

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC. and
PORSCHE CARS NORTH AMERICA, INC.,
Petitioner

v.

YECHEZKAL EVAN SPERO,
Patent Owner

Case IPR2022-01586¹
U.S. Patent No. 11,208,029

**PETITIONER VOLKSWAGEN GROUP OF AMERICA, INC.’S REPLY TO
PATENT OWNER’S OPPOSITION TO PETITIONER’S MOTION TO
EXCLUDE EVIDENCE UNDER 37 C.F.R. § 42.64(c)**

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

¹ Porsche Cars North America, Inc., which filed a petition in IPR2023-01122, has been joined as a party to this proceeding.

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PETITIONER’S UPDATED EXHIBIT LIST

<i>Exhibit #</i>	<i>Description</i>
1001	U.S. Patent No. 11,208,029 B2 to Spero (“the ’029 patent”)
1002	Prosecution File History of U.S. Patent No. 11,208,029 B2 (“’029 File History”)
1003	Declaration of Dr. Jianzhong Jiao
1004	Curriculum Vitae of Dr. Jianzhong Jiao
1005	U.S. Patent No. 6,144,158 to Beam
1006	U.S. Patent Application Publication No. 2001/0019486 to Thominet <i>et al.</i>
1007	<i>Intentionally Left Blank</i>
1008	U.S. Patent No. 6,049,749 to Kobayashi
1009	WIPO Patent Publication No. 2002/004247 to Braun <i>et al.</i>
1010	WIPO Patent Publication No. 1998/054030 to Karlsson
1011	WIPO Patent Publication No. 2001/001038 to Harbers <i>et al.</i>
1012	U.S. Patent No. 5,588,733 to Gotou
1013	<i>Intentionally Left Blank</i>
1014	<i>Intentionally Left Blank</i>
1015	Westermann, “History and Scientific Back-up,” 48th Session of GRE, EUREKA Project 1403, Informal Document No. 30, April 30, 2002
1016	“Adaptive Front Lighting Systems (AFS),” 48th Session of GRE, EUREKA Project 1403, Informal Document No. 28, April 12, 2002
1017	Hogrefe <i>et al.</i> , “Adaptive Light Pattern – A New Way to Improve Light Quality,” SAE Transactions, Vol. 106, No. 6, February 27, 1997
1018	Löwenau <i>et al.</i> , “Adaptive Light Control – A New Light Concept Controlled by Vehicle Dynamics and Navigation, SAE Transactions, Vol. 107, No. 6, pp. 33-38, February 26, 1998
1019	Manassero <i>et al.</i> , “Adaptive Headlamp: A contribution for Design and Development of Motorway Light,” SAE Transactions, Vol. 107, No. 6, February 26, 1998

<i>Exhibit #</i>	<i>Description</i>
1020	Michael Hamm, “System Strategies for Adaptive Lighting Systems,” 2001 Symposium: Progress in Automobile Lighting (PAL), pp. 368-380, September 26, 2001
1021	<i>Intentionally Left Blank</i>
1022	U.S. Patent No. 5,975,734 to Müller
1023	Manassero <i>et al.</i> , Adaptive Lighting Systems: Technical Solutions and Methodological Approach for Photometric Specifications, Progress in Automotive Lighting Vol. 6, pp. 514-525 (1999).
1024	Hanno Westermann, Lighting Performance Requirements in Vehicle Lighting Exemplified by System Requirements for AFS, Progress in Automotive Lighting Vol. 6, pp. 807-820 (1999).
1025	Diem <i>et al.</i> , Analysis of the Eye-Movement Behaviour During Use Moveable Headlamps, Progress in Automotive Lighting Vol. 5, pp. 185-207 (1999).
1026	Kobayashi & Sugimoto, Development of the Phase-I AFS Front Lighting System, Progress in Automotive Lighting Vol. 5, pp. 449-464 (1999).
1027	Alejandro Vukotiich, Evaluation of the applicability of digital maps for the reconstruction of the real street shape, Progress in Automotive Lighting Vol. 6, pp. 774-790 (1999).
1028	Bernhard Wörner, Adaptive Frontlighting – Experimental System, Development and Functional Evaluation, Progress in Automotive Lighting Vol. 6, pp. 844-853 (1999).
1029	Mark van den Berg, Development of high Brightness LED’s for Automotive Applications, Progress in Automotive Lighting Vol. 9, 987-993 (2001).
1030	Assessment of Headlamp Glare and Potential Countermeasures, Survey of Advanced Front Lighting System (AFS) Research and Technology, National Highway Traffic Safety Administration (2005)

<i>Exhibit #</i>	<i>Description</i>
1031	Watanabe <i>et al.</i> , The Research on the Effectiveness of AFS Bending Lamp in Japanese Road Environment, Progress in Automotive Lighting Vol. 9, 1042-1053 (2001).
1032	First Amended Complaint, <i>Torchlight Techs. LLC v. Daimler AG, et al.</i> , Civil Action No. 1:22-cv-00751 (D. Del.), filed August 26, 2022 (ECF No. 24)
1033	File History of <i>Ex Parte</i> Reexamination of U.S. Patent No. 9,955,551, Control No. 90/014,815
1034	U.S. Patent No. 6,127,947 to Uchida <i>et al.</i>
1035	United States District Courts – National Judicial Caseload Profile, June 2022
1036	Declaration of Jianzhong Jiao, Ph.D., in Support of Petitioner’s Reply
1037	Transcript of the Deposition of Matthew A. Turk, Ph.D.
1038	Leighty, <i>et al.</i> , “Developing Technologies for Army Autonomous Land Vehicles (U),” Leighty & Lane, available at Army Engineer Topographic Labs, Fort Belvoir, October 1985 (accessible online at https://apps.dtic.mil/sti/tr/pdf/ADA187972.pdf , last accessed October 30, 2023)
1039	Lowrie, <i>et al.</i> , “The Autonomous Land Vehicle (ALV) Preliminary Road-Following Demonstration,” Lowrie, James, Thomas, Mark, Gremban, Keith, Turk, Matthew, Proceedings of SPIE, Vol. 579 Intelligent Robot and Computer Vision, (11 December 1985), (accessible at https://home.ttic.edu/~mturk/pubs/ALV-preliminary-SPIE1985.pdf , last accessed October 30, 2023)
1040	U.S. Patent. No. 5,426,294, to Kobayashi <i>et al.</i> , issued June 20, 1995
1041	“The International System of Units (SI),” Bureau International des Poids et Mesures, 7 th Edition (1998) (Excerpt)
1042	Surface Vehicle Recommended Practice, Performance Requirement for Motor Vehicle Headlamps, J1383 (May 2018)
1043	“Turk Diagram,” (Exhibit A) From the Deposition of Matthew A. Turk PhD, October 17, 2023

<i>Exhibit #</i>	<i>Description</i>
1044	49 C.F.R. 571.108, Standard No. 108 (Up To date as of Nov. 3, 2023)
1045	Terminology – Motor Vehicle Lighting, SAE J387 Nov87, The Engineering Society For Advancing Mobility Land Sea Air and Space (Revised Nov. 1987)
1046	Complete copy of “The International System of Units (SI),” Bureau International des Poids et Mesures, 7 th Edition (1998) (EX1041) (<i>served not filed</i>)
1047	E-mail dated February 7, 2024, from Andrew B. Turner to trials@uspto.gov

I. INTRODUCTION

This Motion to Exclude is simple. The parties agreed that a POSA required “at least 2 years of *industry experience in the area of automotive lighting and lighting-control systems*.” Pet., 10; POR, 21 (emphasis added unless noted). Patent Owner did not dispute the definition despite the invitation to do so. Dr. Turk *himself* accepted this level of skill. Yet Dr. Turk falls short of this skill level, so his testimony is not admissible under *Kyocera* and the FRE.

Patent Owner’s disingenuous assertion that the POSA definition was a “new” argument in Petitioner’s Reply is belied by its acknowledgement—*before filing its POR*—that it understood Petitioner’s challenge to Dr. Turk’s qualification as a POSA: “*To the extent you are implying that Dr. Turk’s education or experience does not satisfy Petitioner’s proposed level of skill in the art*, then please review Petitioner’s Expert’s qualifying statement: ‘a higher level of education or skill might make up for less experience and vice versa.’ (Ex. 1003, ¶42.)” EX2027, 1; Opp., 5 (“Petitioner first suggested its new narrow interpretation of the POSA level in its objection to Ex.2001 on June 8, 2023.”). Patent Owner nonetheless declined the Board’s invitation to explain “the extent Patent Owner believes the level of ordinary skill affects this proceeding” (Institution Decision, 5-6), even though it contends Dr. Turk’s declarations “are ‘central to the parties’ dispute’ regarding every technical issue in this proceeding.” EX1047 (Patent

Owner’s Email to the Board, dated February 7, 2024). Patent Owner cannot now feign, with self-serving hindsight, that it “understood” its POPR POSA definition was “effectively incorporated” in Petitioner’s definition. Opp., 3.

Patent Owner now veers in a new direction, alleging the “seminal” issue is “whether optics and sensing/imaging experience are relevant to the POSA level.” *Id.*, 1. But this diversion misses the mark entirely. Whether other technologies may also be “relevant” to the POSA level does *not* eliminate the agreed-upon requirement here that a POSA have “at least 2 years of industry experience in the area of automotive lighting and lighting-control systems.” Of course, in “adaptive motor vehicle headlamps with LED light sources” (MTE, 4 (cited by Opp., 1)), experience in optics and sensing/imaging—within the context automotive lighting and lighting control—may aid a POSA’s knowledge and understanding. But optics and sensing/imaging as it pertains to, for example, Dr. Turk’s experience with computer vision/facial recognition (EX2001, ¶¶7, 10, 12, 15-16; EX2006, ¶¶9-10, 12, 14, 17-20; EX2002, 4) does *not* satisfy (or replace) the agreed-upon industry experience in “automotive lighting and lighting-control systems.” Pet., 10.

II. ARGUMENT

A. Patent Owner did not dispute the Petition’s POSA definition, the agreed-upon definition has not changed, and there is no credible argument that Dr. Turk’s testimony is admissible.

Patent Owner again acknowledges it did not dispute the POSA definition

(Opp., 3-4); and Dr. Turk *himself* accepted the level of skill (EX1037, 60:19-61:2) that he does not meet. So his declarations must be excluded. *Kyocera Senco Indus. v. Int’l Trade Comm’n*, 22 F.4th 1369, 1375-78 (Fed. Cir. 2022). The POSA definition in *Kyocera* also permitted a “sliding scale” of education and experience. *Id.* at 1376. But that did not excuse the need for experience in the specified field of power nailer design, *id.* at 1377-78, just as here it does not excuse the need for experience in automotive lighting and lighting-control systems.

Arguing merits, not admissibility, Patent Owner claims that Petitioner’s Reply provides a “new interpretation of its proposed POSA skill level, one that requires specific industry experience.” Opp., 4 (emphasis in Opp.). The Board need look no further than the Petition itself, which plainly required “at least 2 years of industry experience in the area of automotive lighting and lighting-control systems,” Pet., 10, to find that Patent Owner’s argument is demonstrably false.

Of course there is no requirement that Dr. Turk have the “same exact CV as Dr. Jiao.” Opp., 4; *cf. Tecossl, Inc. v. Avid Labs, LLC*, 5:19-cv-00043, Dkt. No. 183 (E.D. Ky. Feb. 9, 2024) (granting motion to exclude proffered expert because his “substantially impressive resume” could not overcome that he lacked the technical experience required of a POSA). But as Patent Owner again acknowledges, Dr. Turk has no experience with a vehicle headlamp company, an LED (or any other light source) company, or lighting design, or awards/patents for

a vehicle forward lighting system. Opp., 4. These are *not pre-requisites* of a POSA here, despite Patent Owner's attempt to paint them as "new" additions to the POSA definition. *See id.* But their absence, along with Dr. Turk's unfamiliarity with key terms and authorities, revealed in his direct and cross-examination testimony, is *further evidence* he is not a POSA. And while Dr. Jiao of course acknowledged that optics and imaging/sensing may be part of adaptive automotive lighting, it does not follow that any person with generic experience in optics and imaging/sensing is qualified to opine on a POSA's understanding of "automotive lighting and lighting-control systems." *See id.*, 3-4. Patent Owner has not met *its burden* of establishing Dr. Turk's testimony as admissible; so it must be excluded.

Finally, Dr. Turk's alleged experience on an "illumination portion" of a Martin Marietta project (MTE, 6-7) still falls short—Patent Owner even *admits* that "adaptive automotive lighting, such as that claimed in the '029 Patent is more sophisticated than just illumination," Opp., 12, as in Dr. Turk's project.

B. Patent Owner waived its right to dispute the POSA definition.

Precisely contrary to Patent Owner's position, Opp., 5, it did, in fact, waive its right to contest the POSA definition by choosing not to do so in its POR. Patent Owner made *no attempt* to distinguish or respond to Petitioner's controlling authorities. MTE, 14 (citing *Intuitive Surgical, Finjan, In re Nuvasive*, CTPG, p. 52). Instead, Patent Owner again argues Petitioner provided a "new interpretation"

of the POSA in the Reply, in order to make its *own* new POSA arguments. *Id.* But Petitioner's position has never changed. So Patent Owner's new arguments were waived, despite its remorse. "Patent Owner could have, and should have, raised this [POSA-definition] argument in its Patent Owner Response," if it was disputed. *Intuitive*, IPR2020-00650, Paper 33, at 33 n.4 (citing 37 C.F.R. § 42.23(b)).

Instead, Patent Owner agreed with Petitioner. POR, 21; EX1037, 60:19-22.

C. Patent Owner misrepresents Petitioner's considerations for the POSA's skill level.

Again arguing merits and not admissibility, Patent Owner makes numerous unsupported assertions about what Petitioner allegedly "did not consider" for the POSA definition. Opp., 6-9. But Petitioner, via Dr. Jiao, listed myriad considerations for the POSA skill level. EX1003, ¶¶27-30. And Dr. Jiao provided plenty of context on the patent's purpose, education of those in the field, and types of technological problems and solutions faced by those in the art. *Id.*, ¶¶44-61. In deposition, Dr. Jiao confirmed that the relevant "experience" is industry experience "[i]n the area of automotive lighting and lighting control," and that "education, like a university education" may be considered formal training—"[i]f it is related to automotive lighting." EX2018, 114:6-116:6. Finally, while not raised until Patent Owner's Sur-Reply, Mr. Spero's purported LinkedIn profile, which itself is not even in the record, is not dispositive (and may not even be an accurate representation) of his experience or his status as a POSA. *See* Opp., 15.

Respectfully submitted,

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PETITIONER VOLKSWAGEN GROUP OF AMERICA, INC.'S REPLY TO PATENT OWNER'S OPPOSITION TO PETITIONER'S MOTION TO EXCLUDE EVIDENCE UNDER 37 C.F.R. § 42.64(c) and Exhibit 1047** were served in their entirety on February 14, 2024, upon the following parties via electronic mail:

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