

Filed on behalf of: Kolon Industries, Inc.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HS HYOSUNG ADVANCED MATERIALS CORP.,
Petitioner,

v.

KOLON INDUSTRIES, INC.
Patent Owner.

Case IPR2025-00662
Patent 9,789,731

PATENT OWNER'S BRIEF ON DISCRETIONARY DENIAL

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Exhibit List

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2001	RESERVED
2002	Civil Minutes – General, <i>Kolon Industries, Inc. v. HS Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Apr. 4, 2025), Dkt. No. 149
2003	Civil Minutes – General, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Aug. 21, 2024), Dkt. No. 68
2004	Proof of Service of Summons, Complaint, and related documents, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Mar. 5, 2024), Dkt. No. 15
2005	Hyosung Invalidation Trial Petition, dated Apr. 13, 2022 (original Korean document)
2006	Certified English translation of Hyosung Invalidation Trial Petition, dated Apr. 13, 2022
2007	RESERVED
2008	RESERVED
2009	Exhibit of Defendant Hyosung Advanced Materials Corp.'s Invalidity Contentions, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Mar. 17, 2025), Dkt. No. 146-7
2010	Patent L.R. 4-3 Joint Claim Construction and Prehearing Statement, <i>Kolon Industries, Inc. v. Hyosung Advanced Materials Corp. et al.</i> No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Feb. 20, 2025), Dkt. No. 133
2011	RESERVED
2012	RESERVED

Exhibit	Description
2013	RESERVED
2014	Letter from Kolon Industries, Inc. to Hyosung Advanced Materials, dated Feb. 4, 2021 (original Korean document)
2015	Certified English translation of Letter from Kolon Industries, Inc. to Hyosung Advanced Materials, dated Feb. 4, 2021 (certified English translation)

I. Introduction

Patent Owner Kolon Industries, Inc. (“Kolon” or “Patent Owner”) respectfully submits that the Director should exercise discretion to deny institution of the Petition filed by HS Hyosung Advanced Materials Corp. (“Hyosung” or “Petitioner”). In particular, the following three bases strongly support discretionary denial of institution.

First, the Director should exercise discretion to deny the Petition under 35 U.S.C. § 325(d) because Petitioner relies on art cited during prosecution to raise substantially the same arguments already addressed and overcome during prosecution of the challenged patent, U.S. Patent No. 9,789,731 (“’731 patent”). The Petition’s Grounds rely on Tamura (Grounds 1-3) and Chung (Grounds 4-5) for most limitations of the independent claims, but both were disclosed to the Office and considered by the examiner during prosecution. Further, Petitioner’s unpatentability arguments for critical claim features citing Tamura and Yokokura are substantially the same as those the examiner repeatedly raised based on Baldwin and ultimately withdrew. Petitioner’s presentation of the same art and substantively the same arguments already addressed and overcome during prosecution, under the guise of a limited set of facially “new” references, warrants denial under 35 U.S.C. § 325(d).

Second, the Director should exercise discretion to deny institution under 35 U.S.C. § 314(a) and the *Fintiv* factors. Rather than efficiently choose the PTAB to

determine validity early in the parties' dispute, Petitioner unjustly sat on its hands and did not file its Petition until the eve of the statutory deadline, causing undue prejudice to Patent Owner. Not surprisingly, during Petitioner's unexplained delay, the parties made significant progress in the parallel litigation, including substantial fact and document discovery, the completion of infringement contentions, invalidity contentions, and the filing of a Joint Claim Construction Statement. Petitioner then leveraged its last-minute Petition to argue for and secure a stay of the litigation, further delaying Patent Owner's ability to obtain relief from Petitioner's infringement of Patent Owner's intellectual property rights.

Worse, though Petitioner had more than ample time to develop its unpatentability arguments and evidence, the Petition facially lacks merit, as will be further detailed in Patent Owner's forthcoming Preliminary Response. For example, as particularly relevant to *Fintiv* Factor 6 as well as factors outlined in the March 26, 2025 Memorandum by the Acting Director addressing "Interim Processes for PTAB Workload Management" ("Process Memo"), the Petition relies heavily on an entirely conclusory expert declaration that merely parrots Petitioner's attorney arguments to try to fill in critical missing limitations. This conclusory expert testimony does not deserve weight under the Board's rules and precedent. In addition, Petitioner has raised multiple indefiniteness arguments in the District Court

that can be addressed only by that Court, suggesting the PTAB is not an appropriate forum to fully address the '731 patent's validity.

Additionally, Patent Owner has a settled expectation that the '731 patent is valid that should not be disturbed. Petitioner's actions warrant discretionary denial because Patent Owner warned Petitioner against infringing the '731 patent and its foreign counterparts as early as February 2021. Petitioner raised validity challenges against the Korean counterpart of the '731 patent in another forum years ago based on references it presents again here. Yet Petitioner waited almost four years, until the eve of the statutory bar, to file its Petition against the '731 patent. Patent Owner also has compelling economic interests in seeking redress to Petitioner's longstanding infringement of the '731 patent.

In sum, Petitioner asks the Board to institute review of a last-minute Petition with arguments that recycle the same subject matter covered during prosecution, with the Petition's main evidence being an expert declaration that parrots Petitioner's attorney arguments word-for-word to try to fill in missing limitations. Such a deficient Petition does not merit occupying the Board's finite resources, and accordingly the Director should exercise discretion to deny institution of the Petition.

II. Overview Of The '731 Patent And The Prior Art Relevant To Discretionary Denial¹

A. The '731 Patent (Ex. 1001)

The '731 patent, entitled “Hybrid Fiber Cord and Method for Manufacturing the Same,” discloses a hybrid fiber cord “comprising a nylon filament and an aramid filament, the cord having more uniform physical properties and better strength and fatigue properties and being able to be made more easily than the conventional hybrid fiber cords such that it can be used to make an ultra high performance tire,” and a corresponding manufacturing method. '731 patent, Title, Abstract.²

Conventional hybrid fiber cord and methods of manufacturing it faced significant problems, including variations in physical properties, unstable structure, and insufficient strength and fatigue resistance. '731 patent, 2:45-3:2. The '731 patent addresses these and other problems to create hybrid fiber cord that “can be used to make an ultra high performance tire.” *Id.*, 2:49-54. In particular, the '731 patent describes a two-ply hybrid fiber cord made with a nylon primarily-twisted yarn and an aramid primarily-twisted yarn that have identical twist number (twists

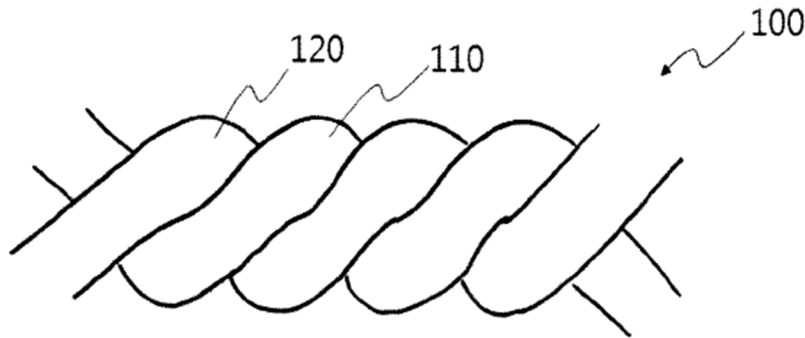
¹ Summaries of the additional prior art references in the Petition will be included in Patent Owner's forthcoming Preliminary Response.

² Emphasis added throughout unless otherwise noted.

per unit length) and identical structures with each other, as shown in Figure 2 below.

Id., 3:6-13, cl. 1.

FIG. 2



Id., Fig. 2. The '731 patent notes that the inventive hybrid fiber cord has “improved strength and fatigue resistance[,] which is useful for the cap ply of the tire for high speed driving.” *Id.*, 3:43-47. Specifically, the '731 patent describes and claims a two-ply hybrid fiber cord with a “strength retention rate of 80% or more after the disc fatigue test performed according to JIS-L 1017 method of Japanese Standard Association.” '731 patent, cls. 1, 4, 4:45-48.

B. Tamura (Exs. 1005 and 1006)

Tamura, entitled “Large Diameter Rubber Hose” (Ex. 1006, Title), was disclosed to the Office by Patent Owner in an Information Disclosure Statement and appears in the file history of the '731 patent (*see* Ex. 1002, 208, 318-31). Tamura discloses a method of manufacturing a “large-diameter rubber hose” using “a composite fiber of aramid fiber and nylon fiber.” Ex. 1006, Abstract, cls. 1-7.

However, Tamura does not include the word “tire” in its disclosure, and does not suggest its large-diameter rubber hose teachings apply to tires. *See id.*

After describing the manufacture of its fiber for a large-diameter rubber hose, Tamura describes various properties of this fiber, and as relevant to the Petition's analysis, discloses pulling tests to evaluate tensile force and elongation values after immersion in adhesive and heat-treating. Ex. 1006, [0034]. Tamura explains that its test is performed “on one fiber cord at a gripping distance of 25 cm and a pulling speed of 30 cm/min.” *Id.* After vulcanization, the fiber specimen is also tested for “[s]trength retention rate after buckling” by placing it on a pulley and subjecting it to a bending test for 200,000 times using a load of 5% breaking force. *Id.*, [0035]. Then, the force is measured to calculate the retention rate after buckling. *Id.*

C. Baldwin (Ex. 1007)

Baldwin, entitled “Tire Cord Reinforcement” (Ex. 1007, Title), was disclosed to the Office by Patent Owner in an Information Disclosure Statement and appears in the file history of the '731 patent (*see* Ex. 1002, 474) and the examiner relied on Baldwin in two Office Actions during prosecution (*see infra* § III). Baldwin discloses “[a] composite cable” “suitable for uses as a reinforcement in an aircraft tire.” Ex. 1007, Title, Abstract. Baldwin discloses that “[t]he cable is formed of an aramid yarn and a nylon yarn cabled together,” and discloses specific linear densities

for the aramid and nylon yarns. *Id.*, Abstract. Baldwin discloses “dynamic tire performance data” after use on aircraft takeoffs. *Id.*, [0068].

D. Chung (Exs. 1012 and 1019)

Chung, entitled “Hybrid Tire Cord and a Method for Manufacturing the Same” (Ex. 1012, Title), was disclosed to the Office by Patent Owner in an Information Disclosure Statement in the file history of the '731 patent (*see* Ex. 1002, 474, 540-49). Chung discloses “a hybrid tire cord in which nylon filaments and aramid filaments are combined at a weight ratio of 10:90 to 90:10 and then formed into 2 or 3 plies at a weight ratio of 2:1 to 1:2, and a method for manufacturing the same.” Ex. 1012, 2. Chung discloses “tensile strength” and “elongation at break” properties for various embodiments. *Id.*, 9.

E. Yokokura (Ex. 1014)

Yokokura, entitled “Pneumatic Tire,” discloses a tire cord made with para-aramid cords. Ex. 1014, Title, Abstract. Examples in Yokokura's Table 5 show that the tire cords are made with multiple cords of aramid fiber. *Id.*, Table 5.

Yokokura discloses a “[d]riving [t]est on a [d]rum” to measure cord properties after a simulated driving environment. Ex. 1014, [0062]. Specifically, Yokokura discloses pressurizing each sample tire at room temperature “until the internal pressure reached 294 kPa (3.0 kg/cm²), allowed to stand for 24 hours, and then adjusted in terms of pneumatic pressure once again.” *Id.*, [0063]. Yokokura

specifically notes that “[u]nder a load as twice heavy as the load specified in JIS, the tire was allowed to wheel at 60 km/h on a drum having a diameter of approximately 3 m until the travel distance reached 20,000 km.” *Id.* “After this driving test, each cord was removed from the corresponding tire and then evaluated for strength in accordance with JIS L 1017.” *Id.*, [0064].

III. The Director Should Exercise Discretion To Deny Institution Under Section 325(d)

Section 325(d) authorizes the Director not to institute review if the challenge to the patent is based on “substantially the same prior art or arguments” previously presented to the Office. 35 U.S.C. § 325(d); *see also* 37 C.F.R. § 42.4(a). Under § 325(d), the Board follows a two-part framework:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”).

Specifically, the Director considers the following non-exclusive factors:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;

- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

See Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton*”); *see also Advanced Bionics*, Paper 6 at 9, n.10.

The *Advanced Bionics* framework and *Becton* factors strongly support discretionary denial here. Petitioner's main references, including Tamura, Chung, and Baldwin, were cited or discussed during prosecution. Though Yokokura was not cited, it is cumulative of Tamura and Baldwin with respect to the relevant claim features. Specifically, Petitioner presents substantially cumulative arguments alleging disclosure of the claimed strength retention rate through Tamura and Yokokura as the examiner alleged were found in the Baldwin reference during prosecution. But Baldwin was overcome during prosecution, and Tamura and Yokokura have the same failings. Moreover, and importantly, Petitioner makes no showing that the examiner materially erred. Thus, institution should be denied under § 325(d).

A. *Advanced Bionics* Step 1 (*Becton Factors* (a), (b), And (d)): Substantially The Same Art And Argument Was Previously Presented To The USPTO

The Petition raises two sets of grounds based on different primary references. The first set (Grounds 1-3) is based on Tamura, Baldwin, and Baek, and the second set (Grounds 4-5) is based on Chung, Harikae, and Yokokura. Petitioner acknowledges that “Tamura and Chung were cited in Patent Owner’s information disclosure statements,” and Baldwin was relied on during prosecution. Pet. 87-88; *see also, e.g.*, Ex. 1002, 208 (IDS listing Tamura), 318-31 (Tamura), 474 (IDS listing Chung and Japanese counterpart to Baldwin), 540-49 (Chung), 505-39 (Japanese counterpart to Baldwin), 193 (examiner’s citation to Baldwin). And while Petitioner argues that the examiner did not review Barnes, Buchanan, Harikae, Yokokura, and Rowan, its arguments about those references are not materially different from the arguments rejected during prosecution. Pet. 87-88. None of Petitioner’s Grounds raise arguments different from those already considered and rejected during prosecution.

Challenging the claims based on Tamura and Chung is, by itself, “sufficient to satisfy the first part of the *Advanced Bionics* framework” and the Director may move on to consider the second part of *Advanced Bionics*. *Ecto World LLC v. RAI Strategic Holdings Inc.*, IPR2024-01280, Paper 13 at 4 (PTAB May 19, 2025)

(precedential).³ Nevertheless, below Patent Owner addresses the arguments made by the examiner and Patent Owner during prosecution, prior to addressing Petitioner's failure to demonstrate error (*see infra* § III.B.), because it is instructive to demonstrate how the Petition is the prototypical scenario for discretionary denial under § 325(d).

During prosecution of the '731 patent, the examiner raised Baldwin and specifically found the '731 patent claims patentable over Baldwin's teachings. Initially, the examiner found that Baldwin teaches a hybrid fiber cord made of an aramid primarily twisted yarn and a nylon primarily twisted yarn that are secondarily twisted together. Ex. 1002, 63, 193. Based on Baldwin's disclosures, the examiner rejected the claims and twice alleged that "the ... strength retention" recited in then-dependent claim 4 was a "resultant propert[y] of the specific materials in a specific orientation," "which Baldwin teaches." *Id.*, 63-64; 193-94.

In response to the examiner's final rejection, Patent Owner amended the independent claims to incorporate the strength retention rate limitation, and argued to the examiner that "Baldwin is silent as to a strength retention rate of the

³ To the extent that Petitioner uses its Opposition to argue material error exists, or that *Ecto World* represents a change in applicable precedent, Patent Owner submits such an argument would constitute good cause to authorize a Patent Owner Reply.

secondarily-twisted yarn.” Ex. 1002, 30. That is, Patent Owner argued the claimed strength retention rate was not anticipated or rendered obvious by Baldwin, and the examiner was persuaded and allowed the claims. *Id.*, 7-11, 30-31.

Petitioner's arguments, however, attempt to recycle the same argument overcome during prosecution. Petitioner argues that Tamura and Yokokura disclose or render obvious the claimed strength retention rate. Pet. 34-37, 75-77. But Petitioner's arguments about those two references are ultimately no different than those already addressed and overcome by Patent Owner in addressing Baldwin, and thus fails for the same reason. All three references are silent about the claimed “strength retention rate ... after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association.” ’731 patent, cls. 1, 4.

1. Petitioner's Grounds 1-3 raise substantively the same argument addressed during prosecution

As for Petitioner's first set of Grounds, Tamura, like Baldwin, is silent on the claimed “strength retention rate ... after a disc fatigue test ... performed according to JIS-L 1017.” ’731 patent, cls. 1, 4. The only disclosure in Tamura that Petitioner identifies involves entirely different tests—“gripping distance” and “pulling speed” related tests, and a “strength retention rate after **buckling**” test—not the “disc fatigue test ... performed according to JIS-L 1017 method of Japanese Standard Association” that the ’731 patent claims require. Tamura (Ex. 1006), [0034]-[0035].

Rather than address the claim requirement of a “strength retention rate” in a “**disc fatigue test** ... performed according to JIS-L 1017,” Petitioner seeks to leverage Tamura’s broad discussion of JIS-L 1017 and improperly assumes that the specific test required by the claims is found in Tamura. It is not. JIS-L 1017 (Petitioner’s Exhibit 1036) includes many tests, only one of which is titled “Fatiguing strength with disc-type tester (Goodrich method)”—Section 2.2.2 referred to as “Informative reference 1” describing “typical examples of test methods for ... fatiguing strength ... carried out for tire cord.” Ex. 1036, 28, 20; *see also* ’731 patent, 9:49-10:3.

To argue that Tamura discloses the claimed strength retention rate after a JIS-L 1017 disc fatigue test, Petitioner first points to Tamura’s paragraph 34 (Pet. 35). This paragraph has nothing to do with strength retention rate in a JIS-L 1017 disc fatigue test. The paragraph appears in Tamura’s description of its “adhesive heat-treated piece” including its “Tensile force ... and elongation.” Tamura, [0034]. It states: “In accordance with JIS L1017, tests were carried out on one fiber cord at a gripping distance of 25 cm and a pulling speed of 30 cm/min, and the force and elongation at break were measured.” *Id.* A brief review of Exhibit 1036, the JIS-L 1017 document filed by Petitioner, reveals that these parameters are mentioned in Section 7.5 of JIS-L 1017. As shown below, Section 7.5, entitled “Breaking strength and elongation percentage,” includes those identical parameters discussed in

Petitioner's cited portion of Tamura—a gripping distance of 25 cm and pulling speed of 30 cm/min—and indicates that the “Type of tester” is a “Constant-rate extension type,” not a “disc-type tester” as the '731 patent claims require. Ex. 1036, 8.

7.5 Breaking strength and elongation percentage The test of breaking strength and elongation percentage shall be as follows.

- (1) **Test in standard condition** Apply an initial tension to the specimen taken as shown in 5. so as not to change twist number, and carry out the test under the tensile condition shown in Table 1. Measure the tension applied to specimen when the specimen is broken to the nearest $\frac{1}{2}$ of the smallest graduation, concurrently measure elongation to the nearest 0.1 cm, and calculate the **breaking strength and elongation percentage** in the standard condition according to the following formulas. Try this test 10 times, obtain their average, and round it off to get the first decimal place according to JIS Z 8401. When other breaking test conditions than those in Table 1 are employed, annex the condition.

Table 1. Tensile test condition

Type of tester	Distance between grips	Tension speed
Constant-rate extension type	25 cm	30 ± 2 cm/min

Id. (annotated). As this passage discusses, this tests for “breaking strength and elongation percentage”—it is not a fatigue test at all, let alone the specific test that the claims require.

Petitioner next cites Tamura's paragraph 35, which discusses “properties of the present invention after vulcanization” including “[s]trength retention rate after buckling” evaluated by a “bending test.” Pet. 36 (citing Tamura, [0035]). But Tamura's discussion of this test does not mention JIS-L 1017, much less any “disc fatigue test.” *See* Tamura, [0035]. Nor does Petitioner's expert offer any evidence

to suggest that Tamura's "bending test" is the recited "disc fatigue test." *See generally* Ex. 1003.

Thus, just as Baldwin failed to disclose the "strength retention rate ... after a disc fatigue test ... performed according to JIS-L 1017," Tamura likewise fails to disclose this feature. Like Baldwin, Tamura instead discloses other properties, such as breaking strength and elongation, based on other tests. *Compare* Tamura, [0034] (breaking strength and elongation percentage), *with* Baldwin (Ex. 1007), [0064] ("break strength" and "elongation at break"); *compare* Tamura, [0035] ("bending test"), *with* Baldwin, [0068] ("[d]ynamic fatigue resistance"). In this respect, Tamura is substantially the same as Baldwin.

It is unsurprising that Tamura uses different tests than the '731 patent for measuring the strength retention rate, as Tamura is directed to "a large-diameter rubber hose," (*see* Tamura, Abstract, cls. 1-7) not a hybrid fiber cord for making ultra high-performance tire (*see* '731 patent, Abstract, 2:49-61). Indeed, Tamura does not mention the word "tire" once. *See generally* Tamura. Petitioner provides no reason why a skilled artisan would have considered the claimed hybrid fiber cord properties in the '731 patent obvious in view of Tamura's disclosure of properties of a rubber hose. *See Apple Inc. v. INVT SPE LLC*, 851 F. App'x 200, 202-03 (Fed. Cir. 2021) (affirming Board's finding of no motivation to combine where, although the references "both involve measuring transmission power, they do so for different

reasons, on different time scales, and compare the results to different thresholds”); *Polygroup Ltd. MCO v. Willis Elec. Co.*, 759 F. App'x 934, 942 (Fed. Cir. 2019) (affirming the Board's finding of no motivation to combine where one of the references did not relate to the relevant field of “artificial trees or decorative lighting” and was thus not analogous art, so there was not a motivation to combine the references). Indeed, Baldwin is superior to Tamura in this respect, at least addressing fatigue of a tire. Baldwin, [0068].

Accordingly, with respect to the critical claim feature argued to overcome Baldwin—“a strength retention rate of 80% or more after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association”—Tamura is at best cumulative to the examiner's consideration and reliance on Baldwin.

2. Petitioner's Grounds 4-5 raise substantively the same argument addressed during prosecution

Petitioner's arguments in its second set of Grounds fare no better because Petitioner relies on Yokokura for the claimed strength retention rate determined using the JIS-L 1017 disc fatigue test, but (like Baldwin and Tamura) Yokokura is also silent on this feature.⁴ Yokokura discloses a “Driving Test on a Drum” that

⁴ Petitioner turns to Yokokura “[t]o the extent Patent Owner argues Chung does not teach” the recited strength retention rate according to the JIS-L 1017 disc fatigue

includes creating sample tires pressurized at room temperature and subjecting the tire to “a load as twice heavy as the load specified” by JIS-L 1017. Yokokura (Ex. 1014), [0063]-[0063]. The tires are then allowed to wheel (rotate) at 60 km/h on a drum until the travel distance reaches 20,000 km. *Id.* Finally, after this driving test, the strength is measured according to JIS-L 1017. *Id.*, [0064].

But this test in Yokokura is vastly different from the JIS-L 1017 disc fatigue test the claims require. Yokokura does not specify the particular section of JIS-L 1017 that it refers to and Petitioner does not attempt to fill in this critical information. Further, Yokokura's test is for a sample tire, while the disc fatigue test detailed in the specification and claims involves insertion of a rubber test piece based on tire cord (*see, e.g.*, '731 patent, 9:50-52) (not a tire), where the test piece is inserted into a rubber block and is fatigued by being extended and compressed over a period of time. '731 patent, 9:49-10:3; JIS-L 1017 (Ex. 1036), 28-29 (§ 2.2.2). Thus, Yokokura, just like Baldwin, contains some disclosure about fatigue testing related to tires, but nothing about any strength retention rate determined using the JIS-L 1017 disc fatigue test that the '731 patent claims require. *Compare* Yokokura,

test. Pet. 75. But Petitioner cites nothing in Chung that teaches the test at all; Chung does not mention JIS-L 1017, and Petitioner does not argue that the test is somehow rendered obvious by Chung (despite Chung's silence).

[0063]-[0065] (reporting a “distance limit” after a “driving test”), *with* Baldwin, [0068] (“[d]ynamic fatigue resistance”).

To the extent that Petitioner’s expert testimony is meant to fill in the missing claim requirement of strength retention rate after JIS-L 1017 disc fatigue testing, his testimony is due little, if any, weight. The Petition attempts to equate the claimed disc fatigue test with Yokokura’s driving test on a drum and further tries to brush aside the criticality of this limitation. Specifically, the Petition alleges “performing a disc fatigue test (i.e., driving test on a drum) is according to the JIS-L 1017 method of Japanese Standard Association to measure a strength retention rate is old and well known within the art,” and “the [*sic*] disk fatigue test process set forth in JIS-L 1017 is well within the skill set of an [*sic*] POSITA.” Pet. 61 (citing Ex.1003, ¶141). Dr. Rust’s declaration does no more than parrot these statements and adds no reasoning or evidence to support these bare conclusions. Ex. 1003, ¶141.

Dr. Rust’s conclusory testimony regurgitating Petitioner’s assertions merits little, if any, weight. *See Mirror Worlds Techs, LLC v. Meta Platforms, Inc.*, 122 F.4th 860, 875 (Fed. Cir. 2024) (“unsupported expert opinions do not create a genuine issue of material fact”); *K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1366 (Fed. Cir. 2014) (“the Board cannot accept general conclusions about what is ‘basic knowledge’ or ‘common sense’ as a replacement for documentary evidence for core factual findings in a determination of patentability”); *Xerox Corp.*

v. Bytemark, Inc., IPR2022-00624, Paper 9 at 15-17 (PTAB Aug. 24, 2022) (precedential) (accordg “little weight” to testimony that contains a verbatim restatement of a petition’s conclusory assertions without additional supporting evidence or reasoning, also noting it is “particularly problematic in cases where, like here, expert testimony is offered not simply to provide a motivation to combine prior-art teachings, but rather to *supply a limitation missing from the prior art*”).

In any event, whether a POSITA would have known how to perform the JIS-L 1017 test (as Petitioner and Dr. Rust assert) has nothing to do with the fact that Yokokura, like Baldwin, is silent about any strength retention rate determined via a disc fatigue test.

Thus, Petitioner’s Ground 4 presents substantially the same argument for disclosure of the claimed strength retention rate as the examiner did during prosecution. There are notable “similarities ... between the asserted art and the prior art involved during examination” (*Becton* factor (a)), “the asserted art and the prior art evaluated during examination” are cumulative at least with respect to this limitation (*Becton* factor (b)), and there is substantial “overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art” (*Becton* factor (d)). The first part of *Advanced Bionics* therefore is satisfied.

B. *Advanced Bionics* Step 2 (*Becton* Factors (c), (e), And (f)): Petitioner Has Made No Showing Of Material Examiner Error

The second prong of *Advanced Bionics* is also satisfied because Petitioner does not show that the Examiner erred in a manner material to patentability. Pet. 87-88. It is the Petitioner's burden to affirmatively demonstrate that the Office committed material error in issuing the challenged patent, but Petitioner fails to do so. *See* Pet. 87-88; *see also e.g., Advanced Bionics*, Paper 6 at 9 ("At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown."); *Ecto World*, IPR2024-01280, Paper 13 at 5-6 ("[A] petitioner must provide an analysis even when the asserted prior art is on an IDS, but the Examiner did not apply the reference," and "if the Examiner applied the asserted prior art or substantially the same prior art during examination, then a petitioner must demonstrate that, for example, the previously presented art teaches the limitations of the challenged claims, and that no reasonable examiner could have found otherwise.").

Here, Petitioner does not explain how the examiner's allowance over Baldwin's failure to disclose the recited test was erroneous in any respect. Petitioner merely states that "Tamura ... and/or Yokokura clearly teach these limitations and thus overcome any purported deficiencies the examiner may have identified in connection with Baldwin." Pet. 88. But Petitioner does not show error; rather, it

does nothing more than to vaguely cite its unpatentability arguments,⁵ which, as Patent Owner has shown above, are plainly wrong because Tamura and Yokokura suffer from precisely the same deficiencies as Baldwin. Thus, there is no tenable evidence or argument that the prior art is different from the art the examiner applied or includes specific teachings that “impact patentability of the challenged claims.” *Ecto World*, IPR2024-01280, Paper 13 at 5. The Examiner had Tamura in hand, yet Petitioner does not argue that the Examiner overlooked any “teachings in the prior art on the IDS.” *Id.* at 5-6. Further, the examiner applied Baldwin, which is “substantially the same prior art” as Tamura and Yokokura with respect to the claimed strength retention rate, but Petitioner has not—and cannot—show that the examiner was incorrect in finding Baldwin to be silent on the claimed strength retention rate, just as Tamura and Yokokura are. *Id.*

The Board consistently exercises its discretion to deny institution when, as here, a petitioner does not adequately address whether the Office materially erred. *See Wolfspeed, Inc. v. Trs. of Purdue Univ.*, IPR2022-00761, Paper 9 at 14-15 (PTAB Nov. 8, 2022) (exercising its discretion under § 325(d) to not institute IPR

⁵ Petitioner's approach “improperly shifts Petitioner's burden to demonstrate material error onto the Board” (and indeed, onto Patent Owner to rebut underdeveloped contentions). *Ecto World*, IPR2024-01280, Paper 13 at 6 n.2.

because the proffered art was cumulative to or substantially the same as art previously presented to the Office and petitioner did not address whether the Office materially erred); *see also Darfon Elecs. Corp. v. Shipman*, IPR2022-01008, Paper 11 at 14 (PTAB Dec. 2, 2022) (same). Further, any “additional evidence and facts presented in the Petition” do not “warrant reconsideration of the prior art or arguments” (*Becton* factor (f)) because that additional evidence (Dr. Rust’s declaration) is merely conclusory repetition of Petitioner’s deficient arguments, as detailed above.

Thus, because the Petition presents only the same or substantially the same prior art and arguments previously presented during prosecution, and because Petitioner has failed to make any sufficient showing of error by the Patent and Trademark Office, the Director should exercise discretion and deny institution under 35 U.S.C. § 325(d). The Board should not dedicate resources to Petitioner’s recycling of old ground and should instead defer to the examiner’s correct previous evaluation of the same (or more relevant) evidence.

IV. The *Fintiv* Factors Favor Discretionary Denial

The Petition should also be denied pursuant to 35 U.S.C. § 314. Section 314(a) states that the “Director *may not* authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition ... shows that there is a reasonable likelihood that the petitioner would

prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). In determining whether to exercise its discretionary power under § 314(a), the balance of six factors, set forth in *Apple Inc. v. Fintiv, Inc.*, is evaluated:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petition and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board's exercise of discretion, including the merits.

IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”).

The *Fintiv* factors favor discretionary denial in this proceeding. First, Petitioner unreasonably delayed its filing of the IPR petition until the eve of the statutory deadline, so the parties invested substantially in the parallel proceeding during Petitioner's delay. Second, Petitioner relies heavily on an expert declaration that largely parrots Petitioner's attorney arguments. Third, Petitioner's multiple indefiniteness arguments, which cannot be addressed by the Board, suggest validity challenges as a whole are better left to the District Court. Thus, the Petition should be denied.

A. *Fintiv* Factors 1 And 2 Are Outweighed By Other Considerations

The first and second *Fintiv* factors consider whether the court granted a stay and the proximity of the Court's trial date to the Board's projected statutory deadline for a final written decision.

The District Court litigation is stayed; however, this fact is not dispositive. *See* Ex. 2002 (*Kolon Indus., Inc. v. HS Hyosung Advanced Materials Corp. and HS Hyosung USA, Inc.*, No. 8:24-cv-00415-JVS-JDE (C.D. Cal. Apr. 4, 2025), Dkt. 149) (order granting Petitioner's motion to stay). The stay was granted pending resolution of the present Petition and two other Petitions filed by Petitioner,⁶ and the District Court noted that "if the PTAB does not institute review, delay due to an unnecessary stay will be minimal." Ex. 2002, 5-7 (*Kolon*, No. 8:24-cv-00415, Dkt. 149). So, if the Petition (and/or others filed by Petitioner) is denied, it is likely that the District Court case would resume and that a trial would be held at or before a final written decision would be due. Prior to the stay, the trial date in the District Court was set for February 2026. *See* Ex. 2003, 1 (*Kolon*, No. 8:24-cv-00415, Dkt. 68). The Board's Institution Decision in the present IPR is not due until October 2025, and if the Petition is instituted, the Board's projected statutory deadline for a

⁶ Petitioner filed two other IPRs against Patent Owner's patents from the same District Court litigation. *See* IPR2025-00663, IPR2025-00664.

final written decision is not until October 2026. *See* 37 C.F.R. §§ 42.100(c), 42.107, 42.108; 35 U.S.C. § 314(b). Thus, the original trial date in the District Court will be eight months before the Board's projected deadline for a final written decision. And even if the District Court schedule were extended for a few months because of the current stay, the District Court would hold trial before the Board would issue a final determination in this proceeding.

Further, Factors 1 and 2 represent only two “non-dispositive factors,” while the Board must weigh all factors “as part of a balanced assessment of all relevant circumstances of the case, including the merits.” *Fintiv*, Paper 11 at 5 (internal quotation marks omitted).

B. *Fintiv* Factor 3 Supports Denial Because Petitioner Unreasonably Delayed Its Filing And The Parties Have Substantially Invested In Parallel Litigation

Fintiv Factor 3 relates to both the timing of the Petition and the degree of investment by the parties and the District Court in any parallel proceeding. *Fintiv*, Paper 11 at 9-12. Here, Petitioner delayed filing its Petition until the eve of the statutory deadline, yet fails to explain the delay.⁷ Because of Petitioner's delay, the

⁷ Petitioner admits that Hyosung USA, Inc. (now HS Hyosung USA, Inc.) (“HUSA”) is a real party-in-interest (“RPI”). Pet. 88. The one-year deadline for Petitioner to

parties invested substantial resources litigating in District Court, including preparing for claim construction.

The AIA was meant to provide an efficient forum for parties to resolve validity disputes, but Petitioner's litigation strategy has focused on delaying the District Court litigation rather than efficiently resolving any dispute about the '731 patent's validity. First, Petitioner has known of Tamura and Chung, its chosen primary references in this Petition (*see* Pet. 19), and other references in the Petition such as Rowan (*id.*), as early as April 2022 when Petitioner relied on Tamura, Chung, and Rowan⁸ to challenge the validity of the Korean counterpart of the '731 patent at the Korean Intellectual Property Office ("KIPO"). Exs. 2005 (original), 2006 (translation) at 17, 25, 57. Petitioner cited these same references in its invalidity contentions in the District Court litigation in December 2024. *See* Ex. 2009 at 8-11, 15-19, 25-27.

file an IPR started on February 29, 2024, when HUSA, its RPI, was served with the complaint. *See* 35 U.S.C. § 315(b); Ex. 2004 (*Kolon*, No. 8:24-cv-00415, Dkt. 15).

⁸ In the Korean petition, Petitioner relied on Rowan (U.S. Pat. App. Pub. No. 2003/0060540, "Rowan 540") as a reference material. Ex. 2006 (translation) at 57. Rowan in the present Petition (U.S. Pat. App. Pub. No. 2005/0249949) is a division of Rowan 540, sharing the same figures and specifications.

The only reference that Petitioner cites as a prior art reference for the first time in the Petition is Buchanan (Ex. 1010), but Petitioner only relies on Buchanan as a secondary reference in Grounds 3 and 5, arguing that dependent claim 5 of the '731 patent is rendered obvious. *See* Pet. 51-55, 83-84. That fails to explain Petitioner's waiting until the statutory deadline—despite knowing its primary references for years—because the combinations used need not be identical between parallel proceedings if there is nonetheless “substantial overlap.” *See Apple Inc. v. Optis Cellular Tech. LLC*, IPR2020-00465, Paper 13 at 20-21 (PTAB Sept. 17, 2020) (Factor 4 favored discretionary denial as “substantial overlap of issues concerning the prior art” existed, because even though “the combinations of four references” Petitioner used in the District Court and in the petition differed, “two of the references, including the primary reference . . . , are the same in both combinations.”). Petitioner waited until the one-year deadline to file its Petition, almost three months after the invalidity contentions were served in the District Court litigation and almost three years after raising the same primary references against the Korean counterpart to the '731 patent.

It is hard to fathom why Petitioner would wait until the one-year deadline except to try to obtain a tactical advantage. *See Next Caller Inc. v. TrustID, Inc.*, IPR2019-00961, -00962, Paper 10 at 15-16 (PTAB Oct. 16, 2019) (“[Petitioner's] delay in filing the Petition weighs in favor of the Board exercising discretion to deny

institution under § 314.”). Petitioner argues this factor “weighs against denying institution” because it “diligently prepared and filed this Petition well before the statutory deadline,” (Pet. 85) but that argument is both inaccurate and conclusory. Petitioner has failed to provide any explanation of how it was purportedly diligent or even tried to justify waiting until the last minute to file its Petition. *Ericsson Inc. v. Active Wireless Techs. LLC*, IPR2024-00886, Paper 8 at 10-11 (PTAB Nov. 12, 2024) (“Absent argument or evidence supporting Petitioner’s diligence, we are not persuaded that filing the Petition ‘in advance of the statutory deadline’ weighs in favor of institution.”). Factor 3 favors exercising discretionary denial “if the petitioner cannot explain the delay in filing its petition” (*Fintiv*, Paper 11 at 11-12), which is precisely the situation here. Petitioner cannot excuse its delay, and has not even tried to do so.

Worse still, while Petitioner delayed filing this Petition, Petitioner continued to litigate in the District Court. The Board has acknowledged that “notwithstanding that a [challenger] has one year to file a petition, it may impose unfair costs to a patent owner if the petitioner ... waits until the district court trial has progressed significantly before filing a petition at the Office.” *Fintiv*, Paper 11 at 11. That reasoning applies here: because of Petitioner’s delay, the parties made substantial investments in the parallel proceeding. The parties have engaged in three rounds of motions to dismiss at the District Court. Both infringement contentions and

invalidity contentions have been served in September 2024 and December 2024, respectively. The parties have served and responded to more than 400 discovery requests and made multiple rounds of document production. In addition, the parties actively engaged in claim construction by completing claim construction exchanges, culminating in the filing of a Joint Claim Construction and Prehearing Statement. *See* Ex. 2010 (*Kolon*, No. 8:24-cv-00415, Dkt. 133); *Comcast Cable Commc'ns, LLC v. Touchstream Technologies, Inc.*, IPR2024-00325, Paper 13 at 9-10 (PTAB July 26, 2024) (agreeing with the patent owner that the petitioner did not show diligence in filing the petition when it was filed almost seven months after learning of the asserted claims and almost five months after serving its initial invalidity contentions). Had Petitioner expeditiously filed its Petitions, considerable investment in the litigation plainly could have been avoided.

Thus, because Petitioner unreasonably delayed in filing its Petition, resulting in significant investment in the parallel proceeding, this factor heavily supports a denial.

C. *Fintiv* Factor 4 Supports Denial Because Petitioner Presents Arguments That Significantly Overlap With Arguments Presented To The District Court

Significant overlap exists between this Petition and the District Court litigation because “the same or substantially the same claims, grounds, arguments,

and evidence” presented in the District Court litigation are recycled here, which favors denying the Petition. *Fintiv*, Paper 11 at 12.

Petitioner acknowledges that all challenged claims are asserted in the District Court litigation. Pet. 86. Indeed, Petitioner's invalidity contentions in the District Court litigation allege both anticipation and obviousness based on all but one of the references in its Petition. *See* Ex. 2009 (*Kolon*, No. 8:24-cv-00415, Dkt. 146-7, Ex. 6, Hyosung's de-designated invalidity contentions) at 8-11 (listing prior art references), 15-19 (listing prior art references), 25-27 (listing potential obviousness combinations, including based on Tamura and Chung). This “rais[es] the specter of significant overlap and duplication of efforts.” *Samsung Display Co. v. Pictiva Displays Int'l Ltd.*, IPR2024-00855, Paper 12 at 11 (PTAB Nov. 19, 2024) (“factor four favors denial”).

Further, Petitioner has made no case-narrowing stipulations (e.g., a *Sotera*-type stipulation) that might mitigate the overlap—a fact which the Board has acknowledged is “highly relevant.” March 24, 2025 Memorandum regarding “Guidance on USPTO's Recission of ‘Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation’” at 2-3. The Board's FAQ regarding the Interim Processes for PTAB Workload Management (<https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management>) (“FAQ”) states that a “petitioner should file a *Sotera* or *Sand*

stipulation as soon as practicable, so that a patent owner may address the impact of the stipulation in its discretionary denial brief.” FAQ 14. As of this filing, Petitioner has filed no stipulation, and thus Patent Owner cannot address the effect of such a stipulation; if Petitioner offers or files a stipulation after this filing, Patent Owner intends to request a reply brief to address this development. FAQ 2 (“Leave to file further briefing may be permitted by the Director for good cause.”).

D. *Fintiv* Factor 5 Supports Denial Because Petitioner And Real Party-In-Interest Are The Sole Defendants In The Parallel Proceeding

Factor 5 favors discretionary denial. In the District Court litigation, Patent Owner is the Plaintiff and Petitioner is one of the two Defendants. Petitioner admits that the other defendant, HUSA, is a RPI. Pet. 88. Factor 5 thus weighs in favor of discretionary denial because “the petitioner and the defendant in the parallel proceeding are the same party.” *Fintiv*, Paper 11 at 13-14.

E. *Fintiv* Factor 6 Supports Denial Because The Expert Declaration Repeats Attorney Arguments And Petitioner's Indefiniteness Arguments Are Better Left To The District Court

The sixth factor of the *Fintiv* analysis favors denial because the Petition's merits are weak, as Patent Owner will establish more fully in its forthcoming Preliminary Response. See FAQ 25 (“[W]hen filing a brief for discretionary denial, a patent owner may direct attention to an anticipated POPR and evidence for a discussion of the merits.”).

As one example, the weaknesses in Petitioner's arguments are evidenced by its lack of reasoned expert testimony.⁹ The Petition relies on an expert declaration. *See* Pet. and Ex. 1003. But aside from content on the expert's background, materials considered, and discussion of applicable legal standards, the declaration simply parrots the attorney arguments in the Petition, largely using exactly the same wording made in the Petition. Petitioner's technical expert even includes the same legal citations as Petitioner's attorneys who wrote the Petition. The comparison table below shows a few examples, with identical language highlighted.

⁹ Whether considered as part of Factor 6 under the *Fintiv* framework or separately, the Director may consider such additional factors in discretionary denial. *See* Process Memo at 2-3.

Petition 23-25	Rust Decl. (Ex. 1003), ¶¶74-78
<p>A POSITA would have been motivated to combine Tamura's teachings of twisted aramid and nylon yarns having <i>the same twist number</i> and the teachings of Baldwin and Baek disclosing twisted aramid and nylon yarns having <i>identical structures</i> to construct an aramid-nylon hybrid tire cords having aramid and nylon yarns with the same twist number and the same structure. EX1003, ¶¶74-78.</p> <p>...</p> <p>Further, Tamura, Baldwin, and Baek are analogous to each other and to the '731 patent. Each teaches a tire cord comprising a twisted aramid yarn and a twisted nylon yarn that are twisted together to form a hybrid cord. See <i>supra</i> §§VIII.A and IV.C. And each is concerned with improving the strength, reliability, and performance of tires. EX1001, 2:49-54; EX1007, [0003]; EX1008, 4-3.</p>	<p>74. In my opinion, a POSITA would have been motivated to combine Tamura's teachings of twisted aramid and nylon yarns having <i>the same twist number</i> and the teachings of Baldwin and Baek disclosing twisted aramid and nylon yarns having <i>identical structures</i> to construct an aramid-nylon hybrid tire cords having aramid and nylon yarns with the same twist number and the same structure.</p> <p>...</p> <p>78. Moreover, Tamura, Baldwin, and Baek are analogous to each other and to the '731 patent. These references each teach a tire cord comprising a twisted aramid yarn and a twisted nylon yarn that are twisted together to form a hybrid cord. And each is concerned with improving the strength, reliability, and performance of tires. EX1001, 2:49-54; EX1007, [0003]; EX1008, 4-3.</p>
Petition 34-36	Rust Decl. (Ex. 1003), ¶¶102-103
<p>Tamura discloses embodiments wherein the secondarily-twisted yarn coated with the adhesive has <i>a strength retention rate of 80% or more and a dry heat shrinkage of 1.5-2.5%</i>. EX1003, ¶¶101-105. As provided in TABLE 2 below, embodiment 1 of Tamura includes a strength retention rate of 90% and a dry heat shrinkage of 2.5%; and embodiment 2 includes a strength retention rate of 88% and a dry heat shrinkage of 2.4%. Note, to the extent that Patent Owner argues the prior art</p>	<p>102. Tamura describes embodiments wherein the secondarily-twisted yarn coated with the adhesive has <i>a strength retention rate of 80% or more and a dry heat shrinkage of 1.5-2.5%</i>. As provided in TABLE 2 below, embodiment 1 of Tamura includes a strength retention rate of 90% and a dry heat shrinkage of 2.5%; and embodiment 2 includes a strength retention rate of 88% and a dry heat shrinkage of 2.4%. Note, to the extent that Patent Owner argues the prior art</p>

<p>must disclose the entire claimed range, Federal Circuit precedent states otherwise. <i>See, e.g., UCB, Inc. v. Actavis Labs. UT, Inc.</i>, 65 F.4th 679, 687 (Fed. Cir. 2023) (“If the prior art discloses a point within the claimed range, the prior art anticipates the claim.”); <i>Pfizer</i>, 94 F.4th at 1347 (“[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation”).</p>	<p>must disclose the entire claimed range, Federal Circuit precedent states otherwise. <i>See, e.g., UCB, Inc. v. Actavis Labs. UT, Inc.</i>, 65 F.4th 679, 687 (Fed. Cir. 2023) (“If the prior art describes a point within the claimed range, the prior art anticipates the claim.”); <i>Pfizer</i>, 94 F.4th at 1347 (“[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation”).</p>
<p>Tamura further explains that the disclosed strength retention rates were determined <i>after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association</i>, as claimed. Specifically, Tamura teaches that “[i]n accordance with JIS L 1017, tests were carried out on one fiber ... and the force ... [was] measured.” EX1006, [0034]. According to Tamura, the force measured in accordance with JIS L 1017 “was converted from N units to g units,” and the strength (g/d) “was calculated by dividing [the force (in grams)] by the total denier number of the fiber cord.” EX1006, [0034].</p>	<p>103. Tamura further explains that the disclosed strength retention rates were determined <i>after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard Association</i>, as claimed. In particular, Tamura demonstrates that “[i]n accordance with JIS L 1017, tests were carried out on one fiber . . . and the force . . . [was] measured.” EX1006, [0034]. According to Tamura, the force measured in accordance with JIS L 1017 “was converted from N units to g units,” and the strength (g/d) “was calculated by dividing [the force (in grams)] by the total denier number of the fiber cord.” EX1006, [0034].</p>
<p>Petition 59-62</p>	<p>Rust Decl. (Ex. 1003), ¶¶137-141</p>
<p>First, Chung, Harikae, and Yokokura are analogous to the challenged patent and to each other. Chung, Harikae, Yokokura, and the challenged patent are all (i) within the same field of endeavor (i.e., tire reinforcement cords and/or</p>	<p>137. First, Chung, Harikae, and Yokokura are analogous to both the challenged patent and to one another. All four—Chung, Harikae, Yokokura, and the challenged patent—fall within the same field of endeavor, namely, tire</p>

method for making the same) and (ii) reasonably pertinent to the same problem facing the inventors of the '731 patent (i.e., optimizing the performance and physical properties of nylon-aramid hybrid reinforcement cords). *See, e.g.*, EX1001, 2:55-61 (aiming “to provide a method for easily manufacturing a hybrid fiber cord comprising a nylon filament and an aramid filament, which has more uniform physical properties and better strength and fatigue resistance”); EX1012 (aiming “to provide a hybrid tire cord ... having excellent shrinkage force ... [and] high modulus characteristics”); EX1013, [0024] (aim “to provide a single hybrid twisted cord with a good balance of cord properties such as rigidity, fatigue resistance under compression, heat generation properties, and heat shrinkage properties”); EX1014 (Yokokura), [0023] (“provides a pneumatic tire containing a belt-reinforcement layer in the cap/layer structure described above that has high strength, a low modulus of elasticity, and excellent resistance to fatigue, in particular, excellent durability in high-speed driving.”); *supra* §§XI.A.

...

Third, to the extent Patent Owner argues that Chung does not teach that the secondarily-twisted (i.e., s-twisted) yarn has a strength retention rate of 80% or more after a disc fatigue test is performed according to JIS-L 1017 method of Japanese Standard

reinforcement cords and/or methods for manufacturing them. Additionally, they are all reasonably pertinent to the same problem addressed by the inventors of the '731 patent: optimizing the performance and physical properties of nylon-aramid hybrid reinforcement cords. *See, e.g.*, EX1001, 2:55-61 (seeking “to provide a method for easily manufacturing a hybrid fiber cord comprising a nylon filament and an aramid filament, which has more uniform physical properties and better strength and fatigue resistance”); EX1012 (Chung) (aiming “to provide a hybrid tire cord . . . having excellent shrinkage force . . . [and] high modulus characteristics”); EX1013 (Harikae), [0024] (seeking “to provide a single hybrid twisted cord with a good balance of cord properties such as rigidity, fatigue resistance under compression, heat generation properties, and heat shrinkage properties”); EX1014 (Yokokura), [0023] (describing “a pneumatic tire containing a belt-reinforcement layer in the cap/layer structure described above that has high strength, a low modulus of elasticity, and excellent resistance to fatigue, in particular, excellent durability in high-speed driving.”).

...

139. Third, if the Patent Owner argues that Chung does not disclose that the secondarily twisted (i.e., s-twisted) yarn achieves a strength retention rate of 80% or more after undergoing a disc fatigue test according to the JIS-L 1017 method of the Japanese Standard

Association, Yokokura discloses this limitation, and a POSITA would have been motivated to modify the cord of Chung and Harikae in view of Yokokura. As Yokokura explains, “[t]he higher the retention ratio is[,] the better the test result is.” EX1014, [0082]. In addition, according to Kwon, if the strength retention rate of a tire cord does not exceed 90%, “the ability to support the tire is reduced due to deterioration of physical properties during driving, resulting in deterioration of driving performance and, in severe cases, tire rupture.” EX1021, [139].

...

In addition, performing a disc fatigue test (i.e., driving test on a drum) is according to the JIS-L 1017 method of Japanese Standard Association to measure a strength retention rate is old and well known within the art. EX1003, ¶141. Further, the disk fatigue test process set forth in JIS-L 1017 is well within the skill set of an POSITA. EX1003, ¶141. Finally, achieving a strength retention rate of 80% or more would have been a matter of routine optimization, using standard procedures, rendering predictable results. EX1003, ¶141. Indeed, a POSITA would have considered a high strength retention rate to be optimal, and would have tried to attain it via routine experimentation. EX1003, ¶141; EX1014, [0082] (“[t]he higher the retention ratio is[,] the better the test result is”); EX1021, [139] (disclosing that if the strength retention rate of a tire

Association, Yokokura provides this teaching. A POSITA would have been motivated to modify the cord of Chung and Harikae in view of Yokokura. As Yokokura explains, “[t]he higher the retention ratio is[,] the better the test result is.” EX1014, [0082]. Furthermore, Kwon emphasizes the importance of a high strength retention rate, stating that if a tire cord’s strength retention does not exceed 90%, “the ability to support the tire is reduced due to deterioration of physical properties during driving, resulting in deterioration of driving performance and, in severe cases, tire rupture.” EX1021, [139].

...

141. In addition, performing a disc fatigue test (i.e., driving test on a drum) is according to the JIS-L 1017 method of Japanese Standard Association to measure a strength retention rate is old and well known within the art. Moreover, the disk fatigue test process set forth in JIS-L 1017 is well within the skill set of an ordinary artisan. Finally, achieving a strength retention rate of 80% or more would have been a matter of routine optimization, using standard procedures, rendering predictable results. In my opinion, a POSITA would have considered a high strength retention rate to be optimal, and would have tried to attain it via routine experimentation. EX1014 (Yokokura), [0082] (“[t]he higher the retention ratio is[,] the better the test result is”); EX1021 (Kwon), [139] (disclosing that if the strength retention rate of a tire cord does not exceed 90%, “the ability

cord does not exceed 90%, “the ability to support the tire is reduced due to deterioration of physical properties during driving, resulting in deterioration of driving performance and, in severe cases, tire rupture”).	to support the tire is reduced due to deterioration of physical properties during driving, resulting in deterioration of driving performance and, in severe cases, tire rupture”).
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Petitioner effectively seeks to rely on expert testimony that regurgitates its attorney arguments to supplement teachings missing from the references themselves. But as the Board’s precedent holds, such testimony should be accorded (at most) “little weight” because it does nothing but “repeat[], *verbatim*, the conclusory assertion[s] for which it is offered to support.” *Xerox*, IPR2022-00624, Paper 9 at 15-17 (precedential) (emphasis in original); *see also Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000) (“Lack of factual support for expert opinion going to factual determinations, however, may render the testimony of little probative value in a validity determination.”) (quoting *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985)); *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1340-41 (Fed. Cir. 2020) (affirming the Board’s decision upholding a claim as “the Board considered Facebook’s expert’s testimony but determined that it did not add materially to Petitioner’s unpersuasive attorney argument”). Further, Petitioner’s expert testimony is not “focused”—it does not “provide helpful context or ... explain terms of art”; rather,

it simply duplicates the Petition and adds nothing, and so supports that the Director should exercise discretion to deny the Petition. FAQ 21.

Additionally, even if the Petition's deficient prior art analysis is found to meet the threshold for institution, conducting an IPR will not serve as a "true alternative" to validity challenges to the '731 patent. *Motorola Sols. Inc. v. Stellar, LLC*, IPR2024-01205-08, Paper 19 at 3 (PTAB Mar. 28, 2025) (Director review). In particular, though the Petition does not acknowledge this, in the District Court litigation, Petitioner alleges that multiple claim terms in the '731 patent are indefinite. *See Ex. 2010, 17-20, 25-27 (Kolon, No. 8:24-cv-00415, Dkt. 133)*. These terms include those which, as Patent Owner will show in its forthcoming Preliminary Response, are not found in Petitioner's unpatentability grounds and include terms that were added to the claims, resulting in their allowance. The Board cannot resolve issues of indefiniteness; rather, the District Court would have to address these issues, which further supports denial so that all invalidity issues can be efficiently resolved in one forum, rather than piecemeal between here and the District Court. *See, e.g., Arthrex, Inc. v. MedShape, Inc.*, IPR2025-00053, Paper 11 at 14-15 (PTAB Apr. 25, 2025) ("In sum, for some of the Challenged Claims Petitioner identifies issues of indefiniteness in claim construction presented in the Parallel Proceeding that we cannot resolve in this proceeding.... This suggests that even if Petitioner has shown a reasonable likelihood of prevailing ... Petitioner's disputes as they relate to the

Challenged Claims, as a whole, may be more efficiently addressed in the Parallel Proceeding.”); *Nokia of Am. Corp. v. Pegasus Wireless Innovation LLC*, IPR2025-00037, Paper 14 at 13 (PTAB Apr. 25, 2025) (noting that even a timely filed *Sotera* stipulation is not dispositive because the Board “agree[d] with Patent Owner that some issues will remain—the district court will still have to resolve various § 112 issues raised by the Petitioner”).

For example, Petitioner alleges in district court that claim 4’s limitation reciting “secondarily twisting the nylon and aramid primarily-twisted yarns together at a third twist number to produce a ply yarn in such a way that the nylon and aramid primarily-twisted yarns have identical structures with each other” (referred to in the Petition as limitation 4[c]) is indefinite. *See* Ex. 2010, 17-18 (*Kolon*, No. 8:24-cv-00415, Dkt. 133). Limitation 1[c] is similar, and Petitioner’s analysis of limitation 4[c] merely points back to its analysis in limitation 1[c]. *See, e.g.*, Pet. 40. But as Patent Owner will show in its Preliminary Response, for multiple reasons, the Petition’s analysis of this subject matter is insufficient to meet its burden, suggesting the District Court will have to resolve the alleged indefiniteness issue and would be a more efficient forum to resolve validity, while conducting an *inter partes* review trial would unnecessarily burden the Board’s resources.

Given Petitioner’s unreasonable delay in filing the Petition, the weakness of Petitioner’s merits arguments—as shown by Petitioner’s expert’s parroting of

Petitioner's attorney arguments—and the District Court being a more efficient forum to resolve the invalidity issues Petitioner has raised, the Director should exercise discretion to deny institution under 35 U.S.C. § 314(a) and the *Fintiv* factors.

F. *Fintiv* Factor Summary

Based on the factors outlined above, a holistic view of the *Fintiv* factors supports denial of the petition under the Director's § 314(a) discretionary powers.

V. Other Considerations Support Discretionary Denial

The Process Memo further sets forth additional considerations in deciding whether to deny institution, including:

- Whether the PTAB or another forum has already adjudicated the validity or patentability of the challenged patent claims;
- Whether there have been changes in the law or new judicial precedent issued since issuance of the claims that may affect patentability;¹⁰
- The strength of the unpatentability challenge;
- The extent of the petition's reliance on expert testimony;
- Settled expectations of the parties, such as the length of time the claims have been in force;
- Compelling economic, public health, or national security interests; and
- Any other considerations bearing on the Director's discretion.

¹⁰ This factor does not apply as Patent Owner is unaware of any relevant changes in the law or new judicial precedent issued since the issuance of the claims.

Process Memo at 2-3. These considerations support denying the Petition here.

First, “[t]he strength of the unpatentability challenge” and “[t]he extent of the petition’s reliance on expert testimony” favor denying the Petition. Both considerations favor denying the Petition. As discussed above, Petitioner weakly invites the Board to recycle the same ground covered during prosecution and relies extensively on an expert declaration that does nothing but parrot Petitioner’s attorney arguments. Additional failings of Petitioner’s unpatentability challenge will be discussed in the forthcoming Preliminary Response.

Second, the Petition should be denied because of the “[s]ettled expectations of the parties.” Process Memo at 2. Given Petitioner’s earlier challenge to the Korean counterpart of the ’731 patent beginning in April 2022 and the years that have passed since that challenge, Patent Owner’s settled expectation was that the ’731 patent would not be challenged. The “[s]ettled expectations of the parties” should not be disturbed because Petitioner has known about the ’731 patent as early as February 2021, but did not file this Petition until February 2025, at the eve of its statutory filing deadline. *See iRhythm, Inc. v. Welch Allyn, Inc.*, IPR2025-00363, -00374, -00376-78, Paper 10 at 3 (PTAB June 6, 2025) (denying institution because “Petitioner’s awareness of Patent Owner’s applications and failure to seek early review of the patents favors denial and outweighs [other] considerations”). In February 2021, Patent Owner sent Petitioner a letter advising Petitioner of the ’731

patent and other patents owned by Patent Owner, and advised Petitioner against manufacturing hybrid tire cord in a manner that would infringe Patent Owner's patent rights. Exs. 2014 (original), 2015 (translation). Yet despite Petitioner's long awareness of the '731 patent and Petitioner's decision to proceed with manufacturing infringing hybrid tire cord, Petitioner did not file the Petition against the '731 patent until February 28, 2025—over 4 years after Patent Owner's letter. Patent Owner's settled expectation that Petitioner would take no further action relative to the '731 patent long after being informed of the '731 patent should be maintained.

Third, “[c]ompelling economic ... interests” favor denying the Petition. As recognized during the District Court litigation, “[Patent Owner] and [Petitioner] are direct competitors” in the emerging market for two-ply aramid and nylon HTC. Ex. 2002, 6-7 (*Kolon*, No. 8:24-cv-00415, Dkt. 149). Petitioner manufactures and markets an infringing product aimed directly at the same customers Patent Owner serves, and as noted above, Petitioner has known that its conduct infringes Patent Owner's intellectual property rights for years. Granting the Petition will unnecessarily delay Patent Owner in enforcing its intellectual property rights and allow Petitioner to continue to attempt to take business away from Patent Owner and plague the U.S. market with infringing products. Thus, economic interests support denying the Petition.

Fourth, “other considerations bearing on the Director’s discretion” such as Petitioner’s needlessly duplicative grounds support denying the Petition. Petitioner’s use of alternative phrasing (e.g., “Tamura, Baldwin or Baek”) means Petitioner’s purported five Grounds 1-5 are really **fourteen** Grounds 1-14.

Petitioner’s Purported Grounds	Grounds Count
1. Tamura, Baldwin <u>or</u> Baek	1. Tamura, Baldwin 2. Tamura Baek
2. Tamura, Baldwin <u>or</u> Baek, Barnes	3. Tamura, Baldwin, Barnes 4. Tamura, Baek, Barnes
3. Tamura, Baldwin <u>or</u> Baek, Rowan <u>and/or</u> Buchanan	5. Tamura, Baldwin, Rowan 6. Tamura, Baldwin, Buchanan 7. Tamura, Baldwin, Rowan, Buchanan 8. Tamura, Baek, Rowan 9. Tamura, Baek, Buchanan 10. Tamura, Baek, Rowan, Buchanan
4. Chung, Harikae, Yokokura	11. Chung, Harikae, Yokokura
5. Chung, Harikae, Yokokura, Rowan <u>and/or</u> Buchanan	12. Chung, Harikae, Yokokura, Rowan 13. Chung, Harikae, Yokokura, Buchanan 14. Chung, Harikae, Yokokura, Rowan, Buchanan

Pet. 19 (emphases in original).

Patent Owner should not be forced to respond to such an unfocused approach. The Board’s resources are not efficiently utilized by considering such vague assertions of unpatentability, which unduly burden both the Board and Patent Owner. *See Arashi Vision (U.S.) LLC v. GoPro, Inc.*, IPR2024-01434, Paper 9 at 10-11

(PTAB Mar. 31, 2025) (denying institution in part because, although the petition purported to raise six grounds of unpatentability, the Board found they encompassed at least 24 individual challenges, which unduly burdened Patent Owner and “ma[de] inefficient use of the Board’s resources.”).

Thus, additional considerations outlined in the Process Memo support denial of the Petition.

VI. Conclusion

For the foregoing reasons, Patent Owner respectfully requests that the Director exercise discretionary powers and decline to institute *inter partes* review of the '731 patent.

Respectfully submitted,

Dated: June 16, 2025

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Patent Owner's Brief on Discretionary Denial complies with the word count limitation of 37 C.F.R. § 42.24 because the Patent Owner's Brief on Discretionary Denial contains 10,440 words using Microsoft Word's counting feature, excluding the cover page, signature block, and the parts of the Patent Owner's Brief on Discretionary Denial exempted by 37 C.F.R. § 42.24.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I certify that on this 16th day of June, 2025, a true and correct copy of the foregoing **Patent Owner's Brief on Discretionary Denial and all Exhibits** were served by electronic mail on Petitioner's lead and backup counsel at the following email addresses:

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