

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JIANGSU FAVORED NANOTECHNOLOGY CO., LTD.,
Petitioner,
v.
P2I LTD.,
Patent Owner.

IPR2024-00380
Patent 11,041,087 B2

Before GRACE KARAFFA OBERMANN, AVELYN M. ROSS, and
SHELDON M. McGEE, *Administrative Patent Judges*.

McGEE, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner filed a Petition (Paper 1, “Pet.”) for institution of an *inter partes* review of claims 1–5, 7, and 9–14 of U.S. Patent No. 11,041,087 B2 (Ex. 1001, “the ’087 patent”). Patent Owner filed a Preliminary Response (Paper 5, “Prelim. Resp.”). Pursuant to Board authorization (Ex. 3001), Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 7, “POPR Reply”), and Patent Owner filed a Sur-Reply (Paper 8, “POPR Sur-Reply”).

The parties identify a district court action as a related matter: *P2i, Ltd. v. Favored Tech USA Corp.*, No. 3:23-cv-01690 (N.D. Cal). Pet. 64; Paper 4, 1.

II. BACKGROUND

A. The ’087 Patent (Ex. 1001)

The ’087 patent relates to “protective coatings for electronic or electrical devices and components thereof, and methods of forming such coatings.” Ex. 1001, 1:15–17. The ’087 patent discloses that the “coatings can protect by being hydrophobic and so resist the ingress of water-based liquid into electronic devices, or they can protect by forming a barrier coating and so provide electrical resistance between the electrical parts of the phone and water based liquid.” *Id.* at 1:17–22.

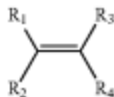
The ’087 patent discloses that “the protective cross-linked polymeric coating is obtainable by exposing the electronic or electrical device or component thereof to a plasma comprising a monomer compound and a crosslinking reagent for a period of time sufficient to allow formation of the protective cross-linked polymeric coating on a surface thereof.” *Id.* at 2:23–

28. The monomer compound and the crosslinking reagent meet certain structural requirements as discussed in more detail below. *Id.* at 4:38–13:15.

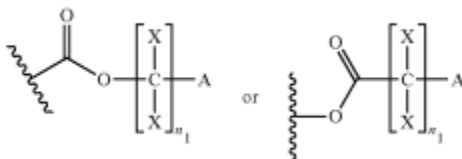
B. Challenged Claims

Sole independent claim 1 is representative of challenged claims 1–5, 7, and 9–14 of the '087 patent, and reads:

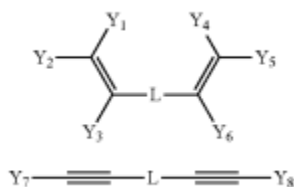
1. An electronic or electrical device or electronic or electrical component thereof comprising a protective cross-linked polymeric coating on a surface of the device or component; wherein the protective cross-linked polymeric coating is obtained by exposing the device or component to a plasma comprising a monomer compound and a cross-linking reagent for a period of time sufficient to allow formation of the protective cross-linked polymeric coating on a surface thereof, wherein the monomer compound has the following formula:



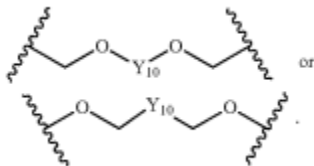
where R₁, R₂ and R₄ are each independently selected from hydrogen, optionally substituted branched or straight chain C₁-C₆ alkyl or halo alkyl or aryl optionally substituted by halo, and R₃ is selected from:



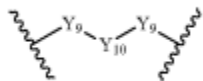
where each X is independently selected from hydrogen, a halogen, optionally substituted branched or straight chain C₁-C₆ alkyl, halo alkyl or aryl optionally substituted by halo; where A is aryl optionally substituted by halo; and n₁ is an integer from 0 to 27; and wherein the crosslinking reagent comprises two or more unsaturated bonds attached by means of one or more linker moieties and has a boiling point of less than 500° C. at standard pressure the crosslinking reagent having one of the following structures:



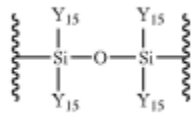
where Y_1 , Y_2 , Y_3 , Y_4 , Y_5 , Y_6 , Y_7 and Y_8 are each independently selected from hydrogen, optionally substituted cyclic, branched or straight chain C_1 - C_6 alkyl or aryl; and L is a linker moiety;
 wherein for compound (i) L is of formula A having one of the following structures:



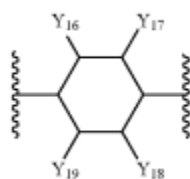
and Y_{10} is selected from optionally substituted cyclic, branched or straight chain C_1 - C_8 alkylene and a siloxane group;
 or wherein for compound (i) L is of formula B having the following formula:



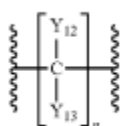
where each Y_9 is independently selected from, a bond, $-O-$, $-O-C(O)-$, $-C(O)-O-$, $-Y_{11}-O-C(O)-$, $-C(O)-O-Y_{11}-$, $-OY_{11}-$, and $Y_{11}O-$, where Y_{11} is an optionally substituted cyclic, branched or straight chain C_1 - C_8 alkylene; and wherein Y_{10} has the following formula:



and each Y_{15} is independently selected from optionally substituted branched or straight chain C_1 - C_6 alkyl; or wherein Y_{10} has the following formula:



and Y₁₆ to Y₁₉ are each independently selected from H and optionally substituted branched or straight chain C₁-C₈ alkyl or alkenyl or wherein Y₁₀ has the following formula:



and each Y₁₂ is fluoro and each Y₁₃ is fluoro, and n is an integer from 1 to 10.

Ex. 1001, 18:25–20:11.

C. Asserted Grounds of Unpatentability

Petitioner advances two grounds of unpatentability asserting that the subject matter of claims 1–5, 7, and 9–14 would have been unpatentable as set forth in the following table.

Claims Challenged	Statutory Basis	Reference(s)
1–3, 5, 7, 9–14	§ 103	Cohen ¹ , Legein ²
1–4, 7, 9–14	§ 103	Francesch ³ , Legein

Pet. 65. Petitioner’s challenge is supported by the Declaration of Dr. Karen Gleason (Ex. 1002).

¹ US 2,716,638, issued August 30, 1955 (Ex. 1004).

² WO 2014/026967 A2, published February 20, 2014 (Ex. 1005).

³ “Fabrication of Bioactive Surfaces by Plasma Polymerization Techniques Using a Novel Acrylate-Derived Monomer,” *Plasma Processes and Polymers*, 2005, 2, 605–611 (Ex. 1006).

III. ANALYSIS

We have authority to institute an *inter partes* review only where “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). The findings and conclusions set forth in this Decision are provided for the exclusive purpose of explaining our determination that Petitioner has met that standard on this record.

A. *Overview of the Prior Art*

1. *Cohen (Ex. 1004)*

Cohen discloses preparing crosslinked polymers by copolymerizing an organosilane crosslinking reagent such as divinyltetramethyldisiloxane (“DVTMDS”) with a monomeric compound such as benzyl acrylate and benzyl methacrylate. Ex. 1004, 4:6–39. Cohen discloses that its crosslinked polymers can be used for protecting electrical devices. *Id.* at 5:1–25.

2. *Legein (Ex. 1005)*

Legein discloses “a method of coating a component and/or a device to protect the component and/or the device from corrosion and liquid damage whilst affording electrical conductivity to the coated component and/or the coated device.” Ex. 1005, 4:22–24. Legein discusses “the method comprising providing on the component and/or the device a layer of a protective polymer species formed from any one or more of the following precursor monomers: acrylate; methacrylate; or organosilane.” *Id.* at 4:24–5:2. “Preferably, the method comprises the step of depositing the precursor monomer by means of low power and/or low pressure plasma polymerization.” *Id.* at 6:10–11.

3. *Francesch (Ex. 1006)*

Francesch describes a study “to develop a feasible alternative to complex functionalized monomers” and the subsequent synthesis of a “new acrylate-type monomer, pentafluorophenyl methacrylate (PFM) . . . for plasma polymerization.” Ex. 1006, 606. Francesch discloses that “PFM was also copolymerized with 1,7-octadiene . . . and with 1,4-butanediol divinyl ether (“BDVE”) . . . as crosslinkers.” *Id.* at 607.

B. *Level of Ordinary Skill in the Art*

Petitioner contends that a person having ordinary skill in the art would have had “at least a bachelor’s degree in a field such as chemistry, physics, or chemical engineering, as well as at least two years of experience with plasma-polymerization techniques.” Pet. 20 (citing Ex. 1002 ¶¶ 22–29). Patent Owner does not propose a different level of skill in the art at this stage of the proceeding. *See* Prelim. Resp., *generally*.

On this record, we determine that the level of ordinary skill is reflected in the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (specific findings on the ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown” (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163–64 (Fed. Cir. 1985))). A more specific definition is not necessary for purposes of deciding whether to institute review. To the extent a more specific definition is required, however, we adopt Petitioner’s proposed unchallenged definition because, on this record, it is consistent with the disclosures of the asserted prior art references.

C. Claim Construction

In an *inter partes* review, we construe a claim in an unexpired patent “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). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

Petitioner asserts that the claimed term “aryl” should be construed to mean “an aromatic ring system.” *See* Pet. 20–23. Patent Owner does not propose a different claim construction at this stage of the proceeding. *See* Prelim. Resp., *generally*.

After review of the preliminary record, we determine that no claim terms need to be construed for purposes of institution. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”).

D. Discretionary Denial Under 35 U.S.C. § 325(d)

Patent Owner’s arguments pertaining to discretionary denial under § 325(d) constitute the entirety of Patent Owner’s arguments on the preliminary record. We, therefore, address § 325(d) before addressing the Petition’s merits.

Specifically, Patent Owner asserts that we should exercise our discretion under 35 U.S.C. § 325(d) and deny the petition because Petitioner’s asserted references—Cohen, Legein, and Francesch—were

already considered by the Office, and because Petitioner has failed to show material error in that consideration. Prelim. Resp. 6–13; *see also* POPR Sur-Reply 1–5 (advancing similar arguments). For its part, Petitioner argues that we should not exercise our discretion under § 325(d). Pet. 60–62; POPR Reply 1–5.

1. The Legal Standard

In evaluating matters under § 325(d), the Board uses the two-part framework set forth under *Advanced Bionics, LLC v. Med-El Electromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*” or “*AB*”). Under the first prong of that framework, we must determine whether the same or substantially the same art or arguments previously were presented to the Office. If so, we turn to the second prong which focuses on whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims. *Id.* at 8.

To the extent necessary, we consider several non-exclusive factors as set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson*” or “*BD*”), which can “provide useful insight into how to apply the framework” under § 325(d). *Advanced Bionics*, 9. Those non-exclusive factors include:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson, 17–18 (formatting added). “If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.” *Advanced Bionics*, 10.

2. *Advanced Bionics Prong One: whether “the same or substantially the same art or arguments previously were presented to the Office”*

a. *BD factor (a)*

Under *BD* factor (a), we assess “the similarities and material differences between the asserted art and the prior art involved during examination.” *Becton, Dickinson*, 17.

Here, the art asserted by Petitioner is Cohen, Legein, and Francesch. Pet. 11–14; Exs. 1004, 1005, 1006. According to Petitioner, “Cohen, Legein, and Francesch were before the Patent Office during prosecution of the ’087 patent but were not discussed by the examiner or cited in any rejection.” Pet. 14. Each of these references appear on the face of the ’087 patent. Ex. 1001, code (56).⁴

Based on these facts and Petitioner’s acknowledgement that each of the references asserted in this proceeding were before the Office during

⁴ The “A1” publication of Legein also appears on the face of the ’087 patent. Ex. 1001, code (56).

examination, we find that there are no material differences between the asserted art and the prior art involved during examination under *BD* factor (a).

b. Petitioner's arguments regarding Advanced Bionics prong one

Petitioner asserts that prong one of the *Advanced Bionics* analysis is not met because the same art or arguments were not previously presented to the Office. Pet. 60. Although Petitioner acknowledges that Cohen, Francesch, and Legein were submitted to the Examiner during prosecution, Petitioner asserts “[n]one of those references were ever used in a rejection or even mentioned by the [E]xaminer.” Pet. 60; *see also* POPR Reply 2 (arguing that Patent Owner “disclosed these references via IDS only *after* the examiner had already indicated allowable subject matter” (emphasis in original)). Petitioner thus argues that the asserted art in this proceeding is “materially different and not cumulative with that considered during prosecution.” Pet. 61.

c. Analysis

We disagree with Petitioner's arguments regarding *AB* prong one because they are premised on a misapplication of our precedent. Providing a document to the Office in an Information Disclosure Statement is sufficient to satisfy *AB* prong one as long as that “previously presented” art is “the same or substantially the same” as that presented in the Petition. *See Advanced Bionics*, 7–8 (holding that “[p]reviously presented art includes . . . art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent”). As we have already found, there are no material differences between the asserted art and the prior art involved during examination under

BD factor (a). Petitioner provides no authority that requires us to interpret “involved during examination” under *BD* factor (a) as “used in a rejection” or “mentioned by the examiner” (Pet. 60), and we are aware of none. Patent Owner’s position, in that regard, appears to conflate the first *AB* prong (whether the art previously was presented to the Office) with an aspect of the second *AB* prong (the extent to which the Examiner considered that art).

d. Conclusion regarding AB prong one

We find that the Petition presents to the Office the same art previously presented to the Office during prosecution of the ’087 patent. *Advanced Bionics*, 7–8. A full analysis of *BD* factors (b) and (d) are unnecessary to resolve prong one of the *Advanced Bionics* analysis. We, therefore, move on to the second prong.

3. *Advanced Bionics Prong Two: whether “Petitioner has demonstrated that the Office materially erred in a manner material to the patentability of challenged claims”*

In addressing the second prong of the *Advanced Bionics* analysis, we consider *Becton, Dickinson* factors (c), (e), and (f). *Advanced Bionics*, 10.

a. BD factor (c)

Under *BD* factor (c), we assess “the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection.” *Becton, Dickinson*, 17.

With respect to this factor, the record indicates that Legein was first submitted in an Information Disclosure Statement (“IDS”) on August 22, 2019. Ex. 1028, 27, 29. Legein was first considered by the Examiner on September 10, 2020, prior to an Office Action dated September 18, 2020. *Id.* at 141, 168–169. The Cohen and Francesch references were submitted in

an IDS on October 8, 2020.⁵ *Id.* at 196, 198, 205. The Legein reference was submitted for a second time in that IDS. *Id.* at 198. The Examiner considered these references on December 18, 2020. *Id.* at 257, 259, 261.

Portions of the Cohen and Francesch references were also evaluated by the Examiner during examination of the '087 patent in the context of the Examiner's review of documents from an *Inter Partes* Review of parent US Patent 10,421,876. *See* Ex. 1028, 155 (Examiner's Search Notes indicating "IPR2020-01198 Review Inter Partes Review of US Patent No. 10,421,876"⁶); *see also* Ex. 1001, code (63) (indicating that the '087 patent issued from a continuation application of US 15/735,130 which issued as US Patent No. 10,421,876 ("the '876 patent")); Ex. 2004, -v-, -vi-, viii-, -xi- (Petition challenging the '876 patent identifying Cohen and Francesch as identical to those cited in the current proceeding); *id.* at 14 (asserting that Cohen discloses the crosslinker DVTMDS and Francesch discloses the crosslinker BDVE); *id.* at 25–42 (Ground 1 relying, *inter alia*, on Cohen); *id.* at 57–63 (Ground 4 relying, *inter alia*, on Francesch); Ex. 2005, 15–17, 20–21 (Patent Owner Preliminary Response filed in IPR2020-01198 discussing Cohen and Francesch); *id.* at 42–46, 52–53, 56–58 (Patent Owner advancing arguments regarding Cohen and Francesch); Ex. 2006, 10, 14–15, 17–20, 24–26, 38–41 (Institution Decision in IPR2020-01198 discussing

⁵ There is an apparent typographical error in the submission date on the IDS form filed by Patent Owner's counsel. The USPTO Electronic Acknowledgement Receipt identifies the IDS submission date as October 8, 2020. *Compare* Ex. 1028, p. 201 (indicating a submission date of "2019-10-08"), *with id.* at 205 (USPTO Electronic Acknowledgement Receipt dated "08-OCT-2020").

⁶ We sometimes refer to IPR2020-01198 as "the -1198 IPR."

Cohen and Francesch). The Examiner also considered the Declaration of Dr. Karen Gleason, Exhibit 1002, filed July 17, 2020 from the -1198 IPR which also discussed, *inter alia*, Cohen and Francesch. Ex. 1028, 198, 259. The Examiner's consideration of these documents occurred on September 10, 2020, prior to the Office Action dated September 18, 2020 identifying allowable subject matter. Ex. 1028, 141–151, 155.

Thus, although Cohen, Francesch, and Legein did not serve as the basis for a rejection during the '087 patent prosecution, we find that each of these references was evaluated by the Examiner to some extent. Specifically, as set forth above, Cohen and Francesch were each cited in an IDS and were marked as “considered” by the Examiner, and portions of these references were additionally evaluated in the context of the Examiner's consideration of several documents relevant to the -1198 IPR. Also as discussed above, Legein was cited in two separate Information Disclosure Statements and was twice “considered” by the Examiner.

Petitioner argues that “[t]he issued claims received little substantive evaluation even as to the limited prior art that was cited by the examiner,” and that “[t]he examiner effectively issued a first-action allowance regarding the issued claims.” Pet. 61. To the extent Petitioner's argument is directed to *BD* factor (c), e.g., that Petitioner is suggesting that Cohen, Francesch, and Legein were not “evaluated during examination” because they were not substantively discussed by the Examiner, we disagree with this line of argument. *BD* factor (c) does not equate “evaluated” with “substantively discussed.” *Becton, Dickinson*, 17. The record supports that the Examiner evaluated each of Cohen, Francesch, and Legein to some extent on multiple occasions based on our fact finding set forth above.

Petitioner also inaccurately characterizes the timing of the Examiner's consideration of Cohen, Francesch, and Legein. Specifically, Petitioner suggests that these references were not considered by the Examiner before the Examiner indicated allowable subject matter. POPR Reply 2. This is factually incorrect because, as set forth above, Legein was submitted in an IDS on August 22, 2019 and considered by the Examiner on September 10, 2020—prior to the Office Action indicating allowable subject matter on September 18, 2020. Ex. 1028, 27, 41–151, 168. And Cohen and Francesch were each discussed in several documents filed in the -1198 IPR, which the Examiner considered prior to indicating allowable subject matter in the prosecution of the '087 patent. Ex. 1028, 155, 250.

Based on these facts, we agree with Patent Owner that the record is not “silent” on the Office's previous consideration of Cohen, Francesch, and Legein. POPR Sur-Reply 2–3. Under these circumstances, *BD* factor (c) weighs slightly in favor of us exercising discretion to deny institution under § 325(d).

b. BD factor (e)

Under *BD* factor (e), we assess “whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art.” *Becton, Dickinson*, 18.

Petitioner asserts that “Cohen, Francesch, and Legein are asserted here to supply teachings and to support arguments that were wholly absent during prosecution—namely, that the prior art *expressly described* the structures and properties of various claimed crosslinkers that the examiner identified as supplying patentable subject matter in the issued claims.” Pet. 60–61 (emphasis in original). Petitioner alleges that the cited

disclosures of Cohen, Francesch, and Legein would have made it obvious to use the claimed crosslinkers for preparing crosslinked plasma-polymer coatings for electrical devices as claimed. *Id.* at 61.

Petitioner alleges that “there was error during prosecution,” and asserts that the Cohen and Francesch references disclose preparing crosslinked plasma-polymer coatings for electrical devices “using aryl acrylate monomers with crosslinking reagents covered by the ’087 [patent] claims, as explained in Grounds 1 and 2.” Pet. 61. Petitioner also points to Legein’s cited teachings regarding the “advantages of plasma polymerization of acrylates, methacrylates, and organosilanes for protecting electrical components [that] were not addressed during prosecution.” *Id.* Petitioner contends “the prior art contained numerous references describing” the claimed “crosslinkers and their use with acrylate monomers, including those containing aryl groups, in polymer-coating applications.” *Id.* at 61–62. Thus, Petitioner’s *de facto* position is that the Examiner overlooked specific teachings within Cohen, Francesch, and Legein, and erred by allowing the ’087 patent claims over these references.

Patent Owner argues that Petitioner has not shown material error in the Office’s previous consideration of Cohen, Francesch, and Legein. Prelim. Resp. 10–11.⁷ Relevant to *BD* factor (e), Patent Owner asserts that the Examiner considered these references and that Petitioner “takes issue with the Examiner’s conclusions regarding these references and arguments.”

⁷ We address Patent Owner’s arguments pertaining to *Advanced Bionics*’ statement “[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments” independent from the *Becton, Dickinson* factors, *infra*. *Advanced Bionics*, 9; Prelim. Resp. 11–13; POPR Sur-Reply 4–5.

Id. at 11.

We find that Petitioner has the stronger position. Petitioner has pointed to specific teachings in the prior art it believes the Examiner overlooked. *See* Pet. 60–62 (asserting that “[b]oth Cohen and Francesch taught preparing [plasma-polymer] coatings using aryl acrylate monomers with crosslinking reagents covered by the ’087 claims, as explained in Grounds 1 and 2” and that Legein teaches certain “advantages of plasma polymerization of acrylates [and] methacrylates . . . not addressed during prosecution”); *id.* at 24–60 (Petitioner’s Grounds 1 and 2). Petitioner thus identified with sufficient specificity how it believes the Examiner erred—i.e., by overlooking specific teachings within Cohen and Francesch regarding the polymerization of aryl acrylate monomers with specific crosslinkers, each purportedly falling within the scope of the claims.

Here, we disagree with Patent Owner’s suggestion that a petitioner cannot reference its proposed Grounds of unpatentability to demonstrate material error. POPR Sur-Reply 4 (citing *Vital Connect, Inc. v. Bardy Diagnostics, Inc.*, Case IPR2023–00381, Paper 7 at 20 (PTAB July 11, 2023)). The *Vital Connect* case to which Patent Owner refers is inapposite because, there, “Petitioner did not allege an error and/or substantively address § 325(d) in its Petition (or even request additional briefing).” *Id.* at 19. Such is not the case here because Petitioner addressed § 325(d)—albeit succinctly—and identified the alleged Examiner error. Pet. 60–62. Petitioner also requested additional briefing (Ex. 3001), which we granted (Paper 6; POPR Reply). This is not a case where Petitioner said nothing regarding § 325(d) and left it to the Board to determine what, if any, error occurred during the Examiner’s previous consideration of the prior art. And

while Petitioner arguably could have provided even more detail in its § 325(d) analysis,⁸ we find that Petitioner’s explanation in this particular case sufficiently identifies the alleged error in the Examiner’s evaluation of the prior art.

Under these circumstances, *BD* factor (e) weighs against us exercising discretion to deny institution under § 325(d).

c. BD factor (f)

BD factor (f) concerns “the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.” *Becton, Dickinson* at 18.

Patent Owner asserts that the Petition contains “substantially the same arguments (with respect to Cohen and Francesch) previously presented” in the -1198 IPR. Prelim. Resp. 10; *id.* at 11 (repeating this assertion). We have analyzed the Petition vis-à-vis the cited art, as well as how Cohen and Francesch were relied on in the documents considered by the Examiner in the -01198 IPR, and disagree with Patent Owner. Based on our review, we find that the Petition here relies on *broader* teachings within Cohen and Francesch than were asserted in the -1198 IPR. For example, the Petition here relies on Cohen for its purported disclosure of the crosslinking reagent DVTMDS *and two species of aryl acrylate monomers* falling within the scope of claim 1. Pet. 26–31. The Petition in the -1198 IPR relied on Cohen for its disclosure of the DVTMDS crosslinking reagent, but on *different* references (Coulson-122 and Badyal) as disclosing the monomer. Ex. 2004, 31–34. Similarly, the Petition here relies on Francesch for its purported

⁸ Petitioner did not exhaust its word count limit. Pet. 68.

disclosure of the crosslinking reagent BDVE *and a fluoro-aryl methacrylate monomer species* pentafluorophenyl methacrylate (“PFM”) falling within the scope of claim 1. Pet. 46–52. In the -1198 IPR, the Petition relied on *different* art for its disclosure of the monomer, but on Francesch for its disclosure of BDVE. Ex. 2004, 57–59.

Moreover, the Petition here relies on two separate combinations of references (Cohen & Legein and Francesch & Legein) that were not at issue either during prosecution of the ’087 patent or in the -1198 IPR documents considered by the Examiner. Additionally, the Petition here relies on a Declaration of Dr. Karen Gleason that is distinct from the Gleason Declaration from the -1198 IPR considered during prosecution of the ’087 patent. *Compare* Ex. 1002, *with* Ex. 2001.⁹ We also observe that the Petition’s merits appear to be strong based on our review of the preliminary record. As such, the additional evidence and facts presented in the Petition warrant our reconsideration of the Cohen, Francesch, and Legein references.

Based on these circumstances, we find that *BD* factor (f) weighs strongly against us exercising discretion to deny institution under § 325(d).

d. Additional Observations Relevant to Prong Two

Independent of our analysis of the *BD* factors related to prong two, our *Advanced Bionics* precedent also provides that “[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.”

⁹ Patent Owner did not include page numbers of Exhibit 2001. Dr. Gleason’s Declaration filed in support of the Petition in IPR2020-01198 was filed by Patent Owner in this proceeding as part of Exhibit 2001 as one of the IDS documents considered during prosecution of the ’087 patent.

Advanced Bionics, 9.

Patent Owner argues that there can be no material error in the Office’s prior treatment of the Cohen, Francesch, and Legein references because “[a]t best, Petitioner highlights an issue about which reasonable minds can disagree and disputes the Examiner’s conclusion.” Prelim. Resp. 10. Patent Owner notes a non-analogous art argument that it made in the -1198 IPR with respect to Cohen and Francesch. *Id.* at 12. Patent Owner contends that because the Institution Decision in the -1198 IPR “ultimately *took no position on the* [non-analogous art] *issue*,” the Examiner of the ’087 patent, when reviewing that Decision, “concluded that Cohen and Francesch were non-analogous art.” *Id.* at 12–13 (emphasis in original).

We disagree with Patent Owner. One cannot show that reasonable minds can disagree on a given “issue” where it is manifestly unclear that the “issue” even existed in the Examiner’s mind. *See* POPR Reply 3 (Petitioner arguing that Patent Owner “points to ***nothing*** in the ’087 file history that shows the examiner zeroed in on that particular argument from the IPR documents—let alone accepted it.” (emphasis in original)). There simply is no evidence advanced by Patent Owner that the Examiner was focused on—much less persuaded by—Patent Owner’s previous non-analogous art argument with respect to Cohen and Francesch in the -1198 IPR, but Patent Owner asks us to infer as much based on a record that is silent with respect to that argument.

Moreover, even if we took the substantial leap Patent Owner asks of us, we would still have to contend with additional facts: Cohen and Francesch are relied on here more broadly than in the -1198 IPR, and the challenged claims here are of different scope than in the patent challenged

there. *See* POPR Reply 2–3 (“The ’876 claims [in the -1198 IPR] did not require using aryl monomers and were therefore materially different from the ’087 claims at issue here.”). Thus, Patent Owner fails to persuade us that reasonable minds can disagree regarding the Examiner’s purported treatment of the Cohen and Francesch references. Prelim. Resp. 10–13; POPR Sur-Reply 4–5.

Additionally, we do not see any other issue (beyond Patent Owner’s theory) pertaining to the Examiner’s treatment of the art on which reasonable minds can disagree. By our count, the relied upon references here constitute just three references of 107 considered by the Examiner during prosecution of the ’087 patent. Ex. 1001, code (56).¹⁰ Although they were “considered” by the Examiner, none of Cohen, Francesch, or Legein were substantively discussed in a rejection or otherwise, and as we stated above with respect to *BD* factor (f), the Petition’s merits appear to be strong. Under these circumstances, we find the Examiner erred by overlooking certain teachings within Cohen, Francesch, and Legein relevant to the patentability of the ’087 patent claims. We find that circumstance to be more likely and reasonable than the Examiner being acutely aware of—and allowing the ’087 patent claims despite—the teachings of Cohen, Francesch, and Legein as relied upon in the Petition.

e. Conclusion regarding Prong Two

BD factor (c) weighs slightly in favor of exercising discretion to deny institution, *BD* factor (e) weighs against exercising discretion to deny institution, and *BD* factor (f) weighs strongly against exercising that

¹⁰ We do not include the duplicate A1 publication of Legein in our calculation. Ex. 1028, 198; Ex. 1001 code (56).

discretion. We additionally find that there is nothing in this preliminary record that supports that “reasonable minds can disagree regarding the purported treatment of the art or arguments” per our *Advanced Bionics* precedent. *Advanced Bionics*, 9.

In sum, we find that Petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims.

4. Conclusion regarding 35 U.S.C. § 325(d)

We find that the same or substantially the same art relied on in the Petition previously was presented to the Office, but that Petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. We, therefore, decline to exercise discretion to deny institution of *inter partes* review.

E. Petitioner’s Challenges

Turning now to the merits of Petitioner’s challenges, Petitioner sets forth where it believes Cohen and Legein disclose each of the limitations of claims 1–3, 5, 7, and 9–14, and provides reasons why a person of ordinary skill in the art would have been motivated to combine the teachings of these two references and would have had a reasonable expectation of successfully doing so. Pet. 24–45. For example, Petitioner asserts, and provides evidence to support, that Cohen discloses preparing crosslinked polymers by copolymerizing an acrylate or methacrylate monomer with an organosilane crosslinking reagent. *Id.* at 25. Petitioner sets forth where Cohen discloses two species of monomer—benzyl acrylate and benzyl methacrylate—which appear to fall within the scope of claim 1. *Id.* at 26–27. Petitioner articulates how Cohen discloses the organosilane crosslinking reagent divinyltetramethyldisiloxane (DVTMDS), which also appears to be

encompassed by claim 1. *Id.* at 28–31. Petitioner asserts, and provides evidence to support, that Legein described using plasma polymerization techniques to apply protective polymeric coatings to electrical devices and components, and taught that such coatings could be made from one or more of acrylate, methacrylate, and organosilane precursor molecules. *Id.* at 25–26. Petitioner articulates a multitude of reasons that the person of ordinary skill in the art would have had to combine the teachings of Cohen with those of Legein, and sets forth why such a skilled artisan would have had a reasonable expectation of successfully doing so. *Id.* at 31–37.

Petitioner also discusses in detail how it believes Francesch and Legein render claims 1–4, 7, and 9–14 obvious. Pet. 46–60. For example, Petitioner points to where Francesch discloses using plasma deposition to apply crosslinked polymeric coatings to silicon wafers using a hydrophobic aryl acrylate monomer pentafluorophenyl methacrylate (“PFM”) and the crosslinking reagent 1,4-butanediol divinyl ether (“BDVE”), each of which appears to fall within the respective genera recited in claim 1. Pet. 47–52. Petitioner sets forth why a person of ordinary skill in the art would have been motivated to combine the teachings of Francesch with those of Legein, and discusses why such a skilled artisan would have had a reasonable expectation of successfully doing so. *Id.* at 52–55.

Patent Owner does not challenge or otherwise address these contentions at this stage of the proceeding. Prelim. Resp., *generally*.

We have reviewed Petitioner’s challenges and the relied-upon evidence, and perceive the merits of the Petition to be strong for the reasons provided in the Petition. We are, therefore, persuaded that Petitioner demonstrates a reasonable likelihood of prevailing in its challenge of at least

one of the claims.

F. 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 the issue was raised in the Preliminary Response or discussed in this Decision. Moreover, 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.

IV. CONCLUSION

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 Geophysical AS v. Iancu*, 891 F.3d 1354, 1359–60 (Fed. Cir. 2018) (interpreting relevant statutory provisions and caselaw to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition.”).

V. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of all challenged claims of the '087 patent is instituted on all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(a) and 37 C.F.R. § 42.4, notice is given of institution of trial commencing on the entry date of this Decision.

IPR2024-00380
Patent 11,041,087 B2

For PETITIONER:

Patrick McKeever
Han-Wei Chen
Andrew Dufresne
Allison Glasunow
PERKINS COIE LLP
mckeever-ptab@perkinscoie.com
chen-ptab@perkinscoie.com
dufresne-ptab@perkinscoie.com
glasunow-ptab@perkinscoie.com

For PATENT OWNER:

Andrew Bochner
Ariel Reinitz
BOCHNER PLLC
andrew@bochner.law
ariel@bochner.law