UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ENERGY SOLUTION, LTD.,
SAMSUNG ELECTRONICS CO., LTD. and
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

MOLECULAR REBAR DESIGN LLC,
Patent Owner.

Case IPR2024-01006[1]
Patent 8,808,909

PETITIONER'S UPDATED EXHIBIT LIST

[1] Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. were joined as parties to this proceeding via a Motion for Joinder in IPR2025-00356.

LIST OF EXHIBITS

LGES-1001	U.S. Patent No. 8,808,909 ("the '909 Patent")
LGES-1002	Excerpts from Prosecution History of the '909 Patent ("the Prosecution History")
LGES-1003	Declaration of Dr. Yu Zhu
LGES-1004	U.S. Patent Pub. No. 2004/0160156 ("Ohata")
LGES-1005	"Multi-walled carbon nanotubes functionalized by carboxylic groups: Activation of TiO_2 (anatase) and phosphate olivines ($LiMnPO_4$; $LiFePO_4$) for electrochemical Li-storage." Ladislav Kavan et al. Journal of Power Sources 195 (2010) 5360-5369 ("Kavan")
LGES-1006	U.S. Patent Pub. No. 2010/0136431 ("Lee")
LGES-1007	U.S. Patent Pub. No. 2010/0124713 ("Farrugia")
LGES-1008	U.S. Patent Pub. No. 2012/0064409 ("Zhamu")
LGES-1009	"Chemical oxidation of multiwalled carbon nanotubes." V. Datsyuk et al. Carbon 46 (2008) 833-840) ("Datsyuk")
LGES-1010	"Surface and structural characterization of multi-walled carbon nanotubes following different oxidative treatments." Kevin A. Wepasnick, et al. Carbon 49 (2011) 24-36 ("Wepasnick")
LGES-1011-1013	Reserved
LGES-1014	"Surface modified multi-walled carbon nanotubes in CNT/epoxy-composites." Florian H. Gojny, Jacek Nastalczyk, Zbigniew Roslaniec, Karl Schulte. Chemical Physics Letters 370 (2003)

820–824 (“Gojny”)

LGES-1015 “Sonochemical Oxidation of Multiwalled Carbon Nanotubes.” Yangchuan Xing, Liang Li, Charles C. Chusuei, and Robert V. Hull. Langmuir 2005, 21, 4185-4190 (“Xing”)

LGES-1016-1024 Reserved

LGES-1025 “The structure and property characteristics of amorphous/nanocrystalline silicon produced by ball milling.” T.D. Shen, et al. Journal of Materials Research 10 (1995), 139-149 (“Shen”)

LGES-1026 “Crystal-amorphous phase transition induced by ball-milling in silicon.” E. Gaffet, M. Harmelin. Journal of the Less Common Metals 157 (1990), 201-222 (“Gaffet”)

LGES-1027 U.S. Patent No. 9,012,073 (“Kumar”)

LGES-1028 U.S. Patent No. 9,190,694 (“Lopez”)

LGES-1029 U.S. Patent No. 7,851,085 (“Obravac”)

LGES-1030 “Labeling the Defects of Single-Walled Carbon Nanotubes Using Titanium Dioxide Nanoparticles.” Xiaohong Li, Jiali Niu, Jin Zhang, Hulin Li, and Zhongfan Liu. The Journal of Physical Chemistry B 107 (2003) 2453-2458 (“X. Li”)

LGES-1031 Excerpts from Prosecution History of EP2724403B1

LGES-1032 U.S. Patent No. 8,241,794 (“Sheem”)

LGES-1033 “TiO_2 rutile—An alternative anode material for safe lithium-ion batteries.” M. Pfanzelt, P. Kubiak. Journal of Power Sources 106

	(2011) 6815-6821 (“Pfanzelt”)
LGES-1034	U.S. Patent Pub. No. 2011/0159366A1 (“Nakura”)
LGES-1035	U.S. Patent Pub. No. 2009/0117463A1 (“Takezawa”)
LGES-1036	Reserved
LGES-1037	“Preparation of Nanocomposites of Metals, Metal Oxides, and Carbon Nanotubes via Self-Assembly.” Jing Li, Songbai Tang, Li Lu, and Hua Chun Zeng. Journal of the American Chemical Society 129 (2007) 9401-9409 (“J. Li”)
LGES-1038	“Enhanced photocatalytic activity of mesoporous TiO_2 aggregates by embedding carbon nanotubes as electron-transfer channel.” J. Yu, T. Ma, S. Liu. Phys. Chem. Chem. Phys. 13 (2011) 3491–3501 (“Yu”)
LGES-1039	“Long-time low-impact ball milling of multi-wall carbon nanotubes.” A. Kukovecz, T. Kanyo, Z. Konya, I. Kiricsi. Carbon 43 (2005) 994-1000. (“Kukovecz”)
LGES-1040	“Green energy storage materials: Nanostructured TiO_2 and Sn-based anodes for lithium-ion batteries.” D. Deng, M. Kim, J. Lee, J. Cho. Energy & Environmental Sciences 2 (2009) 818-837 (“Deng”)
LGES-1041	“Hydrothermal synthesis of lithium iron phosphate.” J. Chen, M. Whittingham. Electrochemistry Communications 8 (2006) 855-858 (“Chen”)
LGES-1042	“The preparation and electrochemical performances of $LiFePO_4$-

	multiwalled nanotubes composite cathode materials for lithium ion batteries." Y. Feng. Materials Chemistry and Physics 121 (2010) 302-307 ("Feng")
LGES-1043	"Preparation of Single-Walled Carbon Nanotube/Silicon Composites and Their Lithium Storage Properties." J-Y. Eom, H-S. Kwon. Applied Materials & Interfaces 3 (2011) 1015-1021 ("Eom")
LGES-1044	A. Hirsch. "Functionalization of Single-Walled Carbon Nanotubes" *Angew. Chem. Int. Ed.* 2002, 41, No. 11, 1853-1859 ("Hirsch")
LGES-1045-1049	Reserved
LGES-1050	*Molecular Rebar Design, LLC, and Black Diamond Structures, LLC v. LG Energy Solution, Ltd.*, Plaintiffs' Disclosure of Asserted Claims and Infringement, 2:24-cv-00107-JRG
LGES-1051	Declaration of June Ann Munford (Kavan)
LGES-1052	Declaration of June Ann Munford (Wepasnick)
LGES-1053	*Molecular Rebar Design, LLC, et al. v. LG Energy Solution, Ltd.*, Sample Docket Control Order, 2:24-cv-00107-JRG
LGES-1054	Deposition Transcript of Dr. Deborah Chung in IPR2024-01006 ('909 Patent)
LGES-1055	Deposition Transcript of Dr. Deborah Chung in IPR2024-01005 ('649 Patent)
LGES-1056	Supplemental Declaration of Dr. Yu Zhu

LGES-1057	Patent Owner's Response in IPR2024-01005 ('649 Patent)
LGES-1058	Declaration of Dr. Yu Zhu in IPR2024-01013 ('483 Patent)
LGES-1059	"Increase the Mechanical Performance of Polyvinylidene Fluoride (PVDF)." M. Hou. Cheng. Advanced Materials Research Vols. 393-395 (2012) ("Hou").
LGES-1060	Patent Owner's Response in IPR2024-01012 ('282 Patent)
LGES-1061	U.S. Patent Pub. No. 2007/0060708 ("Wang")
LGES-1062	"Alternative solvents for Lithium-Nickel-Cobalt-Manganese-Oxide electrode fabrication for lithium-ion-cells." F. Heim et al. Journal of Power Sources 558 (2023) 232546 ("Heim")
LGES-1063	US Patent No. 8,540,902 ("Xing")
LGES-1064-1099	Reserved
LGES-1100	Exhibit LGES-1100 in IPR2024-01005
LGES-1101	Petitioner's Demonstratives

Respectfully submitted,

Dated: September 12, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on September 12, 2025, a complete and entire copy of this Petitioner's Updated Exhibit List and Exhibit 1101 were provided by email to the Patent Owner by serving the correspondence address of record as follows:

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