

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.

Case No. IPR2024-00855
Patent No. 8,314,547

PATENT OWNER'S PRE-INSTITUTION SUR-REPLY

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EXHIBIT LIST

Exhibit No.	Document Description
EX2001	Declaration of Dr. Florian Much
EX2002	PCT/DE2008/001302 Application Data
EX2003	2006-05-22 Invention Disclosure, same as Exhibit A to Declaration of Dr. Florian Much
EX2004	Translation of 2006-05-22 Invention Disclosure
EX2005	2006-07-25 Filing Decision (redacted), same as Exhibit B to Declaration of Dr. Florian Much
EX006	Translation of 2006-07-25 Filing Decision
EX2007	2006-08-11 Supplemental Invention Disclosure, same as Exhibit C to Declaration of Dr. Florian Much
EX2008	Certified copy of DE102007044597.2
EX2009	Certified Translation of DE102007044597.2
EX2010	Declaration of Professor Kirk S. Schanze
EX2011	Linked-In Profile of Dr. Norwin Von Malm, available from https://www.linkedin.com/in/dr-norwin-von-malm-0b928052/?originalSubdomain=de .
EX2012	List of applications filed by inventors between 7/31/2006-10/1/2008
EX2013	Krummacher, B. C. et al., "Light Extraction From Solution-Based Processable Electrophosphrescent Organic Light-Emitting Diodes," Journal of Display Technology 3(2), 200-210 (June 2007), downloaded from IEEE Xplore
EX2014	Krummacher, B. C. et al., "General method to evaluate substrate surface modification techniques for light extraction enhancement of organic light emitting diodes," Journal of Applied Physics 100, 054702 (2006)
EX2015	Krummacher, B.C., "Organic White Light-Emitting Diodes basd on Luminescence Down-Conversion," doctorate thesis (2007)
EX2016	US2008/0079015

EX2017	US7,982,387
EX2018	DE102007022090A1
EX2019	DE102007056924A1
EX2020	Salehi, A. et al., “Realization of high-efficiency fluorescent organic light-emitting diodes with low driving voltage,” Nature Communications (2019), available from Available from https://www.nature.com/articles/s41467-019-10260-7 .
EX2021	Kim, N. H., et al., “Color optimization of single emissive white OLEDs via energy transfer between RGB fluorescent dopants,” Journal of Luminescence 143, 723-728 (2013), available from www.elsevier.com/locate/jlumin
EX2022	Kim, T. G. et al., “Study of Deep Blue Organic Light-Emitting Diodes Using Doped BCzVBi with Various Blue Host Materials,” Transaction on Electrical and Electronic Materials, 11(2), pp. 85-88 (Apr. 25, 2010), available from https://koreascience.or.kr/article/JAKO201013343111173.page
EX2023	Kim, Y. H. et al., “Energy transfer between host and dopant molecules in blue organic light-emitting devices,” Journal of Applied Physics, 110, 034501 (2011) available from https://pubs.aip.org/aip/jap/article-abstract/110/3/034501/977524/Energy-transfer-between-host-and-dopant-molecules?redirectedFrom=fulltext
EX2024	EP1804092A1 to SDI
EX2025	Federal Court Management Statistics for U.S. District Courts, available from https://www.uscourts.gov/statistics/table/na/federal-court-management-statistics/2024/06/30-1
EX2026	Samsung Invalidity Contentions in the parallel district court case
EX2027	Lee, B. M., “Understanding Device Performance of Blue Organic Light-Emitting Diodes with Fluorescent and Phosphorescent Emitters,” Ph.D. thesis, McMaster University (Dec. 2019)
EX2028	Zhang, X.W. et al., “Solution-processed white organic light-emitting diodes with mixed-host structures,” Journal of

	Luminescence 132, 697-701 (2012), downloaded from https://www.researchgate.net/publication/251473369_Solution-processed_white_organic_light-emitting_diodes_with_mixed-host_structures
EX2029	Holmes, R. J. et al., “Efficient, deep-blue organic electrophosphorescence by guest charge trapping,” Applied Physics Letters 83(18), 3818-19 (Nov. 2003)
EX2030	Sajoto, T. et. al, “Blue and Near-UV Phosphorescence from Iridium Complexes with Cyclometalated Pyrazolyl or <i>N</i> -Heterocyclic Carbene Ligands,” Inorganic Chemistry, Vol. 44, 7992-8003 (2005)
EX2031	US2009/091258
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EX2040	US8,314,541
EX2041	US8,791,490
EX2042	US8,710,537
EX2043	US8,772,818
EX2044	US8,492,973
EX2045	Klein, M., et al., “OLED lighting – light where it never has been before,” Proc. Of SPIE 6486, 64860E-1 to E10 (2007)
EX2046	Krummacher, B. et al., “Optical Analysis of Down-Conversion OLEDs,” Proc. Of SPIE 6910, 691007-1 to 691007-17
EX2047	SPIE Call for Paper for 2007 OP406 Meeting
EX2048	DE102007044597A1 (published version)

EX2049	WO2009/036718A1 (published version of PCT/DE2008/001302)
EX2050	Paris Convention Official English Translation, available from https://www.wipo.int/wipolex/en/treaties/textdetails/12633 or https://www.wipo.int/wipolex/en/text/287556 .
EX2051	German Patent and Trade Mark Office Frequently Asked Questions, “When can I claim priority”? Available from https://www.dpma.de/english/patents/faq/index.html .
EX2052	<i>Pictiva Displays International Ltd. v. Samsung Electronics Co., Ltd. et al.</i> , 2:23-cv-000495, Dkt. 73 (E.D.Tex. Aug. 30, 2024)

I. Pre-AIA 35 U.S.C. § 102(b) Does Not Apply to Igarashi

Both MPEP § 2133.02 and *Unified Patents, LLC v. 2BCom, LLC*, IPR2020-00996, Paper 65, at 10–11 (Jan. 10, 2023) cited by Petitioner rely on *In re Foster*, 343 F.2d 980 (CCPA 1965). *Foster* examined whether swear-behind applies to a 102(b) reference under § 103, but nothing in *Foster* suggests that the application had a foreign priority claim. *Id.* at 987. *Foster* is thus not on point.

The authority cited in the Reply also does not involve a PCT application filed in Germany, whose effective filing date would be that of the German priority application in accordance with PCT codified under the US patent law. Specifically, PCT Article 8(2)(a) provides “[s]ubject to the provisions of subparagraph (b), the conditions for, and the effect of, any priority claim declared under paragraph (1) shall be as provided in Article 4 of ... the Paris Convention....” Paris Convention Article 4 provides “[a]ny filing that is equivalent to a regular national filing under the domestic legislation of any country of the Union ... shall be recognized as giving rise to the right of priority.” EX2050, Article 4(A)(2). The “period of priority” is limited to “twelve months for patents....” EX2050, Article 4(C)(1). The German priority application meets those requirements as it was filed under German legislation and the PCT application, which claims priority to the German application, was filed within 12 months of the application. EX2049, field 30 (priority), field 81 (US a designated country), field 84 (DE (Germany) a designated country).

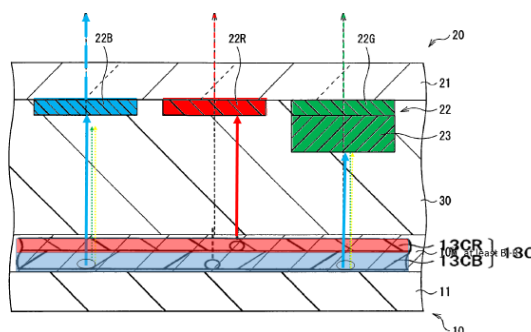
This is consistent with PCT Article 8.2(b), which provides that when a PCT application claims priority to a national application filed in a designated State, “the conditions for, and the effect of, the priority claim in that State shall be governed by the national law of that State.” PCT Article 8(2)(b). German law governs here because the PCT application claims priority to the German application, and Germany is a designated States. EX2049, p.1, field 30 (claiming priority to DE application), pp.1-2, field 84 (designating “DE”). German law permits “us[ing] a German priority for a later application outside Germany as long as the later application is filed within twelve months.” EX2051 at 3. Here, the PCT was filed within 12 months of the German application. *Compare* EX2049, field 22 (filing date) and field 30 (priority). Thus, the PCT application is entitled to the filing date of the German application.

For these reasons, 102(b) does not apply.

II. The Board Should Deny Institution Under 35 U.S.C. § 325(d)

Petitioner cannot create a dispute by ignoring Kobori’s actual disclosure. Kobori discloses that the light emitting device 10M has “an organic layer 13” that includes, among other layers, “a light emitting layer 13C.” EX1008, [0035], [0037], Fig. 2. The light emitting layer 13C includes “a light emitting layer 13CB for emitting blue light and a red light emitting layer 13CR,” but not a green emitting layer. *Id.*, [0039], Fig. 3 (not showing a separate green emitting layer). Like Igarashi and Shiotani, Kobori uses BCzVBi doped in DPVBi for “blue” emission. *Id.* Thus,

any green light emitted by 10M comes from BCzVBi in the “blue” emission layer, which as Dr. Schanze explained, has significant emission in the green light region. *See* EX2010, ¶ 23; *id.*, ¶ 22 (“BCzVBi has an emission spectrum that spans between at least 450-625nm, which includes blue, cyan, yellow-green, yellow and orange regions of the visible light spectrum.”). To compensate for the lower intensity of green light emitted by 10M, Kobori provides “a green fluorescence conversion layer 23” “for absorbing a blue wavelength component and emitting green light” EX1008, [0045], Fig. 1. The green filter adjusts chromaticity. *Id.*



Simply put, as in Igarashi’s first region, Kobori’s green conversion layer converts a blue component of an incident light from BCzVBi of 13CB that comprises wavelengths in several visible light region to a green light. *See* illustration above. As in Igarashi’s second region, the blue filter is opaque to the green/yellow/orange light and transparent to the blue light. *Id.* Yet, the examiner concluded that Kobori does not disclose both “a filter layer which is at least partially opaque to an electromagnetic radiation having a third wavelength spectrum which corresponds to at least one part of the second wavelength spectrum” (the green spectrum in Kobori,

element 1d) and one that “is transparent to the electromagnetic radiation having the first wavelength spectrum” (which has blue and other colored light, element 1f).¹ Simply put, Igarashi’s disclosure is substantively the same as Kobori’s in relevant parts and 325(d) applies.

Likewise, in Shiotani, the yellow conversion layer converts the “blue” component of the light emitted by BCzVBi to a mixture of red and green light; and the cyan filter is transparent to the blue and green light, but is opaque to yellow and orange light also emitted by BCzVBi. Hence, for the same reasons that Kobori does not simultaneously satisfy elements 1d and 1f, Shiotani does not either.

Petitioner argues that Igarashi and Shiotani need not use BCzVBi and blue emitters with narrow emission bands were known. Reply 3-4. But the paper describing those narrow-band emitters did not report making any devices with those materials. EX2030. This is not surprising because as Dr. Schanze explains, at the time of the invention, those “transition metal based blue emitters were still in their infancy and were mostly just academic curiosity at the time.” EX2010, ¶30. That the inventors had the insight and know-how to make devices with transition-metal based blue OLEDs (*see* EX2015, 46-47) did not mean that a POSITA could or would have

¹ Kobori’s red filter also does not satisfy claim 1 because it is not transparent to the blue or the green light emitted by BCzVBi as required by 1(f).

also done so. *Otsuka Pharm. Co., Ltd. v. Sandoz, Inc.*, 678 F. 3d 1280, 1296 (Fed. Cir. 2012) (“The inventor’s own path itself never leads to a conclusion of obviousness; that is hindsight.”). Moreover, Petitioner has provided no evidence that at the time of the invention, there were known OLED devices that emitted light only in the 450-470nm region as it contends. Reply 3. That “light in the blue region having a wavelength range of 450 to 470 nm is emitted” does not mean that light in other regions is not emitted concomitantly: BCzVBi emits light in 450-470nm, as well as in other visible regions, as Dr. Schanze explains. EX2010, ¶ 22.

In other words, as explained above and as on POPR 83-90, Igarashi and Shiotani are substantively the same as Kobori in relevant parts and Petitioner does not assert that the examiner made a material error. Thus, 35 U.S.C. § 325(d) applies and the Board should deny institution.

III. The Board Should Deny Institution Under 35 U.S.C. § 314(a)

The Reply does not address *Fintiv* factors 1, 4 and 5. POPR 91-92; Reply 4-5. By institution, the parties will have invested substantial resources in claim construction as well as in fact discovery, with Pictiva having already filed multiple motions to compel against Samsung and served a deposition notice. As to trial, it is still scheduled for August 2025, and Samsung’s motion to dismiss is based on outdated case law that confounded prudential standing with Article 3 standing. EX2052 at 1-2. Discretionary denial under § 314(a) is proper.

Dated: September 18, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify, pursuant to 37 C.F.R. section 42.6, that on September 18, 2024, a complete copy of the foregoing document **PATENT OWNER'S PRE-INSTITUTION SUR-REPLY and EXHIBITS 2050-2052** were served by electronic mail, as agreed to by the parties, upon the following:

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