Paper No. 16
Filed: October 9, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC., SAMSUNG SEMICONDUCTOR, INC., and SAMSUNG AUSTIN SEMICONDUCTOR LLC,

Petitioners,

v.

W&WSENS DEVICES INC.,

Patent Owner.

Case IPR2025-00996
Patent No. 10,446,700

PETITIONERS' UPDATED EXHIBIT LIST

Pursuant to 37 C.F.R. § 42.63(e), Petitioners Samsung Electronics Co., Ltd.; Samsung Electronics America, Inc.; Samsung Semiconductor, Inc.; and Samsung Austin Semiconductor LLC hereby submit a current listing of Petitioners' exhibits. Exhibits 1088-1089 are being filed today.

Exhibit	Description
1001	U.S. Patent No. 10,446,700 B2 to Wang et al. ("'700 Patent")
1002	Declaration of Dr. Michael Lebby, Ph.D. ("Lebby")
1003	Prosecution History of the '700 Patent (downloaded from Public PAIR)
1004	U.S. Patent Application Publication No. 2012/0049044 A1 to Kuboi ("*Kuboi*")
1005	U.S. Patent Application Publication No. 2012/0033119 A1 to Shinohara ("*Shinohara*")
1006	European Patent Application EP 2 172 974 A1 to NXP B.V. ("*NXP*")
1007	U.S. Patent Application Publication No. 2008/0259981 A1 to Wang et al. ("*Wang*")
1008	U.S. Patent Application Publication No. 2009/0133741 A1 to Higuchi et al. ("*Higuchi*")
1009	Tapan K. Gupta, *Copper Interconnect Technology*, (Springer Science+Business Media, LLC 2009), pp. 67-71.
1010	Zhihong Huang et al., *Microstructured silicon photodetector*, Applied Physics Letters, Vol. 89 (2006), pp. 033506-1 to -3.
1011	Richard A. Myers et al., *Enhancing near-infrared avalanche photodiode performance by femtosecond laser microstructuring*, Applied Optics, Vol. 45, No. 35 (Dec. 2006), pp. 8825-31.

Exhibit	Description
1012	Abbas El Gamal et al., *CMOS Image Sensors*, IEEE Circuits & Devices Magazine (2005), pp. 6-20.
1013	Eric R. Fossum, *CMOS Image Sensors: Electronic Camera-On-A-Chip*, IEEE Transactions on Electron Devices, Vol. 44, No. 10 (Oct. 1997), pp. 1689-98.
1014	Sunetra Mendis et al., *CMOS Active Pixel Image Sensor*, IEEE Transactions on Electron Devices, Vol. 41, No. 3 (Mar. 1994), pp. 452-53.
1015	Renato Turchetta et al., *Introduction to CMOS Image Sensors*, Molecular Expressions™ Optical Microscopy Primer: Digital Imaging in Optical Microscopy - Introduction to CMOS Image Sensors (July 16, 2004), pp. 1-9, *available at* https://web.archive.org/web/20120508153832/https://micro.magnet.fsu.edu/primer/digitalimaging/cmosimagesensors.html
1016	Ming-Dou Ker et al., *Investigation on Device Characteristics of MOSFET Transistor Placed Under Bond Pad for High-Pin-Count SOC Applications*, IEEE Transactions on Components and Packaging Technologies, Vol. 27, No. 3 (Sept. 2004), pp. 452-60.
1017	Paul Horowitz et al., *The Art of Electronics* (Cambridge University Press, New York 3d ed. 2016), pp. 1, 11, 52, 71.
1018	*Electrical Engineering Dictionary* - CRC*netBase* (Phillip A. Laplante editor-in-chief, CRC Press LLC 2000), pp. 1-6.
1019	S.M. Sze et al., *Semiconductor Devices Physics and Technology*, (John Wiley & Sons, Inc. 3d ed. 2012), pp. 205-10, 325-26, 392-400, 416-417, 466-67.
1020	John P. Uyemura, *CMOS Logic Circuit Design* (Kluwer Academic Publishers 2002), pp. 64, 74-102, 315-17, 458-60.

Exhibit	Description
1021	Khalil Jumah Tawfiq Hamam, Organic Solar Cells Based on High Dielectric Constant Materials: An Approach to Increase Efficiency (June 2013) (Ph.D. dissertation, Western Michigan University), pp. 1-122.
1022	P. Kalugasalam et al., *Dielectric and AC Conduction Studies of Lead Phthalocyanine Thin Film*, Chalcogenide Letters, Vol. 6, No. 9 (Sept. 2009), pp. 469-76.
1023	Gopal G. Pethuraja et al., *Current-Voltage Characteristics of ITO/p-Si and ITO/n-Si Contact Interfaces*, Advances in Materials Physics and Chemistry, Vol. 2 (2012), pp. 59-62.
1024	Giampiero de Cesare et al., *Electrical Properties of ITO/Crystalline-Silicon Contact at Different Deposition Temperatures*, IEEE Electron Device Letters, Vol. 33, No. 3 (Mar. 2012), pp. 327-29.
1025	Wen-Jang Jiang et al., *The effect of indium tin oxide as an ohmic contact for the 850 nm GaAs oxide-confined VCSELs*, Solid-State Electronics, Vol. 46 (2002), pp. 1945-48.
1026	*IEEE 100 - The Authoritative Dictionary of IEEE Standards Terms*, IEEE (7th ed. 2000), pp. 333, 1205.
1027	Christian C. Fesenmaier et al., *Optical confinement methods for continued scaling of CMOS image sensor pixels*, Optics Express, Vol. 16, No. 25 (Dec. 2008), pp. 20457-70.
1028	Leonard Rubin et al., *Ion Implantation in Silicon Technology*, Industrial Physicist, 9(3), (Jun/July 2003), pp. 12-15.
1029	Jurgen Michel et al., *Advances in fully CMOS integrated photonic devices*, Proceedings of SPIE, Vol. 6477 (2007), pp. 64770P-1 to -11.

Exhibit	Description
1030	Mark Beals et al., *Process Flow Innovations for Photonic Device Integration in CMOS*, Proceedings of SPIE, Vol. 6898 (2008), pp. 689804-1 to -14.
1031	Donald A. Neaman, *Semiconductor Physics and Devices – Basic Principles* (McGraw Hill 3d ed. 2003), pp. 247-50, 260-61.
1032	Adel S. Sedra et al., *Microelectronic Circuits* (Oxford University Press 7th ed. 2015), pp. 155-56.
1033	Chung-Wei Chang et al., *High Sensitivity of Dielectric films Structure for Advanced CMOS Image Sensor Technology*, 2007 International Image Sensor Workshop, IEEE Electron Devices Society (2007), pp. 207-10.
1034	Matthew Sauceda, *Porphyrin Thin Film Dielectrics*, SUNFEST Technical Report TR-CST01NOV04, Center for Sensor Technologies, Univ. of Pennsylvania, Philadelphia, PA (2004), pp. 181-98.
1035	N. Venkatramaiah et al., *Spectroscopic and dielectric studies of meso-tetrakis(p-sulfonatophenyl) porphyrin doped hybrid borate glasses*, Journal of Alloys and Compounds, Vol. 509 (2011), pp. 2797-803.
1036	Tom J. Savenije, *Photogeneration and transport of charge carriers in a porphyrin p/n heterojunction*, Physical Review B, Vol. 55, No. 15 (Apr. 1997), pp. 9685-92.
1037	Ümit Salan et al., *Synthesis, characterization, electrical and dielectric permittivity measurements of 2,9,16,23-tetra(4-ferrocenylimino-3-nitrophenoxy)phthalocyanines*, Journal of Porphyrins and Phthalocyanines, Vol. 10 (2006), pp. 1263-70.
1038	Teresa M. Figueira-Duarte et al., *Pyrene-Based Materials for Organic Electronics*, Chemical Reviews, Vol. 111 (2011), pp. 7260-314.

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1039	*Handbook of Wafer Bonding* (Peter Ramm et al. eds., Wiley-VCH Verlag & Co. KGaA 2012), pp. 52-54, 63-64, 112-15.
1040	*W&Wsens Devices Inc. v. Samsung Electronics Co. Ltd. et al.*, Case No. 2:24-cv-00854, Plaintiff's Infringement Contentions, Appendix D-1 (Jan. 7, 2025)
1041	*W&Wsens Devices Inc. v. Samsung Electronics Co. Ltd. et al.*, Case No. 2:24-cv-00854, Plaintiff's Infringement Contentions, Appendix D-2 (Jan. 7, 2025)
1042-1076	Reserved
1077	Federal Case Management Statistics – United States District Courts (June 2025), https://www.uscourts.gov/sites/default/files/document/fcms_na_distprofile0630.2025.pdf
1078	Table Showing Trial Delays for Cases Presided by Judge Rodney Gilstrap (E.D. Tex.)
1079	U.S. District Court, Eastern District of TEXAS [LIVE], Calendar Events Set For 8/1/2026-9/1/2026, Judge Rodney Gilstrap, Presiding, https://ecf.txed.uscourts.gov/cgi-bin/CalEvents.pl?128079061733303-L_1_0-1
1080	Table Showing Post-trial Briefing and Decision Timeline, Judge Rodney Gilstrap (E.D. Tex.) (2023 - Present)
1081	Patent Proceedings for U.S. Patent Nos. 12,243,948; 12,087,871; 11,621,360; 10,468,543; 10,446,700; and 9,525,084; Docket Navigator, Cases Search, Case Filters, Patents (search in the search bar for "12243948, 9525084, 12087871, 11621360, 10468543, 10446700"); https://search.docketnavigator.com/patent/binder/0/0
1082	Geoge Quinlin, *PTAB Average Time-To-Decision in IPRs May Surprise You*, JD Supra (July 28, 2015), https://www.jdsupra.com/legalnews/ptab-average-time-to-decision-in-iprs-71645/

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1083	*W&WSens Devices Inc. v. Samsung Elecs. Co.*, No. 2:24-cv-00854-JRG, Second Amended Docket Control Order, Dkt. 56 (E.D. Tex. Apr. 24, 2025)
1084	Table Listing Public Availability Dates for Sensors
1085	M. Alarcon et al., Samsung Galaxy S5 Teardown, TechInsights Inc. (Apr. 11, 2014), https://www.techinsights.com/blog/samsung-galaxy-s5-teardown
1086	Dick James and Daniel Yang, Samsung Galaxy S6 Teardown, TechInsights Inc. (Apr. 2, 2015), https://www.techinsights.com/blog/samsung-galaxy-s6-teardown
1087	Reserved
1088	*W&Wsens Devices, Inc. v. Samsung Elecs. Co*., Case No. 24-cv-00854-JRG, Joint Motion for Entry of an Order of Partial Dismissal Without Prejudice, Dkt. 82 (E.D. Tex. Oct. 7, 2025)
1089	*W&Wsens Devices, Inc. v. Samsung Elecs. Co*., Case No. 24-cv-00854-JRG, Order Granting Joint Motion for Entry of an Order of Partial Dismissal Without Prejudice, Dkt. 82-1 (E.D. Tex. Oct. 7, 2025)

Respectfully submitted,

Dated: October 9, 2025

By: / Joshua L. Goldberg /
Joshua L. Goldberg, Lead Counsel
Reg. No. 59,369

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing **Petitioners' Updated Exhibit List** and **Exhibits 1088-1089** were served on October 9, 2025, via e-mail directed to counsel of record for the Patent Owner at the following:

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Patent Owner has consented to electronic service by email.

Dated: October 9, 2025

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