

IPR2024-01130

Petitioner's Response to Motion to Exclude

Patent No. 7,168,842

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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**BOE Technology Group Co., Ltd.**

Petitioner

v.

**Optronic Sciences LLC**

Patent Owner

Inter Partes Review No.: IPR2024-01130

**PETITIONER'S RESPONSE TO PATENT OWNER'S MOTION TO  
EXCLUDE EXPERT DECLARATIONS EX 1002 AND EX 1031**

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## INDEX OF EXHIBITS

| Exhibit No. | Description                                                                                                                   |
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| 1001        | U.S. Pat. No. 7,168,842 (“ <b>the 842 Patent</b> ”)                                                                           |
| 1002        | Declaration of Dr. R. Jacob Baker                                                                                             |
| 1003        | File History of 7,168,842 (11/00,372)                                                                                         |
| 1004        | JP 2004-279262 (“ <b>Kurokawa</b> ”)                                                                                          |
| 1005        | U.S. 7,218,041 (“ <b>Isoda</b> ”)                                                                                             |
| 1006        | U.S. 2002/0047978 (“ <b>Fukuta</b> ”)                                                                                         |
| 1007        | U.S. 2002/0140880 (“ <b>Weindorf</b> ”)                                                                                       |
| 1008        | U.S. Pat. No. 6,927,424 (“ <b>Uekusa</b> ”)                                                                                   |
| 1009        | U.S. 2002/0030445 (“ <b>Fukasawa</b> ”)                                                                                       |
| 1010        | JP 2002-164583 (Machine Translated via Google Translate and Espacenet)                                                        |
| 1011        | U.S. 2004/0061440 (“ <b>Imai</b> ”)                                                                                           |
| 1012        | U.S. 2004/0130884 (“ <b>Yoo</b> ”)                                                                                            |
| 1013        | JP 2004-193002 (“ <b>Sakai</b> ”) (Machine Translated via Google Translate)                                                   |
| 1014        | U.S. 2004/0262053 (“ <b>Ludewig</b> ”)                                                                                        |
| 1015        | U.S. 2004/0169451 (“ <b>Oishi</b> ”)                                                                                          |
| 1016        | KR 2004/0057269 (Machine Translated via Google Translate)                                                                     |
| 1017        | EP 1467414 (“ <b>Ge</b> ”)                                                                                                    |
| 1018        | U.S. 2001/0024250 (“ <b>Fujishiro</b> ”)                                                                                      |
| 1019        | JP 2001-160312 (“ <b>Takuo</b> ”) (Machine Translated via Google Translate)                                                   |
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| 1024        | July 17, 2025, Deposition Transcript of Dr. Eric Bretschneider, IPR2024-01130                                                 |
| 1025        | Dr. R. Jacob Baker Matter List                                                                                                |
| 1026        | July 23, 2025, Markman Hearing Transcript, <i>Optronic Sciences LLC v. BOE Technology Group Co., Ltd.</i> , 2:23-cv-00549     |
| 1027        | July 23, 2025, Preliminary Claim Construction, <i>Optronic Sciences LLC v. BOE Technology Group Co., Ltd.</i> , 2:23-cv-00549 |
| 1028        | April 22, 2025, Exhibit A, Joint Claim Construction and Prehearing Statement                                                  |

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| Exhibit No. | Description                                                                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1029        | June 3, 2025, Optronic Science's Opening Claim Construction Brief                                                                                                                    |
| 1030        | April 22, 2025, Joint Claim Construction and Prehearing Statement                                                                                                                    |
| 1031        | Reply Declaration of Dr. R. Jacob Baker                                                                                                                                              |
| 1032        | Excerpt of Expert Report of Adam Fontecchio, Ph.D. Regarding Infringement, <i>Optronic Sciences LLC v. BOE Technology Group Co., Ltd.</i> , 2:23-cv-00549                            |
| 1033        | Excerpt of Expert Report of Eric Bretschneider Ph.D. Regarding Validity of U.S. Patent No. 7,168,842, <i>Optronic Sciences LLC v. BOE Technology Group Co., Ltd.</i> , 2:23-cv-00549 |

## **I. INTRODUCTION**

The Board should deny Patent Owner's (PO's) motion to exclude the declarations of Dr. R. Jacob Baker (Ex. 1002 & Ex. 1031) because it is premised on PO's incorrect definition of a POSITA and because Dr. Baker meets even that incorrect definition. PO and its litigation expert offer a different definition of a POSITA that is (correctly) not limited to LEDs or semiconductor manufacturing, not limited to thermal management, and allows additional education to substitute for work experience. There is no dispute that Dr. Baker satisfies PO's definition of a POSITA in the related litigation and, as a result, PO has not moved to exclude Dr. Baker's testimony in the litigation. It is improper, and not credible, for PO to take inconsistent positions in this IPR regarding the definition of a POSITA and the admissibility of Dr. Baker's testimony.

## **II. PO'S MOTION SHOULD BE DENIED**

### **A. PO's Motion should be Denied Because of PO's Materially Inconsistent Definitions of a POSITA**

PO's motion should be denied because PO has taken materially inconsistent positions on the definition of a POSITA in this IPR and the related litigation. These material inconsistencies go directly to the credibility of PO and its IPR expert, Dr. Bretschneider, and militate in favor of denying all of PO's arguments in this IPR that relate to PO's definition of a POSITA, including the instant motion. *Xilinx Inc.*

*v. Analog Devices, Inc.*, IPR2020-01564, Paper 34 at 13-14 (Mar. 11, 2022)

(holding an inconsistent position taken by a party in infringement contentions in a related litigation justified giving no weight to the IPR experts' testimony on an issue).

PO offers three different and materially inconsistent definitions of a POSITA, as shown below.

IPR POSITA 1: "at least a Bachelor's degree in a field of engineering or physics and at least one year of practical experience in design of LED packages and one year of practical experience in design of thermal management systems for LEDs. Additional graduate education provided it included relevant semiconductor manufacturing or flat panel display technology could reduce but not eliminate the time requirement for professional experience."

Ex. 2020 (Bretschneider IPR Decl.), ¶ 86 (emphasis added)

Litigation POSITA 2: "at least a Bachelor's degree in a field of engineering or physics and at least one year of practical experience in design of LED packages and one year of practical experience in design of LEDs. Additional graduate education provided it included relevant semiconductor manufacturing or flat panel display technology could reduce but not eliminate the time requirement for professional experience."

Ex. 1033 (Bretschneider Litigation Report), ¶ 83 (emphasis added)

Litigation POSITA 3: "at least a Bachelors' degree in a field of engineering and at least two years of professional experience related to the design and manufacture of LCD panels and/or displays. Additional graduate education could reduce or eliminate the time requirement for professional experience."

Ex. 1032 (Fontecchio Litigation Report), ¶ 22 (emphasis added)

Dr. Bretschneider's definitions are materially inconsistent because only the first requires "thermal management systems for LEDs," a qualification on which PO relies heavily in its motion. PO attempts to reconcile that inconsistency by the fact that claims 6 and 9 (which require heat dissipating means) are not asserted in the district court litigation. Paper 36 at 2. But PO does not explain how a patent can have two different definitions of a POSITA based on the asserted claims. And if PO is having its experts tailor their definitions of a POSITA to only the limitations in the asserted claims, Dr. Bretschneider's definitions should be rejected because they include "design of LED packages" and experience in "semiconductor manufacturing" when neither is required by any claim. The design of LEDs and semiconductor manufacturing are not claimed or even discussed in the '842 patent. The design of LEDs and semiconductor manufacturing relate to entirely different fields like semiconductor layer deposition and patterning techniques, the doping of the light emitting layer of the LED, etc. EX1031, ¶¶ 23-24; Paper 30 at 6-7. Dr. Bretschneider's definition simply deletes one inappropriately narrow requirement (thermal management systems for LEDs) but leaves others (design of LED and semiconductor manufacturing). None of those fields are required to understand or practice the disclosures in the '842 patent.

While that difference between Dr. Bretschneider's definitions is material, the differences between his definitions and Dr. Fontecchio's definition are massive and destroy any semblance of credibility PO may have had on this issue.

First, Dr. Fontecchio correctly omits any requirement for experience with "LEDs," "LED packages," and "semiconductor manufacturing" from his definition of a POSITA. Instead, Dr. Fontecchio broadly includes "design and manufacture of LCD panels and/or displays." PO, recognizing this material inconsistency, unilaterally<sup>1</sup> submits deposition testimony of Dr. Fontecchio that answered a question about whether he personally had experience with "LED packages" with an evasive answer about "packages." Paper 36 at 3. Whether Dr. Fontecchio personally has any experience with "packages" or "LED packages" is irrelevant—Dr. Fontecchio correctly does not require any such experience in his definition of a POSITA. PO does not even attempt to reconcile the absence of "semiconductor manufacturing" in Dr. Fontecchio's definition of a POSITA, nor can it be reconciled. It is undisputed that Dr. Baker qualifies under Dr. Fontecchio's definition. PO's motion to exclude, as well as all of PO's arguments in this IPR

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<sup>1</sup> PO's submission of supplemental information without requesting and obtaining leave is improper and is another reason the Board should deny PO's motion.

related to the definition of a POSITA, must be rejected under PO's and Dr.

Fontecchio's definition of a POSITA in the litigation.

Second, Dr. Fontecchio (correctly) omits any reference to "thermal management systems" experience from his definition of a POSITA, a qualification on which PO's motion to exclude heavily relies.

Third, Dr. Fontecchio (correctly) agrees with Dr. Baker that additional graduate education could "reduce or eliminate the professional experience requirement." It is undisputed that Dr. Baker has a Ph.D. in Electrical Engineering and has been a professor in Electrical Engineering for over 20 years, and has advised more than 100 graduate students, which would unquestionably satisfy the additional educational experience under Dr. Fontecchio's definition. EX1002, ¶¶ 7, 14; EX1031, ¶¶ 38. PO never explains in this IPR (much less in its motion to exclude) why additional educational experience could not eliminate the need for professional experience as inconsistently argued by Dr. Bretschneider.

Notably, Dr. Fontecchio's POSITA definition allows for much broader array of relevant experience related to the design and manufacture of LCD panels and/or displays. Even if "and/or" is read narrowly to be limited to LCD displays, the design and manufacture of LCD panels/displays encompasses many related technologies such as the design of the polarizer, color filter, thin-film-transistor

array, and liquid crystals in addition to backlights. Dr. Baker's definition focuses on electronic and optoelectronic system design, which also includes many related technologies, including backlight design, LED package design, and thermal management considerations. These definitions are consistent with each other in this way, while Dr. Bretschneider's IPR definition is manifestly too narrow.

PO does not dispute that Dr. Baker satisfies PO's and Dr. Fonteccio's definition of a POSITA in the litigation and has not moved to exclude Dr. Baker's testimony from the litigation in connection with either Dr. Baker's claim construction declaration related to overlapping claims of the '842 patent or his expert reports. Paper 30, at 3; EX1031 ¶ 9; EX1029 at 8-9. It is improper and inconsistent for PO to contradict those positions from the related litigation in this IPR, and the Board should disregard PO's definition of a POSITA in this IPR on this basis alone. *Xilinx Inc. v. Analog Devices, Inc.*, IPR2020-01564, Paper 34 at 13-14 (Mar. 11, 2022).

**B. PO's Motion Should be Denied Because PO's Definition of a POSITA in this IPR is Incorrect**

Even if the Board were to ignore PO's contradictory definitions of a POSITA in the related litigation, the Board should still reject PO's definition of a POSITA on which its motion to exclude relies. See Paper 30 at 1-8; EX1031, ¶¶ 3-4, 9-40.

The '842 patent (and Challenged Claims 5-7) relates to the use and arrangement of well known components to create a backlight package. PO agrees that patent is related to the *packaging* of light-emitting *device* backlight. Paper 36 at 6. The "light emitting device," "circuit board," and "heat dissipating means" are described essentially as functional black-boxes and a POSITA is just using and assembling them in a new manner. Paper 30 at 1-4, 6; EX1031 ¶¶ 13-15, 23-25. Other than a stray reference to "diode" in the title, there is no disclosure or claim limitation related to LEDs. Paper 30 at 3. The "light emitting device" described and claimed is a functional black box. EX1031 ¶ 20. Requiring specific design of the LED package rather than the backlight package and electronic system design more generally impermissibly narrows the background required for a POSITA as LED packages are generic components that could easily be used in a backlight package. Ex. 1031 ¶¶ 15-18, 21, As described more fully in Petitioner's Reply, Dr. Baker explains that broad experience focused on electronic and optoelectronic system design would be necessary in order to achieve the claimed purpose of the '842 patent, which is to minimize the light emitting device backlight package size for a variety of end uses for the eventual display, this requires a broader understanding than just "LED packages" and "thermal management of LEDs." Ex. 1031 ¶¶ 17, 19, 9-40.

Similarly, the '842 patent is not about the design of heat dissipating means or how to achieve optimal heat dissipation. Paper 30 at 3-8. The '842 does not claim or even discuss the design of the heat dissipating means component, the thermal adhesive that might be used to join it to the other components, or any parameters associated with its functionality. Paper 30 at 3-8; EX1031 ¶ 18, 38. In fact, the '842 patent teaches using a less efficient heat dissipating design in its sole disclosed embodiment in favor of saving space. Paper 30 at 5; EX1031 ¶¶ 19, 69-70. Even Dr. Bretschneider agrees that “if you say maximize heat dissipation, you will probably end up with a different configuration and one that would not minimize space... the '842 patent is trying to create a compact package, they're trying to minimize the space required, which normally goes contrary to maximizing heat dissipation.” EX1024, 113:08-114:10; EX1031 ¶ 19. In the '842 patent, the only “heat dissipating means” discussed are heat dissipating plates, which “conduct, or dissipate, heat produced by electronic components disposed on the PCB 45.” EX1001, 3:25-31; EX1031, ¶ 18. More specific thermal management is not discussed or required for a POSITA to understand or practice the claims of the '842 patent. Paper 30 at 3-8; EX1031, ¶ 20. The '842 patent is written for the perspective of a POSITA that would be using and assembling those components into a backlight package—not designing them.

PO's definition of a POSITA should further be rejected because Dr.

Bretschneider incorrectly applies the five factors for determining the appropriate level of skill in the art, as explained in Petitioner's Reply. *See* Paper 30, at 1-8; EX1031, ¶¶ 9-25.

**C. PO's Motion Should be Denied Because Dr. Baker Meets PO's Flawed Definition of a POSITA in this IPR**

While Dr. Baker undisputedly meets PO's definition of a POSITA in the related litigation, Dr. Baker also meets PO's incorrect definition of a POSITA in the IPR. He has been qualified, opined, and been deposed in many legal proceedings regarding the use of packaged LEDs, systems designed using packaged LEDs, and thermal management systems for LEDs/electrical systems (including for the attorney's representing PO in proceedings related to LED packages). Paper 30 at 8; EX1031 ¶¶ 26-35. Further, he has thermal management experience and light emitting device backlight packages. Paper 30 at 8; EX1031 ¶¶ 26-38.

Dr. Baker painstakingly outlined his substantial design experience related to thermal management for systems using LEDs. Specifically, Dr. Baker designed systems using packaged light-emitting diodes and other optoelectronic systems that used LED packages. Paper 30 at 8; EX1031, ¶ 26. In relevant experience in designing systems where he used packaged LEDs as a light source. Paper 30 at 8;

EX1031 ¶¶ 26, 38. For the higher powered optical light sources, heat sinking, especially with the simple drivers he designed, was required. Paper 30 at 8; EX1031, ¶¶ 26, 38. This is in addition to Dr. Baker's general experience with high level electronic and optoelectronic system design which requires understanding of heat transfer for the systems to work optimally and reliably. Paper 30 at 8; EX1031, ¶¶ 16, 24-26, 38.

PO's criticisms of Dr. Baker's experience related to thermal management fall flat. Paper 36 at 4-5. First PO states that Dr. Baker lacks familiarity with heat transfer. *Id.* Convective heat transfer, Fourier's law on thermal conductivity, and heat sink design are irrelevant to the question of Dr. Baker's thermal management experience. The '842 patent is not directed to heat sink design or a test on types of heat transfer and thermal conductivity. Paper 30 at 3-4, 6-8; EX1031, ¶¶ 12, 15, 24, 38. Second, PO notes that Dr. Baker did not remember whether he designed thermal management systems for an LED system. Paper 36 at 5. He does have relevant experience, and as described above, that is outlined in his reply declaration. PO's failure to depose Dr. Baker about his declaration where he outlines this experience does not change the fact that he has relevant experience.

Dr. Baker has relevant experience related to package design and backlight design beyond his expert experience. Dr. Baker clarified that his experience at

Cirque is directly related to backlight design and packaging as he used LED packages in a backlight package for an LCD display. And he worked on backlight display packages that included LED packages and contended with design constraints involving those LED packages. Paper 30 at 8; EX1031, ¶ 38. PO admits that the '842 patent is directed to "a light-emitting device backlight package." Paper 36 at 6. Dr. Baker's experience at Cirque is directly related to backlight light emitting device backlight package design. PO's attempts to improperly narrow the relevant art to a light emitting diode package should be rejected rather than the light emitting device backlight package as a whole.

### **III. CONCLUSION**

For the foregoing reasons, the Board should adopt Dr. Baker's consistent (and proper) POSITA definition reject PO's motion to exclude the declarations of Dr. R. Jacob Baker at Ex. 1002 & Ex. 1031. In the alternative, if the Board finds PO's definition of a POSITA to be proper, Dr. Baker qualifies as a POSITA and should not have his declarations excluded.

**CERTIFICATE OF PAGE COUNT**

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner hereby certifies that there are under 15 pages in this response to motion. Pursuant to 37 C.F.R. § 42.24, this page count is in compliance with the page limit set forth in 37 C.F.R. § 42.24(b)(3) excluding the portions exempted under 37 C.F.R. § 42.24(a)(1).

Date: October 15, 2025

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**CERTIFICATE OF SERVICE**

The undersigned certifies that on October 15, 2025, a true and correct copy of the forgoing document was served by emailing a copy of same (by agreement) to the following attorneys for the Patent Owner:

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