

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOE Technology Group Co., LTD.
Petitioner

v.

Optronic Sciences LLC
Patent Owner

Inter Partes Review No.: IPR2024-01131

U.S. Patent No. 7,226,801

**PETITIONER'S REPLY TO PATENT OWNER'S
PRELIMINARY RESPONSE**

INDEX OF EXHIBITS

Exhibit No.	Description
1001	U.S. Pat. No. 7,226,801 (“the 801 Patent”)
1002	File History of 7,226,801
1003	Declaration of Dr. Dean Neikirk
1004	Curriculum Vitae of Dr. Dean Neikirk
1005	U.S. Patent No. 7,538,488 (“Kwak”)
1006	Chinese Patent Publication CN 1538212A (“Zhang”)
1007	U.S. Patent No. 6,406,636 (“Vaganov”)
1008	U.S. Patent Publication 2003/0076452 (“Kim”)
1009	U.S. Patent No. 7,446,336 (“Yamazaki”)
1010	U.S. Patent Publication 2003/0209726 (“Shigeno”)
1011	U.S. Patent No. 7,786,496 (“Yamazaki 496”)
1012	U.S. Patent No. 6,147,722 (“Shimada 722”)
1013	U.S. Patent No. 5,907,376 (“Shimada 376”)
1014	U.S. Patent No. 6,734,935 (“Kim 935”)
1015	U.S. Patent No. 7,538,039 (“Sasagawa”)
1016	U.S. Patent No. 6,011,608 (“Tanaka”)
1017	U.S. Patent No. 7,342,619 (“Arakawa”)
1018	U.S. Patent No. 8,076,782 (“Asai”)
1019	U.S. Patent No. 7,696,100 (“Maekawa”)
1020	U.S. Patent No. 7,586,121
1021	PO’s Infringement Contentions for U.S. Pat. No. 7,586,121
1022	Docket Navigator Report

Petitioner files this Reply pursuant to the Board's Dec. 9, 2024 email.

Predetermined Material Layer – Patent Owner (“PO”) attempts to distinguish the prior art by asserting that “a predetermined material layer” must be *a single layer*. See POPR, 22 (“single layer”), 23, 25-26 (“single layer”). PO does not dispute that the alleged material layer is determined prior to forming the organic layer. Pet., [9b-c]. PO’s “single-layer” interpretation should be rejected as inconsistent with the claims, specification, and ordinary meaning. The independent “comprising” claims do not limit the layer to a single layer/material and the dependent claims recite the layer “comprises” a passivation layer or a metal electrode layer. EX1001, cls. 1, 4, 5. Restricting the layer to a single layer/material would contradict those open-ended claims. It would also contradict the specification, which describes that a predetermined material layer can comprise a combination of multiple layers/materials. EX1001, 2:46-55 (“can comprise silicon oxynitride, silicon oxide, organic dielectric layer or a combination thereof ... may further comprise Mo, Ti, Al, Ta, metal oxide, metal nitride, or a combination thereof, serving as a metal electrode layer.”). Thus, the predetermined material layer may comprise a combination of passivation materials/layers and may further comprise (i.e., additionally comprise) a combination of metal materials/layers. These materials are formed at different times and for different purposes, but are still a “predetermined layer” because they are formed before the organic layer.

PO's reliance on the figures is misplaced as they merely disclose an embodiment with a single silicon nitride layer. *See* EX1002, 2:27-3:14, Figs. 1C ("silicon nitride layer 142"), 2A-2C ("silicon nitride layer 242"). PO's interpretation of the ordinary meaning of "layer" here contradicts its interpretation in the litigation. PO asserts a patent in the same field which claims "a first dielectric layer" (claim 1) that comprises multiple layers/materials (claims 3 and 6). EX1020, cls. 1, 3, 6. PO asserts that layer is satisfied by multiple layers/materials. EX1021, 10 (asserting "second dielectric layer" in claim 1 corresponds to multiple layers/materials), 18-19 (for claim 3 asserting that layer is two materials/layers separated by a third layer), 23 (for claim 6 asserting that layer is two widely separate materials/layers).

Forming/Formed On – The Board should reject PO's interpretation of "forming/formed on" that requires *directly* formed on "without intervening layers." POPR, 6; *see also id.*, 7-11, 19-26. The ordinary meaning of this term encompasses indirectly formed on. *See AFG Indus., Inc. v. Cardinal IG Co.*, 239 F.3d 1239, 1251 (Fed. Cir. 2001) ("the claim does not state that each layer is 'formed directly on' the preceding layer"). *AFG* was a closer call because "composed of" required "composed essentially of," such that the Court had to determine whether intervening layers would "materially affect" the claimed invention. *Id.*, at 1244-47. Here, the claims are "comprising" claims that do not require that analysis. Another patent asserted by PO in the litigation reinforces this ordinary meaning by claiming

“formed on” and “directly formed on” in the same claim. *Id.*; *Cf.* EX1020, claim 1 (claiming “formed on the substrate” at 8:41 and “directly formed on the gate oxide layer” at 8:47). Finally, PO’s interpretation excludes embodiments of the ’801 patent where at least one layer of a multi-layered predetermined material layer does not directly contact the substrate or organic layer.

Fintiv Factors - Factor 1 is neutral because the Board should not speculate on how the Court will rule on any motion to stay filed post-institution. Pet., 85.

Factor 2 weighs in favor of institution. Trial will occur sometime after jury selection on January 5, 2026. EX2001, 1. Trial occur well after that date, since ten patent cases are set to begin that day. EX1022, 1-2. This IPR may complete (Final Written Decision by Feb. 15, 2026) before any jury trial occurs, favoring institution. *See* Paper 9 at 33-34, IPR2024-00613 (favors institution).

Factor 3 weighs heavily in favor of institution because the deadline for institution (Feb. 17, 2025) is at least 3 weeks before the first step of claim construction in the litigation (identification of terms, March 11, 2025). EX2001, 5.

Factor 4 weighs heavily in favor of institution. This IPR challenges claims 1-6 and 8-14 while the litigation will only address claims 9 and 10. EX2002.

Factor 5 remains slightly in favor of institution, as previously noted. Pet., 86.

Factor 6 weighs heavily in favor of institution. The Petition sets forth a compelling case and PO’s arguments are based on incorrect claim interpretations.

December 12, 2024

Respectfully submitted,

/s/ Brian Erickson

Brian Erickson

Reg. No. 48,895

DLA Piper LLP (US)

303 Colorado Street, Suite 3000

Austin, Texas 78701-4653

Phone: + 1 512 457 7000

Fax: + 1 512 721 2263

Brian.erickson@us.dlapiper.com

Attorney for Petitioner, BOE

Technology Group Co., LTD.

CERTIFICATE OF SERVICE

The undersigned certifies that on December 12, 2024, a true and correct copy of the Petitioner's Reply was served by emailing a copy of same (by agreement) to the following attorneys for the Patent Owner:

Benjamin T. Wang (bwang@raklaw.com)

Christian Conkle (cconkle@raklaw.com)

Alexandra Loew (aloew@raklaw.com)

Qi Peter Tong (ptong@raklaw.com)

Date: December 12, 2024

Respectfully submitted,

/s/ Brian Erickson

Brian Erickson

Reg. No. 48,895

DLA Piper LLP (US)

303 Colorado Street, Suite 3000

Austin, Texas 78701-4653

Phone: + 1 512 457 7000

Fax: + 1 512 721 2263

Brian.erickson@us.dlapiper.com

*Attorney for Petitioner, BOE Technology
Group Co., LTD.*