

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TIANMA MICROELECTRONICS CO. LTD.,
Petitioner,

v.

JAPAN DISPLAY INC. and
PANASONIC LIQUID CRYSTAL DISPLAY CO., LTD.,
Patent Owner.

IPR2021-01061
Patent 10,423,034 B2

Before JO-ANNE M. KOKOSKI, KRISTINA M. KALAN, and
ELIZABETH M. ROESEL, *Administrative Patent Judges*.

ROESEL, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Tianma Microelectronics Co. Ltd. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) seeking an *inter partes* review of claims 1–4 and 6–8 (the “challenged claims”) of U.S. Patent No. 10,423,034 B2 (Ex. 1001, “the ’034 Patent”). Japan Display Inc. and Panasonic Liquid Crystal Display Co., Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2021). An *inter partes* review may not be instituted “unless . . . 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). After considering the parties’ arguments and evidence, we determine that Petitioner has shown a reasonable likelihood that it will prevail with respect to at least one claim challenged in the Petition, and we do not exercise our discretion to deny institution. Therefore, we grant institution of an *inter partes* review.

Our findings and conclusions below are based on the record developed thus far. This is not a final decision as to the patentability of any challenged claim. Any final decision will be based on the full record developed during trial.

B. *Related Matters*

Although the parties initially identified *Japan Display Inc. and Panasonic Liquid Crystal Display Co. v. Tianma Microelectronics Co.*, No. 2:20-cv-00283 (E.D. Tex.) (the “Texas litigation”), as a related matter, the

parties each filed updated mandatory notices indicating that the '034 Patent is no longer at issue in the Texas litigation. Papers 12, 14.

C. The '031 Patent (Ex. 1001)

The '034 Patent discloses a liquid crystal display (“LCD”) device in which the interval between the thin film transistor (“TFT”) substrate and the opposed substrate is defined by a column-type spacer. Ex. 1001, 2:47–52. According to the '034 Patent, by locating the spacer “at a crossing point between a scanning line and a drain line, problems due to formation of the column, including reduction of transmittance and light leakage due to orientation disturbance can be reduced.” *Id.* at 4:26–30.

D. Illustrative Claim

The '034 Patent includes eight claims, and claims 1–4 and 6–8 are challenged in the Petition. Claim 1 is the sole independent claim and is reproduced below with parenthetical identifiers added to correspond with Petitioner’s claim mapping.

1(pre). A liquid crystal display device comprising:

- (a) a first substrate;
- (b) a second substrate;
- (c) liquid crystal enclosed between the first substrate and the second substrate;
- (d) a scanning line formed between the first substrate and the liquid crystal;
- (e) a drain line crossing the scanning line;
- (f) a thin film transistor having a semiconductor layer and a source electrode,
- (g) a first insulation film above the semiconductor layer and having a first contact hole and a second contact hole, the semiconductor layer being connected to the drain line via the first

contact hole and connected to the source electrode via the second contact hole;

(h) an organic film above the source electrode;

(i) a second insulation film;

(j) a common electrode between the organic film and the second insulation film;

(k) a first pixel electrode above the second insulation film and connected to the source electrode via a third contact hole formed in the second insulation film;

(l) a second pixel electrode adjacent to the first pixel electrode; and

(m) a spacer disposed between the first substrate and the second substrate,

(n) wherein the scanning line has a first side and a second side opposite to the first side in the plan view, the first pixel electrode is located on the first side and the second pixel electrode is located on the second side,

(o)(i) wherein the semiconductor layer overlapped with the scanning line at a first channel region and a second channel region, and

(o)(ii) a part of the semiconductor layer between the first channel region and the second channel region is located on the second side of the scanning line,

(p) wherein the spacer is overlapped with the semiconductor layer, the drain line, the organic film, and the common electrode,

(q) wherein the first contact hole, the second contact hole, and the third contact hole are located on the first side of the scanning line, and

(r) wherein the part of the semiconductor layer between the first channel region and the second channel region is overlapped with the second pixel electrode.

Ex. 1001, 12:60–14:6 (parentheses with annotations added); *see* Pet. 20–63 (claim mapping).

E. Asserted Grounds

Petitioner asserts the following grounds of unpatentability under 35 U.S.C. § 103(a).¹

Ground	Claim(s) Challenged	References
1	1–4, 6–8	Ochiai, ² Ando ³
2	7	Ochiai, Ando, Hattori ⁴
3	8	Ochiai, Ando, Yanagawa ⁵

F. Testimonial Evidence

In support of the Petition, Petitioner relies on a Declaration of Dr. Bruce W. Smith. Ex. 1002 (the “Smith Declaration”). In support of the Preliminary Response, Patent Owner relies on a Declaration of Mr. Thomas L. Credelle. Ex. 2003.

II. ANALYSIS

A. Discretionary Denial

In the Preliminary Response, Patent Owner argues that the Petition should be denied under 35 U.S.C. § 314(a) and *Fintiv*⁶ in view of the Texas litigation. Prelim. Resp. 1–15. Patent Owner has since withdrawn

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the ’034 Patent has an effective filing date before this date, the pre-AIA version of § 103 applies. Ex. 1001, code (63).

² Ex. 1005, US 2008/0007679 A1, published January 10, 2008 (“Ochiai”).

³ Ex. 1006, US 6,356,330 B1, issued March 12, 2002 (“Ando”).

⁴ Ex. 1009, US 2008/0018816 A1, published January 24, 2008 (“Hattori”).

⁵ Ex. 1010, US 6,798,486 B2, issued September 28, 2004 (“Yanagawa”).

⁶ *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential).

the '034 Patent from the Texas litigation. *See* Papers 12, 14 (parties' updated mandatory notices). Accordingly, there is no longer a basis for discretionary denial under 35 U.S.C. § 314(a) and *Fintiv*.

B. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied upon).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when presented, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in

the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2016) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

C. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art (“POSA”) “would have had at least a four-year undergraduate degree in electrical engineering or physics, or a closely related field, and four years of experience in the design and implementation of flat panel display devices or components thereof.” Pet. 7 (citing Ex. 1002 ¶¶ 31–33). Petitioner also contends that “[a]dditional education could substitute for professional experience and vice versa.” *Id.*

Patent Owner’s declarant, Mr. Credelle, testifies that a POSA would have had “the equivalent of an undergraduate degree in electrical engineering, materials science, physics, or a related field and at least two years of work experience (or a graduate degree) in LCD display technology” and that “[l]ack of work experience could have been remedied by additional education, and vice versa.” Ex. 2003 ¶ 28. Mr. Credelle states that he disagrees with Dr. Smith’s asserted level of ordinary skill, but that his opinions apply equally under either proposed level. *Id.* ¶ 30.

For purposes of this Decision, we apply the level of skill in the art as defined by Mr. Credelle, which we find more appropriate and consistent

with the scope and content of the asserted prior art and the subject matter of the '034 Patent for several reasons, including that it includes a more comprehensive set of undergraduate fields of study and identifies a POSA's experience as pertaining more specifically to "LCD display technology" (Ex. 2003 ¶ 28) rather than simply "flat panel display devices," as in Petitioner's definition (Pet. 7).

D. Claim Construction

In an *inter partes* review, we apply the same claim construction standard as would be used by a district court to construe a claim in a civil action involving the validity or infringement of a patent. 37 C.F.R. § 42.100(b). Under that standard, claim terms are given their ordinary and customary meaning, as would have been understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history of record. *Id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–19 (Fed. Cir. 2005) (en banc); *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365–66 (Fed. Cir. 2012).

Neither party proposes an express claim construction for any claim term. We determine that no claim term requires express construction for purposes of this Decision. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy."); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of *inter partes* review).

E. Petitioner’s Challenge based on Ochiai and Ando

Petitioner challenges claims 1–4 and 6–8 based on Ochiai (Ex. 1005) and Ando (Ex. 1006). Pet. 16–81. Patent Owner opposes. Prelim. Resp. 24–41. We address the parties’ arguments below.

1. Independent Claim 1

Petitioner contends that Ochiai discloses an LCD device having most of the elements of claim 1, but does not disclose a spacer. Pet. 16, 49. Petitioner contends that, in view of Ando, it would have been obvious to implement Ochiai’s LCD device with a spacer between the glass substrates and to locate the spacer over the TFT at the point of intersection of a drain line and a gate line. Pet. 50, 55. Relying on teachings from Ando and the testimony of Dr. Smith, Petitioner provides reasons for this spacer location, including minimizing spacer height and providing an electric field shielding effect from the common electrode. Pet. 61–62 (citing Ex. 1002 ¶¶ 104, 105; Ex. 1006, 5:37–41, 8:59–9:5, Figs. 1, 3, 6).

Patent Owner argues that Ochiai does not disclose claim element 1(k) due to an intervening layer between the first pixel electrode and the source electrode. Prelim. Resp. 24–31. In addition, Patent Owner argues that the spacer location recited in claim element 1(p) would not have been obvious in view of Ochiai and Ando. *Id.* at 31–40.

Claim element 1(k) recites in relevant part “a first pixel electrode . . . connected to the source electrode via a third contact hole formed in the second insulation film.” Ex. 1001, 13:11–13. Petitioner contends that Ochiai teaches claim element 1(k) by disclosing a pixel electrode (PIX) electrically connected to a source electrode (DD) via an electroconductor (PD) formed in a contact hole (CH4a) in the second

electrode (DD), but argues that the connection is not via contact hole CH4a. Prelim. Resp. 25. On this record, we disagree. As shown by Ochiai Figure 3, the electrical connection between the pixel electrode (PIX) and the source electrode (DD) is via three contact holes: CH4a, CH3a, and CH2a. Ex. 1005 ¶ 121, Fig. 3. In our view based on the current record, the claim does not exclude the presence of additional contact holes through which the pixel electrode is connected to the source electrode. The '034 Patent, for example, discloses an embodiment in which pixel electrode 113 is connected to source electrode 108 through both third contact hole CH3 and fourth contact hole CH4. Ex. 1001, 5:56–60, 8:45–48, Fig. 3. Accordingly, we determine that Petitioner shows sufficiently that Ochiai discloses claim element 1(k).

In view of our determination that Petitioner shows sufficiently that Ochiai's Figure 3 embodiment discloses claim element 1(k), we do not need to address the parties' dispute about whether Ochiai discloses or suggests a different embodiment that omits electroconductor (PD). Pet. 42–48; Prelim. Resp. 26–30.

Claim element 1(p) recites: “wherein the spacer is overlapped with the semiconductor layer, the drain line, the organic film, and the common electrode.” Petitioner contends that it would have been obvious in view of Ando to implement Ochiai's LCD device with a spacer located over the TFT at the point of intersection of a drain line and a gate line. Pet. 55–62. Relying on teachings in Ando, Petitioner provides reasons why a POSA would place a spacer in this location, including minimizing spacer height and providing an electric field shielding effect from the common electrode. Pet. 61–62 (citing Ex. 1002 ¶¶ 104, 105; Ex. 1006, 5:37–41, 8:59–9:5, Figs. 1, 3, 6).

At this stage of the proceeding, Patent Owner does not dispute Petitioner's contentions that it would have been obvious to implement Ochiai with a spacer and that the spacer location proposed by Petitioner satisfies claim element 1(p). *See* Prelim. Resp. 35 (reproducing Petitioner's modified version of Ochiai Figure 1A). Patent Owner also does not dispute Petitioner's contention that Ando teaches placing a spacer over the TFT at the point of intersection of a drain line and a gate line. Pet. 55–57.

Although Patent Owner argues that Ando's opposing electrode 107 does not disclose the "common electrode" recited in claim 1 (Prelim. Resp. 32), that argument does not squarely address Petitioner's obviousness contention, which relies on Ochiai, not Ando, to disclose a common electrode. Pet. 37–39. Patent Owner also argues that a POSA "would not find it obvious to combine" Ochiai's in-plane switching ("IPS")-type transflective display device "with a non-transflective, non-conventional IPS liquid crystal display device like Ando." Prelim. Resp. 33–34 (citing Ex. 2003 ¶ 49). Although Patent Owner identifies differences between the two references, Patent Owner does not specifically address whether a POSA would have considered Ando's teachings about spacer location as relevant and instructive on where a spacer should be located in Ochiai's LCD device.

In addition, Patent Owner argues that Petitioner misapplies Ando's teaching about the relationship between spacer location and spacer height, and a POSA would not place the spacer in the location proposed by Petitioner. Prelim. Resp. 35–38. According to Patent Owner, "in Ochiai, the optimal spacer location to minimize the height of the spacer would be on the reflective layer." *Id.* at 38 (citing Ex. 2003 ¶ 53). On this record, however, it is unclear whether or how the spacer location proposed by Patent Owner differs from the spacer location proposed by Petitioner, and if so,

whether Patent Owner’s proposed spacer location would satisfy claim element 1(p). In addition, although Patent Owner argues that Petitioner’s proposed spacer location “would likely lead to alignment issues” (Prelim. Resp. 39), it is unclear whether the asserted “alignment issues” relate to alignment of the substrates (*see, e.g.*, Ex. 1001, 2:18–22; Ex. 1006, 2:55–62), alignment of the liquid crystal (*see, e.g.*, Ex. 1001, 9:46–53; Ex. 1006, 3:55–56), or some other type of alignment.

Patent Owner argues that, in Ando, “the electric potential between the TFT 216 and the opposing electrode 107 is the same.” Prelim. Resp. 39–40. Patent Owner’s argument relates to one of the reasons Petitioner asserts for its proposed spacer location, namely: “an electric field shielding effect from the common electrode.” Pet. 61 (citing Ex. 1006, 8:59–9:5). On the record before us, the shielding effect discussed by Petitioner and Ando does not appear to depend on the electric potential of the common electrode relative to the TFT, as suggested by Patent Owner, but rather, on the location of the electrode between the spacer and the TFT. Prelim. Resp. 39–40.

Accordingly, we determine that Petitioner shows sufficiently for institution that it would have been obvious in view of Ando to implement Ochiai’s LCD device with a spacer located over the TFT at the point of intersection of a drain line and a gate line, as shown by Petitioner’s modifications to Ochiai Figure 1A. Pet. 59, 60. We also determine that Petitioner shows sufficiently for institution that a POSA would have had reasons to place the spacer in this location. Pet. 61–62.

Aside from its arguments about claim elements 1(k) and 1(p), Patent Owner does not dispute Petitioner’s contention that the remaining limitations of claim 1 are disclosed or suggested by Ochiai, either alone or in combination with Ando. Pet. 16–65; *see generally* Prelim. Resp. 24–40.

Accordingly, after considering the record before us, we determine that Petitioner establishes a reasonable likelihood of prevailing on its challenge to claim 1 of the '034 Patent based on Ochiai and Ando.

2. Dependent Claims 2–4 and 6

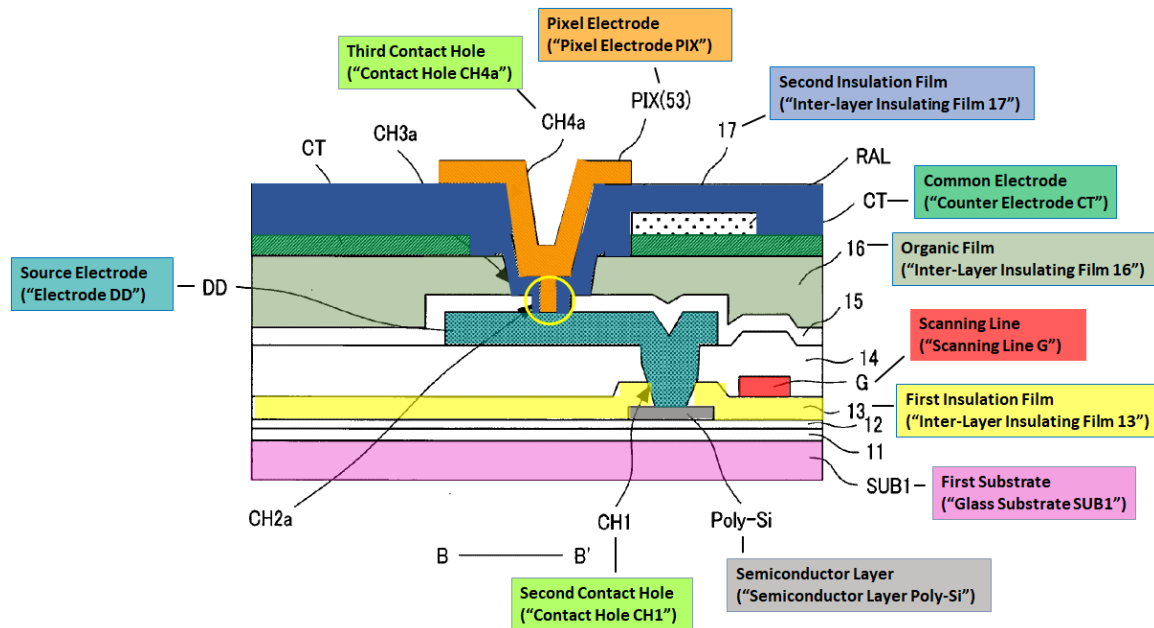
Petitioner contends that the additional limitations of dependent claims 2–4 and 6 are disclosed or suggested by Ochiai, alone or in combination with Ando. Pet. 65–73 (citing Ex. 1002 ¶¶ 113–127). At this stage of the proceeding, Patent Owner does not present counterarguments for these claims separate from its arguments for independent claim 1. *See* Prelim. Resp. 40 (relying on Patent Owner's arguments for claim 1 to address claims 2–4 and 6–8 and presenting an additional argument for claim 8).

Based on the arguments and evidence presented in the Petition (Pet. 65–73) and the Smith Declaration (Ex. 1002 ¶¶ 113–127), we determine that Petitioner establishes a reasonable likelihood of prevailing on its challenge to claims 2–4 and 6 of the '034 Patent based on Ochiai, Ando, and Yanagawa.

3. Dependent Claim 7

Claim 7 recites: “wherein the second insulation film contacts the source electrode.” Claim 7 depends from claim 6, which depends from claim 1 and which recites: “wherein the organic film has a through hole, and the third contact hole is located in the through hole in the plan view.”

Petitioner contends that Ochiai teaches that electroconductor (PD) is not always needed. Pet. 42, 74. Petitioner illustrates its contention with the following modification of Ochiai Figure 3.



Pet. 44, 75. Ochiai Figure 3 shows a cross-section of an LCD device, wherein inter-layer insulating film 17 does not contact source electrode DD. Ex. 1005 ¶ 51, Fig. 3. Petitioner modifies Ochiai Figure 3 by omitting electroconductor (PD) and extending inter-layer insulating film 17 and pixel electrode (PIX) through contact holes (CH2a, CH3a, CH4a) so that they contact source electrode (DD). Pet. 44, 75.

Patent Owner argues that Ochiai does not teach that electroconductor (PD) is optional. Prelim. Resp. 26–30. Among other things, Patent Owner argues that Petitioner’s modification of Ochiai Figure 3 “effectively recreates the prior art cross-section” depicted in Ochiai Figure 23 that Ochiai seeks to improve upon. Prelim. Resp. 29–30 (citing Pet. 44; Ex. 1005, Fig. 23).

On this record, we are not persuaded that Petitioner’s modification of Ochiai Figure 3 (Pet. 44, 75) is supported by the teachings of Ochiai. Although Petitioner asserts that “Ochiai does not provide a figure that omits electroconductor PD” (Pet. 74), that is not true. Ochiai provides prior art Figure 23, which is reproduced below.

4. *Dependent Claim 8*

Claim 8 depends from claim 1 and recites: “wherein the spacer is provided on the second substrate and located away from the third contact hole.”

The parties disagree about the meaning of “provided on.” Petitioner contends that claim 8 should be construed “to mean that the spacer is positioned against the second substrate when the LCD is fully assembled, not necessarily that the spacer was ‘formed on’ the second substrate.” Pet. 78–79. Patent Owner, on the other hand, argues that “[c]laim 8 requires the spacer to be part of the second substrate and not merely positioned against it.” Prelim. Resp. 40.

We agree with Patent Owner that, under Petitioner’s proposed construction, there would be no difference in scope between claim 1’s recitation of “a spacer disposed between the first substrate and the second substrate” and claim 8’s recitation of “wherein the spacer is provided on the second substrate.” Prelim. Resp. 41. Under Petitioner’s proposed construction, both of these limitations would encompass embodiments in which a spacer is formed either on the first substrate or on the second substrate. Petitioner’s proposed construction would thus make claim 8’s recitation of “provided on the second substrate” superfluous.⁷ Patent Owner presents a credible, evidence-supported argument that claim 8’s recitation that the spacer is “located away from the third contact hole” addresses a concern that arises only when the spacer is formed on the second substrate. *Id.* Patent Owner’s argument is supported by the ’034 Patent, as well as

⁷ See *Simpleair, Inc. v Sony Ericsson Mobile Communications AB*, 820 F.3d 419, 429 (Fed. Cir. 2016) (“[I]nterpretations that render some portion of the claim language superfluous are disfavored.”).

Mr. Credelle's testimony. Ex. 1001, 2:12–29; Ex. 2003 ¶ 57. Petitioner and Dr. Smith, on the other hand, do not address the purpose of claim 8's recitation that the spacer is "located away from the third contact hole." Accordingly, on this record, we determine that Patent Owner has the better argument for claim 8.

Petitioner contends that, even if claim 8 requires forming a spacer on the second substrate, the claim recitations would have been obvious in view of Ochiai, Ando, and general knowledge in the art. Pet. 80. Petitioner relies on the '034 Patent's statement that it was conventional to form a spacer on the substrate opposed to the TFT substrate. Ex. 1001, 2:12–14 ("The column for defining the interval between the TFT substrate and the opposed substrate is conventionally formed on the opposed substrate."). Petitioner also relies on Dr. Smith's testimony and Yanagawa. Ex. 1002 ¶ 137 (testifying that "spacers were well known in the art, and they were routinely and conventionally formed on either of the TFT substrate or the opposed substrate"); Ex. 1010, 7:39–41 (disclosing that, in the embodiment shown in Figure 1B, "the spacer 10 is formed on the filter substrate 1B, but the spacer 10 may be formed on the TFT substrate 1A."). Patent Owner does not dispute Petitioner's obviousness argument for claim 8. *See* Prelim. Resp. 40–41 (arguing that Ando does not disclose forming a spacer on the second substrate, but not addressing Petitioner's obviousness argument). On this record, we determine that Petitioner's obviousness argument for claim 8 is plausible and adequately supported by the record.

Accordingly, after considering the Petition and the Preliminary Response, we determine that Petitioner establishes a reasonable likelihood of prevailing on its challenge to claim 8 of the '034 Patent based on Ochiai and Ando.

F. Petitioner’s Challenge based on Ochiai, Ando, and Hattori

Petitioner challenges claim 7 based on Ochiai (Ex. 1005), Ando (Ex. 1006), and Hattori (Ex. 1009). Pet. 81–84. Patent Owner opposes. Prelim. Resp. 42. At this stage, the parties’ dispute focuses on whether there would have been a motivation to combine Hattori and Ochiai.

Petitioner contends that it would have been obvious in view of Hattori to extend Ochiai’s second insulating film 17 so that it contacts Ochiai’s source electrode. Pet. 81–84. Petitioner provides the following reasons for this modification: “to improve the ‘opening ratio’ of the LCD display and increase the storage capacitance of the insulation film without needing to increase the corresponding electrode area.” Pet. 83 (citing Ex. 1009 ¶¶ 9, 64).

Patent Owner argues that Hattori improves the “opening ratio” by using transparent material to form the pixel electrode and the common electrode and that Ochiai already teaches that these electrodes are made of a transparent conductive film. Prelim. Resp. 42 (citing “Ochiai at 8:55–57, 65–67”;⁸ Ex. 1009 ¶ 9). According to Patent Owner, Petitioner fails to establish a motivation to combine “because features disclosed in Hattori that produce the purported benefit already exist in Ochiai.” *Id.*

At this stage, we tend to agree with Patent Owner that Petitioner does not sufficiently establish a reason to combine the teachings of Ochiai and Hattori in the manner proposed. Patent Owner presents a record-supported argument that the feature of Hattori that results in an improved opening

⁸ Patent Owner’s citation to Ochiai is incorrect. It appears that the correct citation is Ex. 1005 ¶ 112 (“The pixel electrode (PIX) and the counter electrode (CT) are formed of transparent electroconductive films of, for instance, indium tin oxide (ITO).”)

ratio—transparent electrodes—is already present in Ochiai. Prelim. Resp. 42; Ex. 1005 ¶ 112; Ex. 1009 ¶ 9. Furthermore, we are not persuaded that Petitioner establishes a sufficient link between the limitation of claim 7 (“the second insulation film contacts the source electrode”) and Petitioner’s asserted reasons for modifying Ochiai (improve opening ratio and increased storage capacitance). Petitioner’s explanation, on this record, does not persuade us that extending Ochiai’s insulating film 17 to contact the source electrode would improve the opening ratio or increase the storage capacitance.

For these reasons, we determine that Petitioner does not establish a reasonable likelihood of prevailing on its challenge to claim 7 of the ’034 Patent based on Ochiai, Ando, and Hattori.

G. Petitioner’s Challenge based on Ochiai, Ando, and Yanagawa

Petitioner challenges claim 8 based on Ochiai (Ex. 1005), Ando (Ex. 1006), and Yanagawa (Ex. 1010). Pet. 84–88. At this stage of the proceeding, Patent Owner does not present counterarguments to this challenge separate from its arguments for independent claim 1. *See* Prelim. Resp. 43 (relying on Patent Owner’s arguments for claim 1 to address Petitioner’s challenge to claim 8 based on Ochiai, Ando, and Yanagawa).

For the reasons discussed above, we determine that Petitioner establishes a reasonable likelihood of prevailing on its challenge to claim 8 based on Ochiai and Ando. Consistent with that determination and based on the arguments and evidence presented in the Petition (Pet. 84–88) and the Smith Declaration (Ex. 1002 ¶¶ 146–151), we determine that Petitioner establishes a reasonable likelihood of prevailing on its challenge to claim 8 of the ’034 Patent based on Ochiai, Ando, and Yanagawa.

III. CONCLUSION

After considering the Petition and the Preliminary Response, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that at least one claim of the '034 Patent is unpatentable. Accordingly, we institute an *inter partes* review of all challenged claims on all grounds asserted in the Petition. *See Guidance of the Impact of SAS on AIA Trial Proceedings* (Apr. 26, 2018) (“SAS Guidance”) (explaining that “the PTAB will institute as to all claims or none” and “if the PTAB institutes a trial, the PTAB will institute on all challenges raised in the petition”).

IV. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–4 and 6–8 of the '034 Patent is instituted commencing on the entry date of this Decision; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of trial.

IPR2021-01061
Patent 10,423,034 B2

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