

**United States Court of Appeals  
for the Federal Circuit**

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**PLATINUM OPTICS TECHNOLOGY INC.,**  
*Appellant*

v.

**VIAVI SOLUTIONS INC.,**  
*Appellee*

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2023-1227

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2021-  
00631.

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Decided: August 16, 2024

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ANDREW R. SOMMER, Greenberg Traurig LLP, McLean,  
VA, argued for appellant. Also represented by ELANA ARAJ,  
New York, NY; VIVIAN KUO, Washington, DC.

MEGAN S. WOODWORTH, Venable LLP, Washington,  
DC, argued for appellee. Also represented by JUSTIN J.  
OLIVER.

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Before MOORE, *Chief Judge*, TARANTO, *Circuit Judge*, and  
CECCHI, *District Judge*.<sup>1</sup>

CECCHI, *District Judge*.

Platinum Optics Technology Inc. (PTOT) appeals from an *inter partes* review (IPR) final written decision of the Patent Trial and Appeal Board holding that PTOT failed to prove claims 1–3, 5–8, 10–12, 14, 16–21, and 23 of U.S. Patent No. 9,354,369 are unpatentable.<sup>2</sup> Because PTOT has failed to establish an injury in fact sufficient to confer standing to appeal, we *dismiss*.

#### BACKGROUND

Viavi Solutions Inc. (Viavi) owns the '369 patent, which relates to optical filters including layers of hydrogenated silicon and to sensor systems comprising such optical filters. '369 patent at 1:12–16. The '369 patent discloses hydrogenated silicon with specific optical properties, consisting of a high refractive index ( $n$ ) and a low extinction coefficient ( $k$ ). *Id.* at 4:13–17, 6:24–28.

Historically, hydrogenated silicon has been utilized as a high-refractive-index layer in optical filters. *Id.* at 2:27–35. However, the '369 patent explains that previous iterations of the material were unable to achieve “a suitably low extinction coefficient” over the relevant wavelength range while maintaining a high refractive index. *Id.* at 2:19–45. This difficulty arose from the prior method of reducing  $k$ —increasing the hydrogen content—which had the known effect of also reducing  $n$ . J.A. 2299–300. Recognizing the challenge of achieving an ideal pairing of  $n$  and  $k$ , the '369

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<sup>1</sup> Honorable Claire C. Cecchi, District Judge, United States District Court for the District of New Jersey, sitting by designation.

<sup>2</sup> PTOT does not specifically reference claim 23 in its Notice of Appeal. *See* ECF No. 1-2.

PLATINUM OPTICS TECHNOLOGY INC. v.  
VIAVI SOLUTIONS INC.

3

patent sought to disclose an “improved hydrogenated silicon material” (’369 patent at 4:8–24) which would “enhance the performance of the optical filter” (*id.* at 2:16–26). The high refractive index of the claimed hydrogenated silicon material allows for a low center wavelength shift, and the low extinction coefficient results in a high transmissivity within the passband. *Id.* at 2:16–26, 7:41–46. Specifically, the claims disclose a hydrogenated silicon material with a combination of a refractive index of greater than 3 and an extinction coefficient of less than 0.0005 over the wavelength range of 800 nm to 1100 nm. *Id.* at 2:49–59. The material would result in an optical filter “particularly suitable for use in a sensor system, such as a proximity sensor system, a three-dimensional (3D) imaging system, or a gesture-recognition system.” *Id.* at 4:8–13.

Independent claims 1 and 16 are illustrative of the challenged claims and recite:

1. An optical filter comprising:

a filter stack comprising:

a plurality of hydrogenated silicon layers, wherein *the plurality of hydrogenated silicon layers have a refractive index of greater than 3 over a wavelength range of 800 nm to 1100 nm and an extinction coefficient of less than 0.0005 over the wavelength range of 800 nm to 1100 nm*; and

a plurality of lower-refractive-index layers, wherein the plurality of lower-refractive-index layers each have a refractive index of less than 3 over the wavelength range of 800 nm to 1100 nm, and wherein the plurality of lower-refractive-index layers are stacked in alternation with the plurality of hydrogenated silicon layers;

wherein the optical filter has a passband at least partially overlapping with the wavelength range of 800 nm to 1100 nm,

wherein the passband has a center wavelength that shifts by less than 20 nm in magnitude with a change in an incidence angle between 0° to 30°, thereby providing the optical filter with a wide incidence-angle acceptance range.

16. A sensor system comprising:

an optical filter, having a passband including an emission wavelength and at least partially overlapping with a wavelength range of 800 nm to 1100 nm, being disposed to receive emitted light and transmit the emitted light,

wherein the emitted light is, emitted from a light source, at the emission wavelength in the wavelength range of 800 nm to 1100 nm, and

wherein the optical filter includes a filter stack including:

a plurality of hydrogenated silicon layers, wherein *the plurality of hydrogenated silicon layers each have a refractive index of greater than 3 over the wavelength range of 800 nm to 1100 nm and an extinction coefficient of less than 0.0005 over the wavelength range of 800 nm to 1100 nm;* and

a plurality of lower-refractive-index layers, wherein the plurality of lower-refractive-index layers each have a refractive index of less than 3 over the wavelength range of 800 nm to 1100 nm, and wherein the plurality of lower-refractive-index

PLATINUM OPTICS TECHNOLOGY INC. v.  
VIAMI SOLUTIONS INC.

5

layers are stacked in alternation with the plurality of hydrogenated silicon layers,

wherein a passband of the optical filter has a center wavelength that shifts by less than 20 nm in magnitude with a change in an incidence angle between 0° to 30°, thereby providing the optical filter with a wide incidence-angle acceptance range; and

a sensor, disposed to receive the emitted light after transmission by the optical filter, for detecting the emitted light.

*Id.* at 10:20–42, 11:27–12:11 (emphasis added). Claims 2, 3, 5–8, 10–12, and 14 depend from independent claim 1. *Id.* at 10:20–11:23. Claims 17–21 and 23 depend from independent claim 16. *Id.* at 11:27–12:45.

Before PTOT petitioned for IPR of the '369 patent, Viavi sued PTOT for infringement in two civil actions in the Northern District of California: *Viavi Solutions Inc. v. Platinum Optics Technology Inc.*, No. 5:20-cv-05501 (N.D. Cal.) (*Viavi I*) and *Viavi Solutions Inc. v. Platinum Optics Technology Inc.*, No. 5:21-cv-06655 (N.D. Cal.) (*Viavi II*). The patent infringement claims regarding the '369 patent were dismissed with prejudice from both matters. See Joint Stip., *Viavi I*, No. 5:20-cv-05501 (N.D. Cal. Mar. 7, 2022), ECF No. 152; Notice of Voluntary Dismissal, *Viavi II*, No. 5:21-cv-06655 (N.D. Cal. Mar. 7, 2022), ECF No. 26.

Following PTOT's IPR petition, the Board issued a final written decision holding that PTOT failed to show the challenged claims in the '369 patent were unpatentable. *Platinum Optics Tech. Inc. v. Viavi Sols. Inc.*, No. IPR2021-00631, 2022 WL 5056729 (P.T.A.B. Oct. 3, 2022) (*Decision*). Specifically, the Board concluded that the prior art

references of Pilgrim,<sup>3</sup> Gibbons,<sup>4</sup> Lairson,<sup>5</sup> and Yoda<sup>6</sup> did not render the challenged claims of the '369 patent unpatentable for obviousness. *Id.* at \*7–14. Recognizing the tradeoffs between  $n$  and  $k$  and the challenge of attaining a desired balance between the two, the Board determined that no prior reference disclosed the specific combination of  $n$  and  $k$  over the entire wavelength range that was claimed in the '369 patent. *Id.* at \*12–14.

The Board also explained that the known method of adjusting the extinction coefficient would be “counterproductive to the inventors’ objective” regarding the refractive index, and that achieving the claimed properties was not the result of optimization of the parameters. *Id.* at \*13. Instead, the testimony indicated that achieving the claimed hydrogenated silicon materials “would have involved significant trial-and-error experimentation with no expectation of success.” *Id.* at \*14 (citation omitted).

PTOT appeals the Board’s finding that PTOT failed to show the challenged claims of the '369 patent were unpatentable.

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<sup>3</sup> U.S. Patent Application Publication No. 2012/0224061 A1.

<sup>4</sup> K. Gibbons et al., *Development and Implementation of a Hydrogenated  $\alpha$ -Si Reactive Sputter Deposition Process*, 50 Ann. Tech. Conf. Procs., Soc’y of Vacuum Coaters 327 (2007).

<sup>5</sup> B.M. Lairson et al., *Reduced Angle-Shift Infrared Bandpass Filter Coatings*, 6545 Proc. SPIE Window and Dome Techs. and Materials X 65451C (2007).

<sup>6</sup> H. Yoda et al.,  *$\alpha$ -Si:H/SiO<sub>2</sub> Multilayer Films Fabricated by Radio-Frequency Magnetron Sputtering for Optical Filters*, 43 Applied Optics 3548 (2004).

PLATINUM OPTICS TECHNOLOGY INC. v.  
VIAMI SOLUTIONS INC.

7

## DISCUSSION

This court’s jurisdiction to review final decisions of the Board is limited to “Cases” and “Controversies” under Article III of the U.S. Constitution. U.S. Const. art. III, § 2, cl. 1. To establish a case or controversy, the appellant must meet the “irreducible constitutional minimum of standing.” *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 560 (1992). This requires that the appellant: “(1) suffered an injury in fact, (2) that is fairly traceable to the challenged conduct of the defendant, and (3) that is likely to be redressed by a favorable judicial decision.” *Spokeo, Inc. v. Robins*, 578 U.S. 330, 338 (2016). To establish an injury in fact, the alleged harm must be “‘concrete and particularized’ and ‘actual or imminent, not conjectural or hypothetical.’” *Id.* at 339 (quoting *Lujan*, 504 U.S. at 560). A party does not need Article III standing to appear before an administrative agency, see *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 279 (2016), but standing is required once the party “seeks review of an agency’s final action in a federal court.” *Phigenix, Inc. v. Immunogen, Inc.*, 845 F.3d 1168, 1171–72 (Fed. Cir. 2017). The party seeking judicial review—here, PTOT—bears the burden of proving standing. *JTEKT Corp. v. GKN Auto. LTD.*, 898 F.3d 1217, 1220 (Fed. Cir. 2018).

PTOT asserts it has standing to appeal the Board’s decision based on potential infringement liability stemming from (1) supplying its bandpass filters accused in *Viavi II* to parts integrators overseas, and (2) developing new models of bandpass filters.

### A

PTOT first argues that its continued distribution of the bandpass filters accused in *Viavi II* creates a likelihood that Viavi will sue again. Despite Viavi having dismissed the patent infringement claims related to the ’369 patent with prejudice from *Viavi I* and *Viavi II*, PTOT maintains that it has suffered an injury in fact. Where a party relies

on potential infringement liability as a basis for standing, the party “must establish that it has concrete plans for future activity that creates a substantial risk of future infringement or [will] likely cause the patentee to assert a claim of infringement.” *JTEKT Corp.*, 898 F.3d at 1221.

In support of its argument, PTOT points to a letter in which Viavi explained that “[b]ased on the broad and varying scope of Viavi’s U.S. Patents’ claims, [Viavi] do[es] not believe” it would be possible for PTOT to fulfill its supply agreements with non-infringing products. J.A. 4498. Based on this letter and Viavi’s history of lawsuits, PTOT contends that it “fully expects Viavi to sue it a third time over the ’369 patent.” Appellant’s Reply Br. at 4. But mere speculation about a possibility of suit, without more, is insufficient to confer standing. *See Apple Inc. v. Qualcomm Inc.*, 992 F.3d 1378, 1385 (Fed. Cir. 2021) (“At best, [appellant’s] allegations are speculation and conjecture about [patent owner’s] proclivity to assert its patent rights generally. But they are devoid of the specificity necessary to show that [patent owner] is likely to assert these particular patents against any particular products . . .”).

Moreover, PTOT’s argument fails to adequately address that Viavi’s letter was sent prior to *Viavi I* and *Viavi II*, in which the patent infringement claims regarding the ’369 patent were dismissed with prejudice. *See Apple Inc.*, 992 F.3d at 1385 (rejecting petitioner’s argument that previous suits for infringement created a basis for standing where the previous suits were dismissed with prejudice). PTOT’s unsubstantiated speculation about a threat of future suit is insufficient to show a substantial risk of future infringement or that Viavi is likely to assert a claim against it for the continued distribution of band-pass filters accused in *Viavi II*. Therefore, PTOT has not established an injury in fact based on its continued distribution of bandpass filters accused in *Viavi II*. *See Prasco, LLC v. Medicis Pharm. Corp.*, 537 F.3d 1329, 1338–39 (Fed. Cir. 2008) (“[A] case or controversy must be based on



PLATINUM OPTICS TECHNOLOGY INC. v.  
VIAMI SOLUTIONS INC.

9

a *real* and *immediate* injury or threat of future injury that is *caused by the defendants . . .*” (emphasis in original)).

## B

PTOT also argues it has suffered an injury in fact based on its development of new bandpass filters. In support of its argument, PTOT submitted a declaration from Yiwei Lin, Deputy Director of Operation Management at PTOT. J.A. 4516–20. Lin asserts that PTOT continues to develop new models of bandpass filters and that PTOT anticipates Viavi will again assert the ’369 patent. J.A. 4519–20. Lin, however, fails to identify any specific, concrete plans for PTOT to develop a product that may implicate the ’369 patent.

Lin states that “[a]s a part of PTOT’s on-going effort to improve its bandpass filters, PTOT continues to work with its existing customers in Asia to develop new models of bandpass filters and anticipates selling the new models of the bandpass filters to PTOT’s existing customers within the next few years.” J.A. 4520 ¶ 14. But Lin’s declaration does not provide any detailed plans for development of these new filters. Nor does Lin explain the particulars of these new models, or how the models may relate to the ’369 patent. For example, Lin does not identify the material of the new models or any of their relevant properties. Of course, “IPR petitioners need not concede infringement to establish standing to appeal.” *JTEKT Corp.*, 898 F.3d at 1221. But Lin’s vague and conclusory statements are insufficient to establish that PTOT has concrete plans for the development of bandpass filters. *See Allgenesis Biotherapeutics Inc. v. Cloudbreak Therapeutics, LLC*, 85 F.4th 1377, 1380–81 (Fed. Cir. 2023) (dismissing appeal for lack of standing where “conclusory” testimony that appellant was continuing to develop products was insufficient to establish concrete plans).

Further, PTOT has not established that its development activities will cause a substantial risk of

infringement or will likely cause Viavi to assert a claim of infringement. Lin states that “PTOT anticipates that Viavi will assert the ’369 patent against PTOT’s bandpass filters currently under development in the same way that Viavi has sued PTOT on its prior bandpass filters . . . .” J.A. 4520 ¶ 14. Lin’s contentions, however, do not pass muster to establish there is a substantial risk of a future infringement suit. *See JTEKT Corp.*, 898 F.3d at 1221 (“[T]hese declarations do not establish that [appellant’s] planned product would create a substantial risk of infringing . . . or likely lead to charges of infringement” where the product was still “in development” and “will continue to evolve.”). PTOT again directs us to the letter from Viavi as evidence of the threat of future suit based on the new models. However, the letter was sent as a warning prior to the initiation of *Viavi I*, in which the relevant claims were dismissed with prejudice; it neither specifically addresses models currently in development nor forecloses the ability of PTOT to develop a non-infringing product. PTOT has not pointed to any other evidence that Viavi has made a threat regarding the models still in development. *See Oral Arg.* at 35:00–35:40, available at [https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-1227\\_06052024.mp3](https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-1227_06052024.mp3).

Therefore, PTOT has failed to establish it has concrete plans for future activity that create a substantial risk of infringement or a likelihood that Viavi will assert a claim of infringement. In turn, PTOT has failed to establish standing to appeal.

#### CONCLUSION

We conclude PTOT has failed to establish an injury in fact sufficient to confer standing on appeal. Therefore, we dismiss the appeal and do not reach the merits of the Board’s decision.

**DISMISSED**

PLATINUM OPTICS TECHNOLOGY INC. v.  
VIAVI SOLUTIONS INC.

11

COSTS

No costs.