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 SUPPLEMENTAL BRIEFING PURSUANT TO THE BOARD'S ORDER DATED NOVEMER 5, 2024

Mail Stop "PATENT BOARD"
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-145

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 *N*-Heterocyclic Carbene Ligands," Inorganic Chemistry, Vol. 44, 7992-8003 (2005)
EX2031	US2009/091258
EX2032	US8,974,679
EX2033	US8,314,418
EX2034	US2010/010276
EX2035	US8,400,054
EX2036	US8,441,004
EX2037	US8,487,329
EX2038	US8,653,548
EX2039	US9,647,186
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	*Pictiva Displays International Ltd. v. Samsung Electronics Co., Ltd. et al.*, 2:23-cv-000495, Dkt. 73 (E.D.Tex. Aug. 30, 2024)
EX2053	Samsung's Proposed Claim Constructions for the Terms and Phrases Identified for Construction per Local Rule 4-2 in *Pictiva Displays Int'l Ltd. v. Samsung Electronics Co. Ltd*., et al., Case No. 2:23-cv-000495 (E.D. Tex. Oct. 22, 2024)
EX2054	Email exchanges between Pictiva and Samsung *re* claim construction in the district court action

Claim 1 requires, *inter alia*, "an organic layer sequence which emits an electromagnetic radiation having a first wavelength spectrum during operation" (element 1[a]) and a filter in a second region (*i.e.*, the region not having a recited conversion layer) that is "transparent to the electromagnetic radiation having the first wavelength spectrum" (element 1[f]). EX1001, 14:55-15:10. The Petition took the apparent position that "an electromagnetic radiation having a[/the] first wavelength spectrum" emitted by an organic layer sequence can mean just a portion of the entire emission spectrum by focusing its analysis on only the blue emission without regard to other spectral components of the emission spectrum. *E.g.*, Pet. 17 (focusing on the 450-470nm blue emission), Pet. 50 (asserting Shiotani "generates blue light").

In the district court, however, Petitioner asserts that "an electromagnetic radiation with a first wavelength spectrum" should "correspond[] to ***the entire wavelength spectrum*** of the electromagnetic radiation emitted by the organic layer sequence" and that 1[f] requires a filter be "***transparent to*** the electromagnetic radiation ***having the first entire wavelength spectrum*** so the emission passes through the filter without any alteration of its spectral components." EX2053, 8-9. Under those constructions, the Petition fails for the reasons stated on POPR 60-72, 81-83. In particular, nothing in Igarashi or Shiotani suggests that their organic layer sequences emit ***only*** in the blue light region. For example, Igarashi discloses:

In this structure, light having, for example, a wavelength range of 380

to 780 nm … is emitted from the organic layer 24. In particular, ***in this embodiment***, light … having a wavelength of 450 to 470 nm is emitted.

EX1004, [0088] (emphasis added). As explained on POPR 60-66, in the above-referenced "embodiment" involving organic layer 24, the emission is provided by BCzVBi in DPVBi (EX1004, [0107]), a composition that emits, as shown below, not only in the blue light region, but also in "cyan, yellow-green, yellow and orange regions," with "significant emissions in the green light region." EX2010, ¶¶ 22-23; EX2023, Figs. 3, 7.[1]

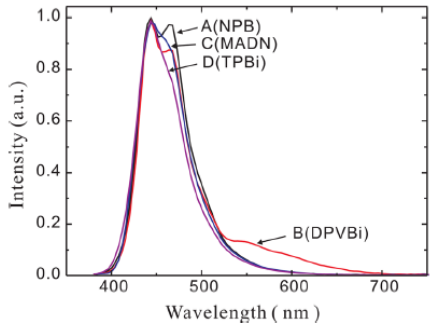


FIG. 3. (Color online) Normalized electroluminescence spectra from the present devices A, B, C, and D. See text for more details.

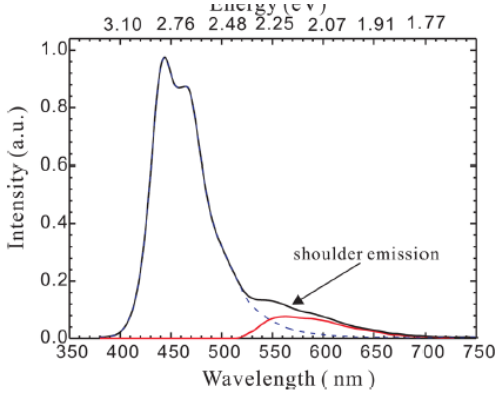


FIG. 7. (Color online) EL spectrum of BCzVBi doped in DPVBi (device B).

Thus, under Petitioner's construction for 1[a], the "electromagnetic radiation having a first wavelength spectrum" emitted by Igarashi's organic layer 24 ranges from about 400 to about 660 nm. *See* figures above. And under Petitioner's

[1] The Petition does not argue obviousness or present any reason for substituting the disclosed organic layer sequence having a broad emission spectrum and a blue peak around 450-470nm to *e.g.*, OLEDs with narrower emission spectrum (*e.g.*, between 350-450nm) and peaks other than the relied-on 450-470nm. *Contra* Reply 3-4.

construction for 1[f], the identified filter needs to let through spectral components in the 400-660nm range, "without any alteration." EX2053, 9. Yet, as Petitioner admits, Igarashi's filter transmits only blue light "while blocking light of other colors (including red and green light)[.]" Pet. 21. Hence, under Petitioner's own interpretation, by blocking and hence substantially altering the non-blue light spectral components of the emission spectrum, the relied-on filter is not transparent to "the electromagnetic radiation having the first ***entire*** wavelength spectrum."

The same is true for Shiotani, which also uses BCzVBi in DPVBi in the embodiment relied on Petitioner. POPR 81-82; EX1005, [0022]. Per Petitioner, Shiotani's filter lets through only the green and blue light. Pet. 55. Thus, the filter does not satisfy 1[f] under Petitioner's theory, because the emission of the organic layer passes through the filter with its spectral components substantially altered when the filter blocks *e.g.*, the yellow-green or yellow light component.

Aware of the fatality of its proposed construction to its Petition, Samsung has thus far refused to identify what constitutes the "electromagnetic radiation having a first wavelength spectrum" for an emission spectrum as shown on page 2. EX2054, 2-3. It has also refused to answer whether a filter that blocks light above 500 nm satisfies 1[f] under its construction. *Id.* Regardless, under Petitioner's proposed construction, the Petition fails because it fails to analyze "***the entire wavelength spectrum*** of the electromagnetic radiation emitted by the organic layer sequence."

Dated: November 8, 2024

Respectfully submitted,

By: */ Hong Zhong /*

H. Annita Zhong. (Reg. No. 66,530)
IRELL & MANELLA LLP
1800 Avenue of the Stars, Suite 900
Los Angeles, CA 90067
Tel: (310) 277-1010
Fax: (310) 203-7199
Email: hzhong@irell.com

CERTIFICATE OF SERVICE

I hereby certify, pursuant to 37 C.F.R. section 42.6, that on November 8, 2024, a complete copy of the foregoing document **PATENT OWNER'S PRE-INSTITUTION SUPPLEMENTAL BRIEFING and EXHIBITS 2053-2054** were served by electronic mail, as agreed to by the parties, upon the following:

COVINGTON & BURLING LLP

David A. Garr (Reg. No. 74,932)
dgarr@cov.com

Scott C. Weidenfeller (Reg. No. 54,531)
sweidenfeller@cov.com

SDC-Pictiva-IPR@cov.com

/Susan M. Langworthy/
Susan M. Langworthy