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.

U.S. Patent No. 11,208,029 to Spero

Case No.: IPR2022-01586*

PATENT OWNER'S OPPOSITION TO MOTION TO EXCLUDE EVIDENCE UNDER 37 C.F.R. § 42.64(c)

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

TABLE OF CONTENTS

Table	e of Au	ıthorit	ies	ii		
I.	INTRODUCTION1					
II.	ARG	ARGUMENT2				
	A.		001 and 2006: Dr. Turk Exceeds the Level of Skill red for a POSA	2		
		1.	Petitioner Proposed a Broad Skill Level	2		
		2.	As The POSA Dispute Was Timely Challenged, There Is No Waiver	5		
		3.	Petitioner's Current Narrow Interpretation Does Not Consider Precedent Governing the POSA Determination	6		
		4.	Dr. Turk Is Qualified in the Pertinent Art of Automotive Lighting and Lighting-Control Systems	9		
		5.	Petitioner Attempts to Distract from its Unreasonable Technical Positions by Challenging Dr. Turk's Experience	.12		
	B.	Нуре	rlink to Inventor's LinkedIn Profile	.15		
Certif	icate c	of Servi	ice Pursuant to 37 C.F.R. § 42.6(e)	.17		
Certif	icate c	of Com	pliance Pursuant to 37 C.F.R. § 42.24	.19		

Table of Authorities

Cases

Rules			
Consolidated Trial Practice Guide November 20194			
Other Authorities			
Sundance, Inc. v. DeMonte Fabricating Ltd., 550 F.3d 1356 (Fed. Cir. 2008)4			
Standard Oil Co. v. American Cyanamid Co, 774 F.2d 448 (Fed. Cir. 1985)			
594 F.3d 1360 (Fed. Cir. 2010)			
SEB S.A. v. Montgomery Ward & Co.,			
Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n, 22 F.4th 1369 (Fed. Cir. 2022)			
<i>In re NuVasive, Inc.</i> , 841 F.3d 966 (Fed. Cir. 2016)6			
DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co., 464 F.3d 1356 (Fed. Cir. 2006)7			
<i>Daiichi Sankyo Co. v. Apotex, Inc.,</i> 501 F.3d 1254 (Fed. Cir. 2007)			
Chamberlain Grp v. One World Techs., 944 F.3d 919 (Fed. Cir. 2019)			
Best Medical International, Inc. v. Elekta Inc., 46 F.4th 1346 (Fed. Cir. 2022)			

J = 0.1 . R. $g = 42.23(0)$	37 C.F.R. § 42.23(b)	1	15
-----------------------------	----------------------	---	----

List of Exhibits

Exhibit No.	Description	
2001	Declaration of Matthew A. Turk, PhD	
2002	Curriculum Vitae of Matthew A. Turk, PhD	
2003	Petition challenging U.S. Patent No. 11,208,029, Unified	
2000	Patents, LLC v. Torchlight Technologies LLC IPR2022-01500,	
	Paper 1, September 22, 2022	
2004	U.S. 6,406,172 to Harbers	
2005	Comparison of Harbers (Ex. 1011) to Harbers '172 (Ex. 2004)	
2006	Supplemental Declaration of Matthew A. Turk, PhD	
2007	Transcript of Deposition of Jianzhong Jiao, Ph.D. taken on	
	August 2, 2023	
2008	Petition challenging U.S. Patent No. 9,995,551, Volkswagen	
	Group of America, Inc. v. Yechezkal Evan Spero IPR2023-	
	00318, Paper 2, December 22, 2022	
2009	Declaration of Dr. Jiao, Volkswagen Group of America, Inc. v.	
	Yechezkal Evan Spero IPR2023-00318, Exhibit 1003.	
2010	Jianzhong Jiao and Ben Wang, "Etendue Concern for	
	Automotive Headlamp Using LEDs," SPIE Proceedings Vol.	
	5187, (January 2004) (Available at	
	https://www.spiedigitallibrary.org/conference-proceedings-of-	
	spie/5187/0000/Etendue-concerns-for-automotive-headlamps-	
	using-white-LEDs/10.1117/12.504363.short)	
2011	Michael Bass, Handbook of Optics 3 RD Edition Volume II,	
	(McGraw-Hill, 2010) (Available at	
	https://www.worldcat.org/title/555545456)	
2012	Ben Wang and Jianzhong Jiao "Studies for Headlamp Optical	
	Design Using LEDs," SAE Technical Paper Series 2004-01-	
	0434, (March 2004) (Available at	
	https://www.sae.org/publications/technical-	
	papers/content/2004-01-0434/)	
2013	Ben Wang and Jianzhong Jiao "Optical Transform Limitations	
	in Headlamp Photometric Performance," SAE Technical Paper	
	Series 2005-01-0861, (April 2005) (Available at	
	https://www.sae.org/publications/technical-	
2014	papers/content/2005-01-0861/)	
2014	LEDs Magazine "Major contributors in LED and lighting	

Exhibit No.	Description
	standards have led the SSL revolution," Jianzhong Jiao
	February 2018. (Available at
	https://www.ledsmagazine.com/manufacturing-services-
	testing/standards/article/16695802/major-contributors-in-led-
2015	and-lighting-standards-have-led-the-ssl-revolution-magazine)
2015	Jianzhong Jiao and Ben Wang "High-Efficiency Reflector
	Optics for LED Forward Lighting," SPIE Proceedings Vol. 6670, (September 2007) (Available at
	6670, (September 2007) (Available at https://www.spiedigitallibrary.org/conference-proceedings-of-
	spie/6670/66700M/High-efficiency-reflector-optics-for-LED-
	automotive-forward-lighting/10.1117/12.730524.short)
2016	Navigant Consulting "Energy Saving Estimates of Light
	Emitting Diodes in Niche Lighting Applications" Building
	Technologies Program Office of Energy Efficiency and
	Renewable Energy U.S. Department of Energy (September
	2008) (Available at Energy Savings Estimates of Light
	Emitting Diodes in Niche Lighting Applications (Technical
2017	Report) OSTI.GOV.) PCT Publication No. WO 86/05147 to Flaaten
2017	Condensed Transcript of Deposition of Jianzhong Jiao, Ph.D.
_010	taken on December 11, 2023
2019	Intentionally left blank.
2020	Intentionally left blank.
2021	Intentionally left blank.
2022	Intentionally left blank.
2023	Intentionally left blank.
2024	Intentionally left blank.
2025	Intentionally left blank.
2026	Intentionally left blank.
2027	Patent Owner Objection Response Letter - Service Copy
	Volkswagen Group of America, Inc. v. Yechezkal Evan Spero
	IPR2022-01586, June 27, 2023
2028	Patent Owner Objection Response Letter – Service Copy
	Volkswagen Group of America, Inc. v. Yechezkal Evan Spero
	IPR2022-01586, September 7, 2023

I. INTRODUCTION

Petitioner's motion incorrectly assumes that Patent Owner (PO) has waived the opportunity to challenge the POSA level and thus myopically focuses on whether Dr. Turk satisfies <u>their new</u>, <u>narrow interpretation</u> of the POSA level. Because PO timely challenged Petitioner's POSA interpretation in its Sur-Reply, when first presented with the issue, there is no waiver.

Notwithstanding PO's briefing on this point, Petitioner's motion ignores the seminal issue: whether optics and sensing/imaging experience are relevant to the POSA level for the '029 Patent. The salient facts and law demonstrate that under the Federal Circuit factors guiding determination of a POSA level, optics and sensing/imaging experience <u>are</u> relevant to the POSA level — indisputably qualifying Dr. Turk as both a POSA and an expert on all disputed issues. Indeed, Petitioner's own record testimony supports this conclusion. Relatedly, the need for specific industry experience regarding headlamp design, testing and regulation compliance is a red herring. By Petitioner's own admission, the '029 Patent claims are "directed to <u>adaptive</u> motor vehicle headlamps with LED light sources." (MTE, 4.) Dr. Jiao has explained that optics and sensors are important components of adaptive headlamps. (MTE, 4; Ex.1003, ¶52; Ex.2007, 126:9-12.)

Petitioner's motion to exclude ("MTE") relies on mischaracterized testimony and fundamental disagreements, as "evidence" of Dr Turk's lack of

1

knowledge on "common" terms. A closer look reveals a pattern of truncated record cites that when reviewed, establish Dr. Turk's care to proffer opinions based on context and avoid sweeping statements, in an industry where terms have multiple meanings. (Ex.2007, 103:7-16, 54:9-23.) By contrast, Petitioner and Dr. Jiao imbue their POSA with Dr Jiao's unsupported, generalized "POSA knowledge", which is often the linchpin of a new, contradictory argument. (Sur-Reply, 4-14.) The MTE is a thinly veiled attempt to bolster the unreasonable technical positions of its expert and cast aside competing opinions.

II. ARGUMENT

A. Exs.2001 and 2006: Dr. Turk Exceeds the Level of Skill Required for a POSA

1. Petitioner Proposed a Broad Skill Level

Petitioner proposed a POSA skill level that includes "a bachelor's degree (B.S.) in mechanical engineering, electrical engineering, optical engineering, applied physics, or an equivalent field, as well as at least 2 years of industry experience in the area of automotive lighting and lighting-control systems." (Pet., 10; Ex.1003, ¶41.) Further, "[t]he POSA may work as part of a team." (*Id.*) Petitioner also proposed a sliding scale between education and industry experience: "a higher level of education or skill might make up for less experience and vice versa." (*Id.*, ¶42.)

PO provided an alternate POSA skill level that included "two or more years of experience in the field of optical and imaging systems." (POPR, 8; Ex.2001, ¶¶28-30.) The Board did not adopt either party's proposed skill level. Instead, the Board invited PO to "explain the significance of the differing levels of ordinary skill proposed." (DI, 6.)

Since Petitioner's expert testified that the term "Automotive Lighting" is a broad term that includes optical and imaging systems, PO understood that its proposed POSA level was effectively incorporated within the broader POSA level suggested by Petitioner. Therefore, PO did not dispute Petitioner's proposed level of ordinary skill in its Response. (POR, 21.)

Per Dr. Jiao, his opinion on the level of a POSA is based on his teaching and industry experience. (Ex.1003, ¶43.) During his deposition, Dr. Jiao described teaching three "Automotive Lighting" classes for the Society of Automotive Engineering (SAE). (Ex.1004, 4; Ex.2007, 113:11-114:9.) Dr. Jiao teaches "optics principles" in his "Automotive Lighting" classes, including "imaging optics and non-imaging optics." (Ex.2007, 119:5-13, 119:22-120:5.) Dr. Jiao also explained that his "Automotive Lighting" Department at North American Lighting (NAL) included four groups of engineers, including an "optical design group" an "electronic technology group," and an "engineering analysis and testing group." (Ex.2007, 14:1-21, 16:1-13.) Based on Dr Jiao's testimony regarding the academic/industry inclusion of optics and imaging/sensing within "Automotive Lighting," PO noted the overlap in the POSA levels, but did not dispute Petitioner's POSA level in their Response. (Ex.2006, ¶¶48-49.)

It was not until Petitioner's Reply, which revealed a new interpretation of its proposed POSA skill level, one that requires specific industry experience, with a "vehicle headlamp company," "an LED (or any other light source) company," and design experience and awards/patents on a "vehicle forward lighting system." (MTE, 8.) Petitioner seems to fault Dr. Turk for not having the same exact CV as Dr. Jiao. There is no such requirement. As the '029 Patent involves multiple technical fields—namely optics, sensing/imaging, and the control of LED lighting, each field is relevant. To testify as an expert, under Fed. R. Evid. 702, a person must be "qualified in the pertinent art." Sundance, Inc. v. DeMonte Fabricating Ltd., 550 F.3d 1356, 1363-64 (Fed. Cir. 2008) (noting that under Fed. R. Evid. 702, the expert must possess sufficient "expertise to be of assistance" to the trier of fact). "[T]here is no requirement of perfect match between the expert's experience and the relevant field." See Consolidated Trial Practice Guide, November 2019 at 34 (citing SEB S.A. v. Montgomery Ward & Co., 594 F.3d 1360, 1373 (Fed. Cir. 2010)). Further, since LED headlamps were in their infancy in the early 2000s, there are very few experts that would have met Petitioners new POSA criteria.

2. As The POSA Dispute Was Timely Challenged, There Is No Waiver

Petitioner glosses over PO's dispute over the POSA level, as if the challenge was somehow waived at the POR stage. Petitioner's reliance on *Kyocera* is misplaced. *Kyocera Senco Indus. Tools Inc. v. Int'l Trade Comm'n*, 22 F.4th 1369, 1377 (Fed. Cir. 2022). In *Kyocera*, the Commission adopted Koki's POSA definition and Kyocera did not contest it. (*Id.*, 1376.) Here, the Board did not adopt Petitioner's definition, instead it invited PO to explain the differences. (DI, 6.) As explained above, when Petitioner first presented its new POSA interpretation, PO immediately challenged the interpretation, as "imbu[ing] the POSA with unsupported, hindsight-driven 'industry' knowledge." (Sur-Reply, 1.) Further, a "POSA standard factoring in optics/imaging-experience closely aligns with the purpose of the '029 Patent and the inventor's own experience." (Sur-Reply, 2.)

Petitioner first suggested its new narrow interpretation of the POSA level in its objection to Ex.2001 on June 8, 2023 (Paper 10), to which PO promptly responded on June 23, 2023 noting the lack of particularity of the objections, explaining the relevance and admissibility of the declaration, and reminding Petitioner of its sliding scale, that "a higher level of education or skill might make up for less experience and vice versa.' (Ex.1003, ¶42.)" (Ex.2027, 1; *see also* Ex.2028, 1.) "[B]ased on due-process and APA guarantees," when a petitioner raises new issues on Reply, a PO is entitled to "an opportunity to respond to those arguments." *Chamberlain Grp v. One World Techs.*, 944 F.3d 919, 924-925 (Fed. Cir. 2019) citing *In re NuVasive, Inc.*, 841 F.3d 966, 971 (Fed. Cir. 2016). Because PO's POSA arguments were responsive to new arguments made by Petitioner in their reply and consistent with the positions advanced in the preliminary response and objection responses (Exhibits 2027, 2028), PO did not waive its right to raise the issue during the trial proceedings.

3. Petitioner's Current Narrow Interpretation Does Not Consider Precedent Governing the POSA Determination

Petitioner's POSA interpretation and MTE fail to explain why their interpretation is correct, it just assumes that it governs. In *Daiichi*, the Federal Circuit listed a number of factors that may be considered in determining the POSA including: "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field." *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). The Federal Circuit also considers (7) the "patent's purpose" and (8) the "patent teachings as a whole" when determining the level of ordinary skill in the art. *Best Medical International, Inc. v. Elekta Inc.*,

46 F.4th 1346, 1354 (Fed. Cir. 2022), see also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co., 464 F.3d 1356, 1362–63 (Fed. Cir. 2006).

1. Petitioner did not consider the educational level of the inventor. Instead, they attempt to block such information by moving to exclude a hyperlink to the inventor's LinkedIn Profile, which shows that the inventor — a person that *per se* exceeds the innovative skill of the hypothetical POSA with "conventional wisdom"-- did not work for a vehicle headlamp company or design headlamps before July 2002 and therefore would not meet Petitioner's new POSA criteria. *Standard Oil Co. v. American Cyanamid Co,* 774 F.2d 448, 454 (Fed. Cir. 1985).

2-5. Petitioner did not consider the type of problems encountered in the art, prior art solutions to those problems; rapidity with which innovations are made; or sophistication of the technology. Rather, Petitioner's briefing glosses over the state of the art in the early 2000's. As LED headlamps were under development in the early 2000's, a myriad of complex, interrelated technical issues were being solved at the time. (POR, 39, 37-51, 67-70; Ex.2006, ¶[25-38.)

6. Petitioner did not consider the educational level of active workers in the field, and expressly ignores it when <u>his POSA</u> interprets a "beam" as a light source. Arguing post-institution that "a POSA would have understood" that a "microbeam" or "spotlight beam" includes a spatial light modulator (SLM), Dr. Jiao advances a position that, per his own admission, is inconsistent with how it is used in industry or academia. (Ex.2018, 24:12-14, 64:10-14.)

Dr. Jiao admitted that he did not use the term microbeam or spotlight beam to refer to a lighting system that includes light sources and spatial light modulators in industry or as a teacher for SAE. For example, in response to the question "in the automotive industry, do you use the term microbeam to refer to a system that includes light-emitting devices and spatial light modulators?" Dr. Jiao answered, "We use the word 'beam contributor." (*Id.*, 26:15-27:8; *see also* 64:15-65:11.) In response to the question, "[i]n your SAE classes, do you use the term 'microbeam' to refer to lighting systems?" Dr. Jiao answered "I don't recall using the word microbeams . . . I use terminologies of components, subsystems, and system." (*Id.*, 28:18-29:8.) Yet, in this proceeding, Dr. Jiao ignores the educational level of active workers in the field when he states that "a POSA would have understood" that a beam is an LED and SLM. (*See* Ex.1003, ¶75; Ex.1036, ¶¶119-120.)

7-8. Petitioner ignores the patent's "purpose" and patent teachings as a whole. The purpose of the '029 Patent is to use LED lighting for an adaptive headlamp to provide the "correct lighting solution" that "will radiate photons where needed, exactly in the correct amounts to accomplish the visual task application," "to not cause glare" in "real-time." (Sur-Reply, 2; Ex.1001, 4:64-5:11, 11:5-13.)

Petitioner's analysis dismisses the relevance of optics and sensing for the

POSA level, yet Dr. Jiao explains their importance to the claimed "<u>adaptive</u> motor vehicle headlamps." (MTE, 4.) Dr. Jiao has explained that optics and sensors are important components of adaptive headlamps: "By 2000, adaptive headlamp systems with multiple directional light beams were developed with various means of <u>sensors</u> to detect surroundings while driving and resulted in glare reduction for oncoming and preceding vehicle drivers." (Ex.1003, ¶52.) "When adaptive features needed, you can change a portion of the <u>optics</u> to make a portion of the light left/right, or up and down." (Ex.2007, 126:9-12.) Thus, it is undisputed, that the patented subject matter uses <u>sensor/imaging inputs</u> to determine how to <u>adapt</u> illumination, e.g., using **optics**, to illuminate a curve. (*Id*.)

4. Dr. Turk Is Qualified in the Pertinent Art of Automotive Lighting and Lighting-Control Systems

Dr. Turk has significant automotive lighting and lighting-control systems experience, including experience with optics, imaging systems, sensors and lighting controls—which govern how to **adapt** the headlight illumination.

Dr. Turk has "worked and studied in the field of computer vision since 1984, as well as related areas of image processing, pattern recognition, machine learning, and human-computer interaction." (Ex.2001, \P 6.) The "field of computer vision is concerned with determining how computers can extract, analyze and understand information from images and video." (*Id.*) Computer vision has further "been applied to a wide variety of applications including automotive lighting and controls such as those used in automotive adaptive forward lighting systems." (*Id.*, \P 8.)

Dr. Turk's industry experience includes working for Martin Marietta Denver Aerospace from 1984 to 1987, where he worked primarily on computer vision for autonomous vehicle navigation as part of the Defense Advanced Research Projects Agency's Autonomous Land Vehicle program and subsequent advances in selfdriving automobiles. (Ex.2001, ¶10; Ex.2002, 3-4.) Dr. Turk explained during his deposition that this work involved "computer vision work" and "various aspects of sensing and imaging," including vehicle lighting and lighting control systems. (Ex.1037, 21:10-12, 53:9-12.) As Dr. Turk confirmed in deposition: vehicle forward "illumination was an important part" of determining how the autonomous vehicle would drive at dusk and at night. (*Id.*, 54:7-8.)

Dr. Turk has taught technical courses at the University of California, Santa Barbara (UCSB) since 2000 "related to lighting, including automotive lighting, and lighting-control systems regarding computer vision" (Ex.2006, ¶13; Ex.2001, ¶11; Ex.2002, 2-3.) The above "courses covered the fundamentals of light and optics, camera sensors, imaging geometry, infrared imaging, optical filtering, image processing, 3D imaging, scene understanding, and structured lighting." (Ex.2006, ¶13.)

As Co-founder of the Four Eyes Lab at USCB in 2003, he worked on and

supervised many research projects "including (1) visual recognition of automobiles and (2) multi-flash imaging, which used multiple image sources and special optics to infer 3D scene structure from images." (*Id.*, ¶13.)

Dr. Turk has "published research on lighting and optics, including research focused on automobile-related imaging, including: "Car-Rec: A real-time car recognition system," IEEE Workshop on Applications of Computer Vision (WACV 2011), January 2011; "VITS - a vision system for autonomous land vehicle navigation," IEEE Trans. on Pattern Analysis and Machine Intelligence, Vol. 10, No. 3, pp. 342-361, May, 1988; "Video road-following for the Autonomous Land Vehicle," Proc. IEEE International Conference on Robotics and Automation, Raleigh, N. C., April, 1987; "Color road segmentation and video obstacle detection," Advances in Intelligent Robotic Systems: Mobile Robots, SPIE, Cambridge, MA, 1986." (Ex.2006, ¶19.)

Even if the Automotive Lighting term was interpreted narrowly to minimize Dr. Turk's extensive industry experience, then Dr. Turk's extensive education would fit the skill level under Petitioner's sliding scale, i.e., "a higher level of education or skill might make up for less experience and vice versa." (Ex.1003, ¶42.) For example, Dr. Turk received his PhD from the Massachusetts Institute of Technology (MIT) in 1991. (Ex.2001, ¶7; Ex.2006, ¶9; Ex.2002, 4.) His doctoral work was in the area of computer vision. (*Id.*) He received a Master of Science

degree in Electrical and Computer Engineering from Carnegie Mellon University in 1984, and a Bachelor of Science degree in Electrical Engineering from Virginia Tech (VPI&SU) in Blacksburg, Virginia in 1982, where his senior honors thesis was on image processing. (*Id.*)

Dr. Turk opines on, *inter alia*, the State of the Art as of 2002 and adaptive headlamp systems including sensors, imaging systems, and optics, i.e., the technology described in the '029 Patent: "multi-LED headlight systems that provide predictive curve illumination with the receipt of map data indicating a road curvature upcoming along a road on which the motor vehicle is traveling." (Ex.2006, ¶[25-38, 39-43.) Dr. Turk's opinions directly correlate with his expertise.

5. Petitioner Attempts to Distract from its Unreasonable Technical Positions by Challenging Dr. Turk's Experience

Petitioner/Dr. Jiao's efforts to belittle Dr. Turk's understanding of lighting/optics terminology reveals an ongoing effort to invent an argument from whole cloth. In its Reply, Petitioner imbues their new POSA with unsupported, hindsight-driven "industry" knowledge that contradicts their prior assertions.

Petitioner challenges Dr. Turk's contribution to the "illumination portion" of the Martin Marietta project. (MTE, 6-7.) However, adaptive automotive lighting, such as that claimed in the '029 Patent is more sophisticated than just illumination, it includes sensors and vision technology to control the lighting. (Ex.1001, 14:59-66.) The '029 Patent uses LED lighting "to effect the provision of lighting that is in concert with the actual illumination needs at a given time . . . a camera serves as a sensor," and the device uses "computer vision technology to recognize ... [the] surroundings ... [to] provide the lighting requirements needed.[]" (*Id.*)

To support their unfounded attack that Dr. Turk lacks knowledge of "common" terms, Petitioner's MTE is replete with selective excerpts that blatantly mischaracterize Turk's testimony. When faced with sweeping questions devoid of context, e.g., regarding intensity, Dr. Turk would provide appropriate context ("[intensity and brightness] can have different implications at times")—yet, the MTE conveniently truncates his testimony. (See MTE, 8-11.) For example, when referencing Dr. Turk's description of Beam (Ex.1005), Petitioner asked "What does 'maximum intensity' mean in the context of automotive lighting?" (Ex.1037, 103:7-14.) To provide context, Dr. Turk returned the discussion to the Beam reference, stating "In general, I don't know. In this context [i.e., in Beam], I think it means you can't make it any brighter, any higher in terms of intensity." (Id., 103:17-20.) Petitioner also selectively edits Dr. Turk's testimony to omit his answer to their questions, e.g., in response to the question "what did you specifically work on with regards to the illumination" portion of the Martin Marietta Project, Petitioner quotes his introduction "It was a long time ago and I

don't remember too much detail about it," (MTE, 7) but omits his answer, i.e., "but certainly an important question was how much and what kind of illumination was necessary to be able to do what we needed to do. . . . We needed to **sense** and understand the world around the vehicle so that it would know where to drive, among other things." (Ex.1037, 54:9-23.)

Petitioner argues that Dr. Turk "initially and incorrectly opined that the intensity of light was measured in perceived brightness, 'a human judgment'" and "does not understand" that intensity "is not synonymous with 'brightness."" (MTE, 9; Reply 4.) However, Dr. Jiao used the terms "intensity" and "brightness" interchangeably in his deposition when describing pulse width modulation "when you turn the LED on and off fast enough, optically, including human eyes, you cannot detect it . . . You can vary the <u>perceived brightness or intensity</u>." (Ex.2007, 89:2-9.) In sum, Petitioner's POSA assertions raise numerous red flags.

Regarding Exhibits 2001 and 2006, the opinions provided in Dr. Turk's Declarations were based upon: (1) his qualifications and professional experience and (2) the documents Dr. Turk cited and considered. (Ex.2001, ¶¶4-19, Ex.2002; Ex.2006, ¶¶6-21.) Dr. Turk is a testifying expert pursuant to FRE 703 and he may therefore express opinions based on facts or data he has been made aware of or personally observed. Dr. Turk's Declarations are relevant under FRE 401 and 402 because they identify and explain technical issues that Dr. Jiao failed to explain

and therefore have a tendency to make a fact more or less probable than it would be without the evidence; and the fact is of consequence in determining the action, and its admission is not otherwise prohibited. (*See* Ex.2027, 1; Ex.2028, 1.)

B. Hyperlink to Inventor's LinkedIn Profile

Petitioner argues that the hyperlink to the inventor's profile in PO's Surreply is inadmissible under 37 C.F.R. § 42.23(b)¹. In response to Petitioner's new POSA argument in its Reply, PO included a hyperlink to the inventor's LinkedIn Profile to illustrate that since Spero did not have experience working for a vehicle headlamp company prior to July 2002, the inventor himself would not meet Petitioner's new POSA criteria. (Sur-Reply, 2.) Since PO's argument was responding to Petitioner's new argument, it satisfies 37 C.F.R. § 42.23(b).

Respectfully submitted,

Dated: February 7, 2024

/ Andrew B. Turner /

Andrew B. Turner (Reg. No. 63,121) Sangeeta G. Shah (Reg. No. 38,614) David S. Bir (Reg. No. 38,383)

¹ Petitioner did not object to this hyperlink under the FRE, but should it raise new hearsay or authentication issues PO will seek leave to submit a declaration from Mr. Spero.

Case No.: IPR2022-01586 Patent No.: 11,208,029

Brooks Kushman P.C.

150 W. Second St., Suite 400N Royal Oak, MI 48067-3846 (248) 358-4400

Attorneys for Yechezkal Evan Spero

Certificate of Service Pursuant to 37 C.F.R. § 42.6(e)

The undersigned hereby certifies that on February 7, 2024, a complete and entire copy of **Patent Owner's Opposition to Motion to Exclude**, was served via electronic mail by serving the correspondence email addresses of the following lead and back-up counsel as shown below:

Michael D. Specht (Reg. No. 54,463)	Jason A. Fitzsimmons (Reg. No. 65,367)
Sterne, Kessler, Goldstein & Fox	Daniel E. Yonan (Reg. No. 53,812)
P.L.L.C.	Ian Soule (Reg. No. 74,290)
1101 K Street, N.W., 10 th Floor	Sterne, Kessler, Goldstein & Fox
Washington D.C., 20005	P.L.L.C.
Telephone: (202) 371-2600	1101 K Street, N.W., 10 th Floor
Facsimile: (202) 371-2540	Washington D.C., 20005
mspecht-PTAB@sternekessler.com	Telephone: (202) 371-2600
	Facsimile: (202) 371-2540
	jfitzsimmons-PTAB@sternekessler.com;
	dyonan-PTAB@sternekessler.com;
	isoule-PTAB@sternekessler.com;
	PTAB@sternekessler.com
	Edgar H. Haug (Reg. No. 29,309)
	Robert E. Colletti (Reg. No. 76,417)
	Haug Partners LLP
	745 Fifth Avenue
	New York, NY 10151
	Telephone: (212) 588-0800
	Facsimile: (212) 588-0500
	ehaug@haugpartners.com;
	rcolletti@haugpartners.com;
	PTAB-Porsche@haugpartners.com

Respectfully submitted,

/ Andrew B. Turner /

Andrew B. Turner (Reg. No. 63,121) Sangeeta G. Shah (Reg. No. 38,614) David S. Bir (Reg. No. 38,383) Case No.: IPR2022-01586 Patent No.: 11,208,029

Brooks Kushman P.C.

150 W. Second St., Suite 400N Royal Oak, MI 48067-3846 (248) 358-4400

Attorneys for Yechezkal Evan Spero

Certificate of Compliance Pursuant to 37 C.F.R. § 42.24

This paper complies with the type-volume limitation of 37 C.F.R. § 42.24. The paper contains 15 pages, excluding the parts of the paper exempted by §42.24(a).

This paper also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(ii) and the type style requirements of § 42.6(a)(iii)&(iv).

Respectfully submitted,

Dated: February 7, 2024

/ Andrew B. Turner /

Andrew B. Turner (Reg. No. 63,121) Sangeeta G. Shah (Reg. No. 38,614) David S. Bir (Reg. No. 38,383)

Brooks Kushman P.C. 150 W. Second St., Suite 400N Royal Oak, MI 48067-3846 (248) 358-4400

Attorneys for Yechezkal Evan Spero