

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MIANYANG BOE OPTOELECTRONICS TECHNOLOGY CO., LTD.; WUHAN
CHINA STAR OPTOELECTRONICS SEMICONDUCTOR DISPLAY
TECHNOLOGY CO., LTD.; TIANMA MICROELECTRONICS CO. LTD.; AND
VISIONOX TECHNOLOGY, INC.
Petitioner,

v.

SAMSUNG DISPLAY CO., LTD.
Patent Owner.

Case No. IPR2023-00941
U.S. Patent No. 7,414,599

PETITIONER'S PRELIMINARY REPLY

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LISTING OF EXHIBITS

Exhibit	Description
EX1001	U.S. Pat. 7,414,599 (Chung)
EX1002	U.S. Pat. Pub. 2003/0132931 (Kimura)
EX1003	Expert Declaration of Dr. Daniel Foty
EX1004	U.S. Pat. 6,362,798 (Kimura '798)
EX1005	File History for U.S. Pat. 7,414,599
EX1006	U.S. Pat. Pub. 2001/0022565
EX1007	U.S. Pat. Pub. 2003/0030603
EX1008	Excerpts from <i>Analog Integrated Circuit Design</i> , David A. Johns et al., John Wiley & Sons, Inc., 1997.
EX1009	<i>Modeling and Simulation of Insulated-Gate Field-Effect Transistor Switching Circuits</i> , Harold Shichman et al., IEEE Journal of Solid-State Circuits, Vol. SC-3, No. 3, September 1968.
EX1010	Excerpts from <i>Physics and Technology of Semiconductor Devices</i> , A. Grove, John Wiley & Sons, 1967.
EX1011	Excerpts from <i>CMOS Digital Integrated Circuits: Analysis and Design</i> , (third edition), S. Kang et al., McGraw-Hill, 2003.
EX1012	U.S. Pat. 6,229,506 ("Dawson")
EX1013	U.S. Pat. 5,666,046
EX1014	<i>TFT AMOLED Pixel Circuits and Driving Methods</i> , J. Stanford, SID 03 Digest, pp. 10-13 (2003))
EX1015	<i>A New Pixel Circuit for Active Matrix Organic Light Emitting Diodes</i> , J. Goh, IEEE Electron Device Letters vol. 23, pp. 544-546 (2002)

Exhibit	Description
EX1016	<i>A Novel Pixel Circuit for Active-Matrix Organic Light-Emitting Diodes</i> , J. Goh et al., SID 03 Digest, pp. 494-497 (2003)
EX1017	<i>Current-Writing Active-Matrix Circuit for Organic Light-Emitting Diode Display Using a-Si:H Thin-Film-Transistors</i> , R. Hattori et al., IEICE Transactions on Electronics vol. E83-C, pp. 779 – 782 (2000).

The Board authorized a preliminary reply to address Patent Owner's §325(d) denial arguments (*see* POPR, 2-10). Such denial is not warranted because neither *Advanced Bionics* prong is met. With respect to prong one (corresponding to *Becton, Dickinson* factors (a), (b), and (d)), Challenged Claims 7-18 (originally numbered 8-19) resulted from a first-action allowance. EX2001, 180. All other Challenged Claims were effectively first-action allowances as well.¹ When the first Office Action issued allowing the claims, no version of Kimura (Japanese or English) was before the Office (and no English version was ever submitted).

1. Kimura was not considered by the Examiner.

Despite previously submitting several IDSs (*id.*, 40, 85, 125, 172), the Applicant waited until eight days *after* the first Office Action allowing the claims to submit an IDS containing the *Japanese* language version of Kimura (which was among six other Japanese language references totaling almost 200 pages). *Id.*, 198-421. Patent Owner makes much of the inclusion of a two paragraph English “abstract” (EX2001, 279), as if that provided meaningful disclosure of a highly-technical 63-page Japanese reference. *See* POPR, 2, 4, 6. Kimura's figures were

¹ Dependent claim 3 was “allowable if rewritten in independent form.” *Id.*, 184. Applicant rewrote claim 3 as independent claim 1, making claims 1-6 allowable. *Id.*, 426, 438. Thus, claims 1-6 were effectively first action allowances as well.

also primarily annotated in Japanese. *See, e.g.*, EX2001, 318-342.

Next, Patent Owner argues that “JP Kimura was identified to the Examiner on four separate occasions.” POPR, 4-5. But Patent Owner fails to acknowledge the reason for the reminders—*viz.*, the Examiner repeatedly failed to consider the IDS, and had not done so when the Notice of Allowance issued, as outlined below:

- 3/20/2008: Applicant “noted that [the IDS] submitted on July 20, 2007...has not been acknowledged.” *Id.* 459.
- 4/7/2008: Notice of Allowance issued. *Id.*, 472.
- 4/19/2008: Applicant “again request[ed] consideration” of the IDS. *Id.*, 484.

By contrast, the Examiner timely reviewed and initialed all prior IDS submissions. *See id.*, 188-190. That Kimura “was included in an IDS submitted three times” (POPR, 6) indicates that the Examiner had ***not*** considered Kimura.

Indeed, it was not until the allowed application was sent for printing that the IDS was acknowledged. *See* EX2001, 483 (“Printer Rush” from IDC requesting “PTO Assistance” with IDS). Even then, it was the Supervisory Patent Examiner (SPE)—not the original examiner (H-Q. Ho)—that initialed the IDS. *Id.*, 493-494; *see also id.*, 447 (identifying Alexander Eisen as SPE).

In *Sony*, the Board also considered a Japanese language IDS submission with an English abstract. *See Sony Interactive Entertainment LLC v. Bot M8, LLC*, IPR2020-00726, Paper 13 (granting institution) at 11 (PTAB Oct. 6, 2020).

Because it was unclear whether a full English translation was “readily available” (see 37 C.F.R. § 1.98(a)(3)(ii)) to the applicant when filing the IDS, the Board found the record “insufficiently developed...to determine whether [the reference] was before the Examiner such that the Examiner determined the patentability of the claims in view of [the reference].” *Id.* Here, however, the record is clear: JP Kimura’s U.S. counterpart published in English in 2003 (years before the IDS) and was readily available to the applicant. *See* EX1002. Thus, Kimura was not before the Examiner, and *inter partes* review should not be precluded under §325(d).

2. Kimura is not cumulative to Abe or Oh.

Patent Owner also cursorily alleges that Kimura is cumulative to Abe (EX2002) and Oh (EX2003). POPR, 9. Patent Owner asserts that “Abe and Oh include five-transistor pixel circuits” (*id.*, 8), as if that established cumulativeness with Kimura. It plainly does not. *See, e.g., Sony Interactive*, Paper 13, 11 (“Patent Owner merely provides a limited analysis that Sugiyama is cumulative to Bizzarri because both references disclose detecting faults after a computer boots, and subsequently running a diagnostic and repair....[W]e are not persuaded that this limited similarity renders the references cumulative...under [325(d)].”).

The Examiner expressly stated why original claim 3 (issued claim 1) was allowable: the prior art (including Abe and Oh) lacked “a fifth transistor for providing a power supply voltage for the second transistor *in response to a current*

light-emitting signal; and a sixth transistor for providing a driving current for the electroluminescent element through the second transistor in response to ***the current light-emitting signal***.” EX2001, 185 (emphasis added); *see also id.* (similar for original claim 8 (issued claim 7)). In other words, Abe and Oh lacked a ***shared light-emitting signal*** that controlled the claimed transistors. Indeed, Patent Owner does not even try to identify the transistors in Abe or Oh that would need to share a light-emitting signal. By contrast, Kimura teaches the ***shared light-emitting signal*** that the prior art of record lacked. *See, e.g.,* Petition at 64-65. Patent Owner cites Abe Figs. 19, 26, 32, and 35-36 and Oh Figs. 6, 9A, and 10A (POPR, 8), but only for the proposition that they have 5 transistors, not that they disclose or render obvious a shared light emitting signal as Kimura does. *See, e.g.,* Petition at 64-65.

3. The Examiner erred by overlooking Kimura’s teachings.

Because *Advanced Bionics* prong one is not met, the second prong (corresponding to *Becton, Dickinson* factors (c), (e), and (f)) is inapplicable. *See Advanced Bionics*, 8. Nevertheless, Patent Owner fails on prong two. Where the Patent Office’s “consideration of the art is not well developed or silent, then a petitioner may show the Office ***erred by overlooking something persuasive*** under factors (e) and (f).” *Advanced Bionics*, 10 (emphasis added); *see also, e.g., Samsung Electronics Co., Ltd., et al. v. Evolved Wireless LLC*, IPR2021-00943, Paper 9 at 10-12 (PTAB Dec. 1, 2021) (instituting IPR where “the references were

not used in a rejection or discussed by the Examiner in any Office Action.”). Such is the case here, where many claims were a first action allowance. EX2001, 180.

Even if the Examiner knew of Kimura when analyzing the claims and was fluent in Japanese, the Examiner overlooked important teachings of Fig. 36. In particular, the Examiner cited the lack of a shared light-emitting signal in the prior art when allowing the claims. EX2001, 185. But that is precisely what Kimura Fig. 36 discloses and renders obvious. *See* Petition, 64-65 (explaining why “a POSITA would have understood (or at least found it obvious) that Kimura uses ***a shared light-emitting signal*** to control [the claimed transistors]”) (emphasis added). Thus, the Examiner materially erred in not rejecting the claims over Kimura.

To the extent Patent Owner argues that Abe and/or Oh disclose a shared light-emitting signal and thus Kimura is allegedly cumulative to them, the Office plainly overlooked such disclosure. The lack of a shared signal was the reason for allowance. *See* EX2001, 185. As the Petition notes (at pages 12-13), the Examiner also erred in not applying any art that had the minimum number of transistors. As explained above, Kimura cures both errors (*i.e.*, it has the correct number of transistors and teaches the claimed shared light-emitting signal).

Petitioner respectfully submits that the Board institute IPR.

Respectfully submitted,

Dated: October 13, 2023

/Travis Jensen/

CERTIFICATE OF SERVICE

The undersigned certifies that on October 13, 2023, a copy of the following was served in its entirety via electronic mail, upon the following attorneys of record for the Patent Owner:

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