

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JinkoSolar Co., Ltd.,
Petitioner

v.

First Solar, Inc.,
Patent Owner

Case No. IPR2025-01130

U.S. Patent No. 9,130,074

**PATENT OWNER'S REQUEST FOR
DISCRETIONARY DENIAL OF INSTITUTION**

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PATENT OWNER'S EXHIBITS

Exhibit	Description
2001	Keith R. Hummel Biography
2002	Declaration of Keith R. Hummel in Support of PHV Motion
2003	JinkoSolar, “About TOPCon Technology” (accessed Sept. 29, 2025)
2004	Chunduri, S.K., et al., “PERC Solar Cell Technology 2016: Background, Status and Outlook”, <i>TaiyangNews</i> (2016)
2005	JinkoSolar Press Release, “JinkoSolar Announces Fourth Quarter and Full Year 2018 Financial Results” (Mar. 22, 2019)
2006	Fuhs, M., “TOPCon: The next big thing after PERC”, <i>PV Magazine</i> (Oct. 8, 2018)
2007	Bellini, E., “Jinko claims 24.79% efficiency for n-type monocrystalline cell”, <i>PV Magazine</i> (Jul. 20, 2020)
2008	Shaw, V., “The weekend read: Life after PERC”, <i>PV Magazine</i> (May 8, 2021)
2009	JinkoSolar Press Release, “JinkoSolar's 182 mm TOPCon Module Reaches Highest Conversion Efficiency of 25.42%” (Jun. 11, 2024)
2010	Post-Conference Brief of China Chamber of Commerce for Import and Export of Machinery and Electronic Products, Volume I of II, ITC Inv. Nos. 701-TA-511 & 731-TA-1246-47 (Jan. 29, 2014)
2011	Zacks Equity Research, “FirstSolar to Buy TetraSun, Gives View”, <i>Yahoo! Finance</i> (Apr. 10, 2013)
2012	“First Solar to Acquire TetraSun to Expand Addressable Market Opportunity”, <i>Business Wire</i> (Apr. 9, 2013)
2013	Shepard, J., “First Solar to Acquire TetraSun to Expand Addressable Market Opportunity”, <i>EEPower</i> (Apr. 11, 2013)
2014	Glunz, S.W., et al., “Silicon-based passivating contacts: The TOPCon route”, <i>Progress in Photovoltaics</i> (Dec. 20, 2021)
2015	Espacenet cited documents list for CN110634996A
2016	Espacenet family members list for U.S. Pat. No. 9,130,074
2017	USPTO Global Dossier for CN110634996A, First Search (Oct. 26, 2020)
2018	Office of the United States Trade Representative, 2025 Special 301 Report (Apr. 2025)
2019	Gupta, K., et al., “Protecting Intellectual Property for National Security”, <i>Center for Strategic and International Studies</i> (Mar. 2025)

Exhibit	Description
2020	Stipulation and Order to Amend Scheduling Order, <i>First Solar, Inc. v. JinkoSolar Holding Co., Ltd.</i> , No. 25-223 JLH (D. Del. Aug. 14, 2025), ECF No. 33
2021	Defendants' Answer, Affirmative Defenses, and Counterclaims to Plaintiff's Complaint for Patent Infringement, <i>First Solar, Inc. v. JinkoSolar Holding Co., Ltd.</i> , No. 25-223 JLH (D. Del. Jun. 27, 2025), ECF No. 18

Pursuant to 35 U.S.C. § 314(a) and the Office's Interim Processes for PTAB Workload Management, dated March 26, 2025 (the "March 2025 Guidance"), Patent Owner First Solar, Inc. ("First Solar") respectfully requests that the Petition be discretionarily denied.

I. Introduction.

The Petition is meritless. But the Office should not even consider it. Contrary to the March 2025 Guidance, the Petition asks the Office to second-guess a decade-old, foundational patent held by First Solar, a U.S. technology innovator. What is more, this is not a routine challenge: the Petition was brought by a foreign (Chinese) company backed by a foreign adversary (China) that has a documented history of predatory and anticompetitive conduct against U.S. companies. This is precisely the sort of petition that should be discretionarily denied.

Born in the Midwest and headquartered in the Southwest, First Solar is one of the largest and most successful solar technology companies in the world. Though its reach is global, it has consistently invested in American manufacturing and American jobs, and its solar products have set industry benchmarks for quality, durability, reliability, design and sustainability. First Solar is the only one of the world's top ten solar companies that is based in the United States.

The challenged patent, U.S. Patent No. 9,130,074 (the "'074 Patent"), is a prime example of First Solar's leadership and innovation. Over 15 years ago,

TetraSun, Inc. (“TetraSun”), one of First Solar’s current subsidiaries, filed patent applications that proved to be foundational for a solar technology called TOPCon, which stands for “tunnel oxide passivated contact”. For years, solar researchers had been experimenting with TOPCon, but it had been unable to compete with conventional solar technology. Thanks to TetraSun’s pioneering work, TOPCon solar cells could be manufactured more cost effectively, with high operational efficiency and with a superior bifacial design—that is, they could generate more power from the back of the solar cell and generate more power overall. TOPCon is a growing solar technology that is being adopted by many foreign solar companies.

Petitioner JinkoSolar Co., Ltd. (“JinkoSolar”) is a solar producer that is based in China and is backed by the Chinese government. JinkoSolar manufactures TOPCon solar cells, in China, that practice the ’074 Patent, and imports those solar cells into the United States, without a license from First Solar. JinkoSolar has a history of competing unfairly with American companies like First Solar, including by dumping solar modules on the American market.

JinkoSolar now seeks to challenge the ’074 Patent, which issued in 2015. JinkoSolar’s Petition should be discretionarily denied for several reasons.

First, the expectations of the parties are settled. The ’074 Patent has been in force in JinkoSolar’s technology space for over 10 years, and First Solar’s ownership of TOPCon technology has been widely publicized since at least 2013.

Moreover, the evidence strongly suggests that JinkoSolar itself likely has been aware of the '074 Patent for more than six years. (Part II.)

Second, compelling economic and national security interests warrant denial. JinkoSolar and its Chinese government backer have long sought to harm U.S. interests, and the Office should not expend its limited resources considering a challenge (like the Petition) that threatens further harm to American companies. (Part III.)

Third, the Petition relies on expert testimony to fill gaps in its argument, contrary to 37 C.F.R. § 42.104(b)(4). As to Ground I alone, the Petition relies on the testimony of JinkoSolar's proffered expert, Dr. Hatalis, 30 separate times to attempt to establish the existence in the prior art of elements of each challenged claim. And, with respect to independent claim element 1[f] and dependent claim 2, the Petition relies *solely* on the testimony of Dr. Hatalis, including on an "annotated" figure prepared by Dr. Hatalis that was not simply annotated but instead doctored to include features that appear nowhere in the cited art. (Part IV.)

Fourth, the *Fintiv* factors all are either neutral or favor denial, which also demonstrates that discretionary denial is appropriate. (Part V.)

Each of these reasons independently warrants discretionary denial. Taken together, they practically compel it.

II. Settled Expectations Warrant Discretionary Denial.

The '074 Patent issued in September 2015—almost ten years before the Petition was filed. That fact alone weighs strongly in favor of discretionary denial. *Dabico Airport Sols. v. AXA Powers APS*, No. IPR2025-00408, Paper 21 at 2–3 (Director Jun. 18, 2025) (discretionarily denying institution where “the challenged patent has been in force almost eight years, creating settled expectations”); Mar. 2025 Guidance at 2 (relevant considerations for discretionary denial include “[s]ettled expectations of the parties, such as the length of time the claims have been in force”). Discretionary denial further is warranted because (a) the '074 Patent is directed to the technology space in which JinkoSolar has operated for years; (b) First Solar’s ownership of the patented technology has been widely publicized since 2013; and (c) evidence strongly suggests that JinkoSolar knew of the '074 Patent years before it filed the Petition.

A. The '074 Patent has been in force in JinkoSolar’s technology space for 10 years.

Under the March 2025 Guidance, and consistent with the statutory framework for patent infringement, institution is rarely appropriate when a challenged patent issued six or more years before the petition was filed. *See Dabico*, No. IPR2025-00408, Paper 21 at 3. This is because, by that point, the parties’ expectations regarding the validity of the patent have become settled. *See id.*; *see, e.g., Jinkosolar Co., Ltd., v. Longi Green Energy Technology Co. Ltd.*,

IPR2025-00859, Paper 10 at 2 (Director Sept. 3, 2025) (“[T]he challenged patent has been in force for approximately ten years, creating strong settled expectations for Patent Owner”). “[T]he longer the patent has been in force, the more settled expectations should be.” *Dabico*, No. IPR2025-00408, Paper 21 at 3. And, where a petitioner *entered* the technology space to which the patent is directed but failed to timely challenge the patent, expectations are all the more settled. *Sig Sauer Inc. v. Lone Star Future Weapons, Inc.*, IPR2025-00410, Paper 13 at 2 (Director Jun. 26, 2025) (denying institution where patent “issued over 10 years ago, and Petitioner subsequently developed a competing product without challenging th[e] patent”).

All of these factors are present here. The ’074 Patent issued in September 2015, and the Petition was filed on July 18, 2025, well over the six-year threshold. Indeed, the patent has been in force for almost 10 years before the Petition was filed, just as in another JinkoSolar petition that recently was discretionarily denied. *See Jinkosolar*, IPR2025-00859, Paper 10 at 2. And, as discussed below, JinkoSolar entered the TOPCon solar cell market *after* the ’074 Patent issued and admittedly practices the TOPCon technology to which the patent is directed.

As JinkoSolar explains on its website, TOPCon is characterized by solar cells that contain a “silicon oxide layer . . . combined with a doped polycrystalline silicon layer”. (Ex. 2003.) The ’074 Patent is directed to a method of

manufacturing an improved TOPCon solar cell, with “a surface passivating interface layer”, such as “silicon oxide”, “and a highly doped polycrystalline passivation layer”. (Ex. 1001 at 2:1–2, 5:56–59.) Around the time the ’074 Patent issued, industry publications recognized that First Solar’s technology is directed to TOPCon. (See Ex. 2004 (“TOPCon[] cell is other technology that has recently gained some attention. . . . The cell features selective passivated contacts made of tunnel oxide on the rear side. . . . US start-ups Tetrasun (now owned by First Solar) and Silevo (now owned by SolarCity) have developed cell technologies based on the tunneling oxide approach.”).)

JinkoSolar entered the TOPCon market no later than 2019—four years after the ’074 Patent issued and as TOPCon was reportedly becoming the “[t]he next big thing”. (Ex. 2005; Ex. 2006.) Since then, JinkoSolar has repeatedly touted its TOPCon products:

- In July 2020, *PV Magazine* reported that “Jinko said its cell was based on its HOT design and featured tunnel-oxide passivating contact (TOPCon) technology”. (Ex. 2007 at 2.)
- In May 2021, *PV Magazine* reported that “Jinko for example, has publicly commented that . . . we (Jinko) currently stand [for] TOPCon”. (Ex. 2008 at 4.)

- In June 2024, JinkoSolar issued a press release expressing its “confidence that N-type TOPCon technology is the most competitive technology choice for sustainability and, as a result, has substantial growth potential”. (Ex. 2009.)

JinkoSolar thus admittedly operates in the '074 Patent's technology space, and has done so for at least six years. And it entered the space after the '074 Patent had already issued. The Office should not waste its limited resources reviewing a challenge by a long-time market participant against a decade-old patent.

B. First Solar's ownership in TOPCon technology has been widely publicized since 2013.

Although the existence of the '074 Patent was sufficient to put JinkoSolar on notice of First Solar's ownership in TOPCon technology, industry and media reports made it virtually impossible for JinkoSolar to be unaware of such facts. *See Murata Mfg. Co. v. Ga. Tech Rsch. Corp.*, No. IPR2025-00383, Paper 14 at 2–3 (Director July 29, 2025) (denying institution where “Petitioner was aware that Patent Owner was involved in the same technology space for a significant amount of time before filing its Petition”).

An early report came in April 2013, when First Solar announced that it would acquire TetraSun, which was a significant event in the industry. As reported by *Yahoo! Finance*, TetraSun had “significant expertise in silicon photovoltaic (PV) technology” and had “developed a break-through cell architecture”—

improved TOPCon technology—“that has the potential to convert 21% sunlight into electricity at lower manufacturing costs in comparison to conventional multi crystalline silicon solar cells”. (Ex. 2011.) The article further recognized that “Chinese producers” were focused on the silicon-based PV technology, and predicted that “[t]his [the TetraSun acquisition] will open up fresh opportunity for First Solar in the PV market that is forever keen on high-efficiency technology”. (*Id.*) Other prominent industry publications, such as *Business Wire* and *EEPower* issued similar reports. (Ex. 2012; Ex. 2013.)

As expected, TetraSun’s technology soon caught the eye of “Chinese producers”. Less than one year after First Solar acquired TetraSun, the China Chamber of Commerce for Import and Export of Machinery and Electronic Products took on allegations that Chinese producers had unfairly dumped (non-TOPCon) silicon-based solar products on the U.S. market. In its defense of those producers, the China Chamber of Commerce argued to the International Trade Commission that First Solar would soon be producing crystalline silicon-based products that would compete with the products of the Chinese producers.¹

¹ In making this argument, the China Chamber of Commerce presumably was attempting to minimize the injury to American domestic industry caused by the Chinese producers’ misconduct in the United States.

Specifically, the China Chamber of Commerce stated First Solar had acquired “TetraSun, Inc., a company ‘developing a novel, high-efficiency, low-cost crystalline silicon cell technology’” and that First Solar would “begin[]” “production [of such technology] by early 2015”. (Ex. 2010 at 31 (citing “First Solar 10-Q, November 1, 2013, at 49”).) Thus, by 2014, an organization with ties to the Chinese government—a known backer of JinkoSolar—not only was aware of TetraSun’s technology, but it had used the existence of that technology as a basis for defending the misconduct of Chinese producers.

In the years that followed, TetraSun’s TOPCon portfolio continued to attract industry attention. For example, in April 2016, the *TaiyangNews* reported that “Tetrasun (now owned by First Solar) . . . ha[s] developed cell technologies based on the tunneling oxide approach”, *i.e.*, TOPCon. (Ex. 2004 at 44.) And, even after First Solar chose to focus on its technologically distinct cadmium telluride solar cells, industry publication *Progress in Photovoltaics* reported on “TetraSun’s patent portfolio”, observing that the portfolio “suggests that [TetraSun’s] passivating contact technology is based on poly-Si/SiO₂ structures”—a type of TOPCon technology. (Ex. 2014 at 3.)

There can be no reasonable dispute that participants in the solar industry—including Chinese producers like JinkoSolar—have long been aware of First Solar’s development and ownership in TOPCon technology.

C. JinkoSolar likely knew about the '074 Patent for years.

As of no later than 2020, JinkoSolar had specific knowledge of First Solar's TOPCon-related patent family, and was likely aware of the '074 Patent.

In September 2019, JinkoSolar filed a patent application in China, under application number CN110634996A. (Ex. 2015.) During prosecution of this application, in 2020, the Chinese examiner cited TetraSun patent CN104952943A. (*Id.*; Ex. 2017). That patent, which is a counterpart of the '074 Patent and, like the '074 Patent, is directed to TOPCon technology. (Ex. 2016; *see* App'x A (chart comparing representative claims).)

JinkoSolar's U.S. patents, which were filed later, also cite First Solar's TOPCon patents, including U.S. patents in the same family as the '074 Patent. In December 2023, JinkoSolar filed an application that issued as U.S. Patent No. 12,119,423. During prosecution of that application, the examiner cited a published application filed by TetraSun (U.S. Pat. App. Pub. No. 2015/0357487 A1) that is a divisional of the application that issued as the '074 Patent. The patent that issued from that divisional (U.S. Pat. No. 9,666,732) is directed to TOPCon.

Thus, as of no later than 2020, JinkoSolar was aware that First Solar held TOPCon patents—and, thus, likely was aware of the '074 Patent itself.

* * *

Each of the foregoing points independently supports discretionary denial.

Taken together, they leave no room for doubt that the parties' expectations were settled at the time the Petition was filed and that the Petition should be denied.

III. Compelling National Economic and Security Interests Warrant Discretionary Denial.

The Petition should be denied because facilitating JinkoSolar's attack on the intellectual property of a leading U.S. innovator would threaten "compelling economic . . . or national security interests". (Mar. 2025 Guidance at 2.)

There is a compelling economic and national security interest in protecting the intellectual property rights of American technology companies from the misconduct of companies backed by foreign adversaries. As the Office of the United States Trade Representative recently reported, "a key objective of the Administration's trade policy is ensuring that U.S. owners of IP have a full and fair opportunity to use and profit from their IP around the globe" and "the denial of equitable market access, [would] seriously impede the ability of the United States persons that rely on protection of intellectual property rights to export and operate overseas, thereby harming the economic interests of the United States.'" (Ex. 2018 at 5 (quoting Omnibus Trade and Competitiveness Act of 1988, § 1303(a)(1)(B)).) Similarly, the Center for Strategic and International Studies (a bipartisan, nonprofit policy research organization) has observed that, "secure, stable, and predictable IP rights" are of "critical importance" for "innovation and U.S. economic and national security", and "duplicative" review before the PTAB—especially when initiated by

“Chinese companies” who are “leading users of the PTAB”—undermines those rights. (Ex. 2019 at 8, 40.)

These risks of national harm are present here. With the help of the Chinese government, JinkoSolar illegally produces and exports the groundbreaking TOPCon technology that TetraSun patented and First Solar owns. But that is not JinkoSolar’s only misconduct. Only a few months ago, the U.S. Department of Commerce determined that JinkoSolar had unfairly dumped solar modules on the American market, causing material injury to the domestic industry formed by companies like First Solar. 90 Fed. Reg. 26786, 26789 (Jun. 24, 2025) (determining that JinkoSolar dumped solar modules with a “dumping margin” of 126%). Thus, JinkoSolar not only infringes the intellectual property rights of U.S. companies, such as First Solar, it actively impairs the ability of those U.S. companies to compete with the infringing products that JinkoSolar sells by selling those products at below cost. The national economic and security interests in protecting companies like First Solar from such misconduct is both well-established and compelling. As CSIS has explained, “Economic security is national security”, which “includes a nation’s ability to safeguard its economic interests [and] protect its industries from foreign threats”. (Ex. 2019 at 14 (quoting The White House, *National Security Strategy* (Washington, DC: The White House, 2017).))

First Solar is exactly the sort of company the U.S. patent system is intended to protect. Not only is First Solar a global provider of responsibly produced, eco-efficient solar modules, it is also the only U.S.-headquartered company among the world's largest producers of solar products. And First Solar's subsidiary, TetraSun, was instrumental in developing TOPCon technology that has improved energy efficiency worldwide. The Office should not expend its limited resources considering a challenge that runs contrary to the national interests of the United States and its domestic industry. The Petition should be discretionally denied.

IV. The Petition's Heavy Reliance on Expert Testimony Warrants Discretionary Denial.

The Petition should be discretionarily denied because it improperly relies on expert testimony to fill evidentiary gaps.

Under Rule 104(b)(4), a “petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon”, 37 C.F.R. § 42.104(b)(4), and a petitioner may not rely on expert testimony to fill gaps in the cited art, Director Mem. re: “Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in Inter Partes Reviews” (Jul. 31, 2025) (“enforcement of Rule 104(b)(4) means that . . . expert

testimony . . . may not be used to supply a missing claim limitation”).² The greater “the extent of the petition’s reliance on expert testimony”, the more appropriate the case for discretionary denial becomes. (Mar. 2025 Guidance at 2.)

Here, the Petition relies heavily on the supposed “understanding” of a person of ordinary skill in the art (“POSITA”) rather than the express disclosures of the cited art. For example, as to Ground I alone, the petition relies on the testimony of JinkoSolar’s expert, Dr. Hatalis, regarding the understanding of a POSITA *over 30 times* and with respect to elements of *every challenged claim*. (See Pet. 18–43.) With respect to independent claim element 1[f] and dependent claim 2, the Petition relies *solely* on the testimony of Dr. Hatalis. This testimony is excerpted here:

Claim	Ground	Reliance on Expert Testimony
1[f] (“wherein the dopant diffused through the at least one interface passivation layer	I	“Dr. Hatalis explains that a POSITA would understand that the ‘shortened charge carrier flow paths’ can be achieved by reducing the resistance of the conductive and passivating layer, which is disclosed by the ’074 patent.”

² See also 35 U.S.C. § 311(b) (petitioner may seek review “*only on the basis of prior art consisting of patents or printed publications*” (emphasis added)).

Although the July 31, 2025 Memorandum technically applies to petitions filed on or after September 1, 2025, the requirement of Rule 104(b)(4), which has been in force since the AIA took effect, is clear. 77 Fed. Reg. 48680, 48728 (Aug. 14, 2012).

Claim	Ground	Reliance on Expert Testimony
provides shortened charge carrier flow paths between the substrate and the electrodes through the at least one conductive and passivating layer and the at least one interface passivation layer ”)		(Pet. 27.) “Dr. Hatalis explains that a POSITA would understand that the carriers in Tamura that flow between the silicon substrate and the electrodes are the minority carriers, and for these minority carriers to contribute to the current flow, they must reach the metal electrode layer 22.” (Pet. 28.) “A POSITA would understand that, as shown in Tamura Figure 3 and related disclosure, in a portion of the front or top surface, electrode 22 has a full area contact coverage with the ‘the n⁺ type crystalline silicon layer 23’ (<i>the conductive and passivating layer</i>) and layer 23 provides a <i>shortened charge carrier flow path</i> (a vertical path) for carriers to pass through it.” (Pet. 28–29 (citing Dr. Hatalis).) “Dr. Hatalis further explains that a POSITA would understand that Tamura discloses the top n-region consisting of layers 23 and 24; the <i>conductive and passivating layer</i> and the <i>interface passivation layer</i>, respectively, provides a low resistance path for the minority carriers to flow from the substrate (element 25) to the electrode (element 22).” (Pet. 29.)
1[f] (“wherein the dopant diffused through the at least one interface passivation layer provides shortened charge carrier flow paths between the substrate and the	II	“A POSITA would understand that under the above interpretation [of Borden], this process provides shortened charge flow paths between the substrate and the electrode on the doped polysilicon layer.” (Pet. 54 (citing Dr. Hatalis).) “Dr. Hatalis explains that a POSITA would understand that this extensive electrode coverage over the doped polysilicon regions

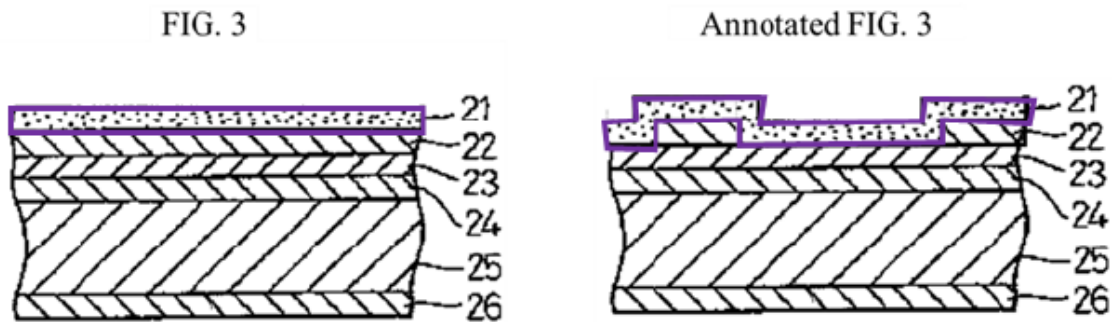
Claim	Ground	Reliance on Expert Testimony
electrodes through the at least one conductive and passivating layer and the at least one interface passivation layer ”)		reduces unnecessary lateral current paths, thereby effectively shortening the charge carrier flow paths between the substrate and the electrodes.” (Pet. 56.)
1[f] (“wherein the dopant diffused through the at least one interface passivation layer provides shortened charge carrier flow paths between the substrate and the electrodes through the at least one conductive and passivating layer and the at least one interface passivation layer ”)	IV	“A POSITA would understand that this process provides shortened charge flow paths between the substrate and the electrode that contacts the thermal-crystallized heavily doped silicon layer.” (Pet. 93 (citing Dr. Hatalis).) “As shown in 1[e], a POSITA would understand that Rana discloses a solar cell structure similar to the FIG. 3 of the ‘074 patent. Dr. Hatalis further explains that Rana discloses a full contact coverage structure that inherently reduces unnecessary lateral current paths, thereby effectively shortening the charge carrier flow paths between the substrate and the electrodes.” (Pet. 93–94.)
2 (“The method of claim 1, further comprising depositing at least one antireflective layer, and/or a low reflective index layer forming a good internal mirror on a back of the solar cell.”)	I	“Although FIG. 3 of Tamura depicts the antireflective layer on top of the metal electrode 22, a POSITA would understand that the cross section depicted in Figure 3 is along a direction that is parallel to one of the fingers of the comb.” (Pet. 31 (citing Dr. Hatalis).) “A POSITA would also understand that if the cross-section is drawn along a direction perpendicular to the fingers of the comb, it will appear as shown in the annotated FIG. 3 shown below.” (Pet. 31 (citing Dr. Hatalis).)

Claim	Ground	Reliance on Expert Testimony
		“A POSITA would understand that in the portion of the top surface not covered with the metal electrode 22, i.e., in between two successive fingers, as shown in the annotated FIG. 3 below, the transparent electrode acts as an antireflective layer by minimizing the amount of light that is reflected by the top surface and thus more light is entering the solar cell.” (Pet. 31 (citing Dr. Hatalis).) “Dr. Hatalis further explains that a PHOSITA would understand a “transparent electrode” 21, e.g., a transparent conductive oxide such as Indium Tin Oxide (ITO) serves as an <i>antireflective layer</i> because a transparent electrode has optical transparency and can be deposited with a low index of refraction ($n < 2$) in order to minimize the difference between its index of refraction and the index of refraction of air $n=1$, thus minimizing reflection.” (Pet. 32.) “A POSITA would understand that the “back surface electrode” 26 is a metal that serves as an internal mirror that reflects photons that reach the back side towards the front thus increasing the optical path of the photons.” (Pet. 32 (citing Dr. Hatalis).) “Dr. Hatalis refers to Yamamoto and explains that POSITA would understand that an internal mirror, e.g., a back surface electrode 26, as a typical industrial standard practice, is disclosed by Tamura.” (Pet. 33.)
2 (“The method of claim 1, further comprising depositing at least	II	“Dr. Hatalis refers to Smith and explains that a POSITA would understand that the aluminum layer on the back side, as disclosed in Borden, has a refractive index less than 2.0, which

Claim	Ground	Reliance on Expert Testimony
one antireflective layer, and/or a low reflective index layer forming a good internal mirror on a back of the solar cell.”)		functions as a good internal mirror.” (Pet. 57.)
2 (“The method of claim 1, further comprising depositing at least one antireflective layer, and/or a low reflective index layer forming a good internal mirror on a back of the solar cell.”)	IV	“Dr. Hatalis refers to Neville and Markvart to explain that it was well known that forming an antireflective layer on the light entering side of a solar cell reduces the light losses due to reduction of light lost due to reflection. It was also well known that silicon nitride is a very good antireflective layer.” (Pet. 95.) “Dr. Hatalis explains that a POSITA would understand that a silicon nitride layer disclosed by Rana as a surface passivation layer and an antireflective layer. . . . Dr. Hatalis refers to Green to explain that Rana’s solar cell structure as shown in the annotated Fig. 4c with a patterned antireflective layer formed on the front or light entering side of the solar cell was well known in the art.” (Pet. 95–96.)

The Petition’s arguments regarding claim element 1[f] and claim 2 also rely heavily on what Petitioner calls “Annotated Figure 3”. (See, e.g., Pet. 30.) Based on Petitioner’s description, one might assume that the image is merely an “annotation” of Tamura’s Figure 3. It is not. “Annotated Figure 3” is in fact *a newly created figure, proffered by Dr. Hatalis*. (See Pet. 30, 32; Ex. 1003 ¶¶ 133–134, 138.) And Dr. Hatalis’s fictional figure is not merely an illustrative aid; it

depicts a *completely reshaped* electrode layer, which appears nowhere in Tamura:



Tamura, FIG. 3 (annotated, left), Tamura, FIG. 3 (annotated, right).

(*Id.*; Ex. 1004.) This use of a doctored diagram confirms that the Petition relies heavily on expert testimony, rather than the “prior art patents or printed publications relied upon”, and thus plainly runs afoul of Rule 104(b)(4) and should be discretionarily denied.

V. The *Fintiv* Factors Warrant Discretionary Denial.

In a request for discretionary denial, “the parties are permitted to address all relevant considerations” (Mar. 2025 Guidance at 2), including considerations under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). All factors under *Fintiv*, either favor denial or are neutral.

Factor 1 (“whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted”) is **neutral**. No stay has been sought, and there is no evidence that one is likely to be entered unless and until an IPR is instituted. See *IOENGINE, LLC v. PayPal Holdings, Inc.*, No. CV 18-452, 2019

WL 3943058, at *6 (D. Del. Aug. 21, 2019) (Bryson, J.) (“courts almost invariably deny requests for stays pending IPR proceedings when the stay requests are filed before the IPR is instituted”). In addition, the parties have begun discovery in the District Court proceeding in Delaware, and they will have made document productions and exchanged infringement and validity contentions by the time a decision on the merits of institution is due. (Ex. 2020 at 1.)

Factor 2 (“proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision”) is **neutral**. A final decision in an IPR (if instituted) would be projected for January 2027, and trial in the Delaware action is set for February 2028. (Ex. 2020.) Though trial is not scheduled to occur until after the projected deadline for final written decision, the parties nonetheless will have expended significant resources litigating invalidity by the time the final decision is entered, including completing fact discovery and claim construction and exchanging final invalidity contentions. (Ex. 2020 at 1–2.) Any efficiencies of an IPR are, at best, uncertain.

Factor 3 (“investment in the parallel proceeding by the court and the parties”) is **neutral**. The litigation is at a relatively early stage, but the parties have begun to expend resources, including by exchanging discovery and will exchange documents before the Board is expected to render its institution decision.

Factor 4 (“overlap between issues raised in the petition and in the parallel

proceeding”) favors **denial**. Petitioner has filed a counterclaim under §§ 102 and 103 that cites the Tamura and Rana references that are also relied upon by Petitioner in Grounds I and IV of the Petition. (Ex. 2021 at 33.)

Factor 5 (“whether the petitioner and the defendant in the parallel proceeding are the same party”) favors **denial**. The parties in both proceedings are the same: Petitioner is the defendant and First Solar is the plaintiff in the litigation.

Factor 6 (“other circumstances that impact the Board’s exercise of discretion, including the merits”) favors **denial**, for the reasons stated in the foregoing sections.

The *Fintiv* factors thus also support discretionary denial of institution.

VI. Conclusion.

For the foregoing reasons, the Petition should be discretionarily denied.

Dated: September 29, 2025

Respectfully submitted,

/Sharonmoyee Goswami/

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APPENDIX A

CN104952943A (machine translation)	'074 Patent
1. manufacture a method for solar cell, it comprises:	1. A method of fabricating a solar cell, comprising;
Substrate is provided;	providing a wafer as a central substrate ;
Interface passivation layer is provided over the substrate;	depositing or growing at least one amorphous interface passivation layer over the substrate;
Described interface passivation layer provides passivating film, and described passivating film comprises passivating material and conducting doping agent ;	depositing at least one conductive and passivating layer on the at least one interface passivation layer, the at least one conductive and passivating layer comprising a dopant ;
Heat-treat described passivating film, described heat treatment makes at least part of described conducting doping agent be diffused in described interface passivation layer to promote the electrical connection with substrate; With	providing thermal treatment at a temperature of about 500° C. or higher, the thermal treatment crystallizing, at least in part, the at least one conductive and passivating layer and facilitating diffusion of the dopant from the at least one conductive and passivating layer through the at least one interface passivation layer; and
Described passivating film provides at least one electrode , and the conducting doping agent wherein in described passivating film and interface passivation layer promotes described electrical connection between at least one electrode and substrate.”	providing metallization as electrodes which directly contact the at least one conductive and passivating layer following the thermal treatment thereof, wherein the dopant diffused through the at least one interface passivation layer provides shortened charge carrier flow paths between the substrate and the electrodes through the at least one conductive and passivating layer and the at least one interface passivation layer.

CERTIFICATION UNDER 37 C.F.R. § 42.24

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Request totals 5,040 words (according to the word count feature of Microsoft Word, and excluding the table of contents, table of exhibits, table of authorities, this certification, and the certificate of service), which is fewer than the 14,000 words allowed under 37 C.F.R. § 42.24 and the Director's Memorandum regarding Interim Processes for PTAB Workload Management, dated March 26, 2025.

Dated September 29, 2025

Respectfully submitted,

/Sharonmoyee Goswami/

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CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the attached Request and supporting materials were served on September 29, 2025, by electronic mail, as authorized by

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