determine, and Patent Owner does not contest (Paper 10 at 2), that this stipulation is consistent in scope with the stipulation in *Sotera Wireless*

⁶ Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

cited approvingly in the Director's Guidance Memo. Patent Owner argues only, in that regard, that "the Board should consider Petitioner's apparent disregard of fair play when making its institution decision," given that Petitioner filed the stipulation only after Patent Owner "used its limited word allotment to address" the discretionary denial issues in its Preliminary Response. *Id.*

Patent Owner directs us to no authority that permits the Board to disregard the Guidance Memo under these circumstances. *Id.* Consistent with the Guidance Memo, therefore, we decline to exercise our discretion to deny institution under *Fintiv* in view of the District Court action.

IV. ANALYSIS OF THE CHALLENGES

A. Level of Ordinary Skill in the Art

The level of ordinary skill in the art at the time of the invention is a factual determination that provides a primary guarantee of objectivity in an obviousness analysis. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991)).

Petitioner contends:

A person of ordinary skill in the art ("POSA") at the time of the alleged invention of the '223 patent would have had a university degree in chemistry and additional expertise or a second university degree in the field of electrical engineering, particularly optoelectronics, or alternatively a university degree in electrical engineering and additional expertise or a second university degree in the field of chemistry. The person of ordinary skill in the art has spent several years studying the structure and function of organic optoelectronic components, in particular OLEDs, and has detailed knowledge of the chemical structure of light-emitting organic layers and the transport of

charge carriers to these layers. In this respect, the person of ordinary skill in the art works at the interface between electrical engineering/physics (charge carrier transport and light emission processes in optoelectronic components) and chemistry, in particular organic chemistry (materials and layer stack combinations suitable).

Pet. 14 (citing Ex. 1003 ¶¶ 46–47). Patent Owner does not dispute Petitioner’s argument. *See generally* Prelim. Resp.

Neither party indicates that the result on institution would change depending on the definition selected. Accordingly, for the sole purpose of deciding whether to institute review, we adopt Petitioner’s uncontested proposed definition, because, on this record, it is consistent with the disclosures of the asserted prior art. *See* Ex. 1005, (code 57); Ex. 1007, 810⁷ (abstracts of the references asserted in the patentability challenges).

B. Claim Construction

In an *inter partes* review, the Board construes the terms of a patent claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). Under that standard, claim terms generally are given their plain and ordinary meaning as would have been understood by the ordinarily skilled artisan at the time of the invention and within the context of the entire patent disclosure. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

We construe claim terms only as relevant to the parties’ contentions and only to the extent necessary to resolve the issues in dispute. *See Vivid*

⁷ Following the parties’ convention, when citing Exhibit 1007, we refer to original page numbers, not page numbers added by Petitioner.

Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Neither party indicates that an express construction for any claim term is necessary to our decision whether to institute review. Pet. 15; *see generally* Prelim. Resp. On this record, we determine that no claim term requires express construction for purposes of this Decision.

C. Assessment of the Patentability Challenges

We have authority to institute review where a petitioner shows sufficiently a reasonable likelihood of prevailing at trial with respect to at least one challenged patent claim. 35 U.S.C. § 314(a). For reasons that follow, we determine that Petitioner satisfies that threshold by showing sufficiently, for purposes of instituting a review, that the subject matter of claim 1 would have been obvious over Ma. *See* Pet. 4 (asserted grounds).

1. Whether Ma was Publicly Accessible

Under 35 U.S.C. § 311(b), a petitioner in an *inter partes* review may only challenge the claims of a patent based on “prior art consisting of patents or printed publications.” Petitioner has the initial burden of production to establish that there is prior art that renders the challenged claims unpatentable. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1379 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008)).

Whether Ma qualifies as a “printed publication” involves an inquiry into the facts and circumstances surrounding the reference’s disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). A reference is considered “publicly accessible” upon a satisfactory

showing that the document has been “disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence[] can locate it.”

Kyocera Wireless Corp. v. ITC, 545 F.3d 1340, 1350 (Fed. Cir. 2008) (citation and internal quotation marks omitted); *see Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29, 10–11 (PTAB Dec. 20, 2019) (precedential).

Petitioner contends that Ma “is an article published in Synthetic Metals and available online as of August 29, 2008.” Pet. 16. The ’223 patent, in turn, issued on October 15, 2013, claims priority to a PCT application having a Section 371 date of September 8, 2011, and claims priority to two German applications having an earliest filing date of September 26, 2008. Ex. 1001, codes (45), (86), (30). Therefore, on this record, if Ma was publicly accessible as of August 29, 2008, as Petitioner contends, then Ma is prior art to challenged claims.

Patent Owner counterargues that Petitioner has not sufficiently demonstrated that Ma was publicly accessible as of August 2008. Prelim. Resp. 36–42. Further, in Patent Owner’s view, the German priority applications support the challenged claims. *Id.* at 42–56. For purposes of this Decision, we focus on whether Petitioner shows sufficiently, for purposes of institution, that Ma was publicly accessible by August 29, 2008; that is, prior to September 25, 2009, the filing date of the Patent Cooperation Treaty (“PCT”) application from which the ’223 patent issued. *See* Ex. 1001, code (22). *See Samsung Display Co., LTD v. Pictiva Displays Int’l LTD*, IPR2024-00855, Paper 13 at 4–5 (PTAB Jan. 10, 2025) (Director, explaining that the critical date under these circumstances is the PCT filing date).

As Petitioner points out, Ma indicates an online publication date of August 29, 2008, on its face. Pet. 16; Reply 2. Patent Owner counters that this date indicates only “when ‘a version of the article was made available online in the journal.’” *Id.* at 37 (quoting Pet. 16 n.5) (emphasis omitted). According to Patent Owner, “[t]here is no evidence that the version allegedly made available online on August 29, 2008 was the same as the version submitted” in final form in December 2008, Petitioner relies on conclusory attorney argument that no revisions were made to Ma as between those two versions, and Petitioner fails to support its position that the online version, in fact, included the disclosures upon which Petitioner relies in the grounds. *Id.* at 37–39 (citing Pet. 16–17 n.5).

Patent Owner argues that these facts are materially different from those presented in *Hulu*, where a book that “bore a copyright date, a printing date, and an ISBN date” was shown to be publicly accessible. *Id.* at 39 (citing IPR2018-01039, Paper 29 at 19–20)). In Patent Owner’s view, the facts at hand here more closely align with those *In-Depth Geophysical, Inc. v ConocoPhillips Co.*, IPR2019-00849, Paper 17 (PTAB Mar 30, 2020), cited in *Hulu*. In *In-Depth Geophysical*, “a conference paper bearing a copyright date of 2012 and including a date of September 2012 on its cover, was insufficient to show that the paper had been disseminated prior to the conference (November 2012).” Prelim. Resp. 39–40. Against that backdrop, Patent Owner questions “when the Ma online version was first indexed” and “the search capability of *Synthetic Metals* website.” *Id.* at 41.

Based on the record presented, however, we determine that Petitioner adequately addresses Patent Owner’s arguments in the Reply, showing sufficiently, for purposes of trial institution, that the version of Ma that

Petitioner advances in support of the challenge “was available online on August 29, 2008.” Reply 2 (citing Ex. 1018 ¶¶ 8–11).

In particular, Petitioner directs us to the Declaration of Ms. Rachel Garland, which addresses directly Patent Owner’s concerns about whether the online version available on August 29, 2008, is the same version that Petitioner asserts in the challenge.

On that point, Ms. Garland identifies her position as “Senior Publisher, Materials, Science for Elsevier Limited,” the publisher of Ma. Ex. 1008 ¶ 1; Ex. 1018, 810. Ms. Garland testifies that she acts “as a custodian of certain records for Elsevier” and that she made her declaration “based on my personal knowledge and information contained in the business records of Elsevier.” Ex. 1018 ¶¶ 4–5. In other words, Ms. Garland demonstrates direct, personal knowledge about Elsevier and its practices in relation to Ma’s public accessibility. Ex. 1018, ¶¶ 1–12.

Conversely, Patent Owner’s witness, Dr. Schanze, testifies about his own recollections dating back more than a decade, regarding Elsevier’s promptness in indexing new online articles. Specifically, Dr. Schanze recalls that “new articles often could not be located unless one knew the author’s names or the title of the article,” Elsevier’s search tool “had limited keyword search capability” in the 2008–2009 timeframe, and indexing services “did not index online only articles, making them difficult or impossible to locate.” Ex. 2001 ¶ 116. Dr. Schanze does not address Ma specifically and does not cite corroborating evidence to support this testimony. As a result, at this juncture, we determine that Dr. Schanze’s testimony does not undercut the sufficiency of Petitioner’s evidence, including Ms. Garland’s testimony, to support institution of review.

Ms. Garland attaches a copy of Ma as Exhibit A to her testimony, stating that she “obtained a copy of Exhibit A through ScienceDirect, where it is maintained in the ordinary course of” the Ma publisher “Elsevier’s business” and “Exhibit A is a true and correct copy of the Exhibit, as it existed on or about November 8, 2024.” Ex. 1018 ¶¶ 8–9, 3–22. As noted above, Ms. Garland identifies Ma’s online availability as of August 29, 2008. *Id.* ¶ 11. Indeed, Ms. Garland testifies that:

The article and abstract from Science Direct shows the date of publication for the first online version. Science Direct populates this information using persistent publication metadata that is embedded in the articles metadata. *Once this publication metadata has been first calculated it is not changed.*

Id. ¶ 10 (emphasis added).

Based on Ms. Garland’s testimony, we are satisfied that Petitioner demonstrates sufficiently, for purposes of trial institution, that the version of Ma asserted in the grounds is the same as Exhibit A of the Garland Declaration. Exhibit A includes the teachings Petitioner cites to establish that Ma renders claim 1 unpatentable. Ex. 1017, 2–22; Pet. 55–60.

Ms. Garland’s testimony also addresses Patent Owner’s concerns about whether an interested party would have been able to find Ma by exercising reasonable diligence. “A reference is considered publicly accessible if ‘persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.’” *Samsung Electronics Co., Ltd.*, 929 F.3d at 1369 (quoting *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018)).

“In some cases, this inquiry is straightforward. But in other cases, public accessibility depends on a careful, case-by-case examination of how a particular reference was disseminated, to whom, for how long, and under

what circumstances.” *Id.* In that regard, the indexing of a website, “is not ‘a necessary condition for a reference to be publicly accessible’; it is but one among many factors that may bear on public accessibility” and “while often relevant to public accessibility, evidence of indexing is not an absolute prerequisite” to establish that an online reference was publicly accessible. *Voter Verified, Inc. v. Premier Election Solutions, Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012).

Ms. Garland testifies that, “[a]s part of its ordinary course of business, Elsevier, publishes and makes available technical articles” and “[t]hese publications are made available for public download through Elsevier’s digital library, ScienceDirect.” Ex. 1017 ¶ 6. According to Ms. Garland, “It is the regular practice of Elsevier to publish articles and other writings including article abstracts and make them available to the public through ScienceDirect.” *Id.* ¶ 7. Thus, even if we accept Patent Owner’s suggestion that Ma would have been behind a paywall and available only to subscribers, Ma’s abstract would have been available online, such as via an internet search engine, permitting an interested entity to find the abstract and then, if necessary, gain access to Ma’s full text. *See* Prelim. Resp. 40 (arguing that Petitioner presents no evidence that, at the relevant time, Ma would have been “accessible to anyone other than the journal’s subscribers”).

We find this situation differs from that presented in *Blue Calypso*, 815 F.3d at 1348 (report was made available on graduate student’s personal webpage) and in *Samsung Electronics Co., Ltd.*, 929 F.3d at 1366 (reference was uploaded to two websites that required at least four steps of navigation in order to access the reference). Prelim. Resp. 40 (Patent Owner’s reliance on those two cases); *see* Reply 2–3 (Petitioner’s counterarguments and

citations to relevant caselaw). Elsevier is an established publisher, as demonstrated by Dr. Schanze's testimony. Ex. 2001 ¶ 116. Furthermore, Ma itself indicates the website on which Ma abstract would have been available: "www.elsevier.com/locate/synmet." Ex. 1007, 810. Based on the evidence presented at this juncture, therefore, Petitioner shows sufficiently that an ordinarily skilled artisan would have been able to locate Ma by exercising reasonable diligence. Pet. 16–17; Reply 1–3.

Patent Owner suggests that the Garland Declaration is untimely because it was not filed with the Petition. Sur-reply 1. To the contrary, it is well-settled in our forum that a petitioner may present new evidence of public accessibility even after institution, including "in a reply to the patent owner response" in response to prior briefing. *Hulu, LLC*, IPR2018-01039, Paper 29 at 14. The Board authorized Petitioner to file the Garland Declaration because that evidence directly responds to Patent Owner's arguments in the Preliminary Response. Ex. 3002; Prelim. Resp. 36–42.

We acknowledge that the issue of public accessibility is highly fact-dependent and may be best suited for resolution on a full and robust trial record, including cross-examination of Ms. Garland and Professor Schanze. Nevertheless, at this juncture, for the above reasons, Petitioner supports sufficiently, for purposes of trial institution, that Ma qualifies as prior art.

2. Petitioner's Challenge over Ma

We next resolve whether Petitioner shows sufficiently that at least one challenged claim is unpatentable as obvious over Ma.

Petitioner argues that Ma relates to an organic light-emitting diode made by providing glass (a substrate) coated with indium tin oxide ("ITO") (an anode), a layer including BPhen and Liq, and a cathode. Pet. 55–57

(citing Ex. 1007, 810–811; Ex. 1003 ¶¶ 135–136). Petitioner explains how the layer including BPhen and Liq serves as an electron-conducting layer that would be “electrically conductively connected to at least one of the electrodes” due to its arrangement between the anode and cathode. *Id.* at 57–58 (citing Ex. 1007, 811; Ex. 1003 ¶¶ 136–137). Petitioner further explains how Liq has the structure of the metal complex required by claim 1, BPhen has the structure of the organic compound required by claim 1, and that Ma teaches joint vaporization of Liq and BPhen. *Id.* at 58–60 (citing Ex. 1007, 811; Ex. 1003 ¶¶ 139–142).

At this preliminary stage of the proceeding, Patent Owner does not dispute those facts; to the contrary, Patent Owner opposes this challenge based only on its view that Petitioner has not established that Ma was publicly accessible—a view that we reject for reasons provided above. Resp. 36–56; Reply 1. Although Patent Owner asserts that it “does dispute that Ma renders claims 1, 3, 4, 6, 9 and 10 obvious” (Sur-reply 1),⁸ Patent Owner advances no meaningful argument, at this juncture, regarding the merits of Petitioner’s challenge based on Ma, other than its arguments about Ma’s public accessibility. *See generally* Prelim. Resp., Sur-reply.

On this record, therefore, Petitioner demonstrates a reasonable likelihood of prevailing on claim 1 based on obviousness over Ma.

3. *Petitioner’s Challenge over Werner*

Having determined that Petitioner meets the threshold showing necessary to support institution of review based on the ground over Ma, we decline to address whether the ground over Werner also supports institution.

⁸ Petitioner’s ground over Ma challenges claims 1, 2, 6, and 8–14 and, therefore, does not include claims 3 and 4. Pet. 3–4.

See Pet. 3–4 (grounds chart); *see also SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018) (requiring the Board’s final written decision to address every claim the petitioner presents for review); Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019)⁹ (“The Board will not institute on fewer than all claims or all challenges in a petition.”); *see PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1359–60 (Fed. Cir. 2018) (interpreting the relevant statutory provisions, in light of *SAS*, to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

Under the particular and unique circumstances presented on this record, we determine that this challenge involves factual issues best-suited for resolution in the first instance on a full trial record, to the extent the issues are preserved by Patent Owner in a timely-filed response to the Petition, and as necessary to a final written decision. *See* Prelim. Resp. 6–36 (relying extensively on Dr. Schanze’s declaration testimony (Ex. 2001), as yet untested by cross-examination, to support a plethora of factual issues about the sufficiency of the challenge based on Werner).

IV. CONCLUSION

For the above reasons, on this preliminary record, we determine that Petitioner demonstrates a reasonable likelihood that the subject matter of at least one challenged claim is unpatentable. Accordingly, we institute an *inter partes* review of all challenged claims based on all grounds asserted in the Petition pursuant to 35 U.S.C. § 314(a). *See PGS*, 891 F.3d at 1359–60.

⁹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

V. NOTICES

The Board shall deem waived any issue not raised by Patent Owner in a timely response to the Petition, or as permitted in another manner during trial, even if raised in the Preliminary Response or discussed in this Decision. Both parties shall abide by our rule against incorporation by reference. *See* 37 C.F.R. § 42.6(a)(3).

Nothing in this Decision authorizes Petitioner, in a manner not otherwise permitted by the Board's rules, to supplement the information supporting any ground advanced in the Petition.¹⁰

VI. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–4, 6, and 8–14 of the '223 patent is hereby instituted based on all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), an *inter partes* review of claims 1–4, 6, and 8–14 of the '223 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of trial.

¹⁰ To clarify the Board's expectations, every paper and exhibit submitted as a PDF should be OCR'd and have electronically recognizable text, which can be searched and copied. Further, at the time of filing, every exhibit should be given a short, descriptive name in addition to its assigned number (Petitioner has done so). Papers, however, should cite exhibits by number rather than name. All papers and exhibits should include page numbers. Affidavits and declarations also should include paragraph numbers. We may require correction of submissions not meeting these expectations.

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