

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REG SYNTHETIC FUELS, LLC,
Petitioner,

v.

NESTE OYJ,
Patent Owner.

IPR2018-01374
Patent 8,742,185 B2

Before RAE LYNN P. GUEST, CHRISTOPHER L. CRUMBLEY, and
AVELYN M. ROSS, *Administrative Patent Judges*.

CRUMBLEY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
Dismissing Motion to Exclude
35 U.S.C. § 318(a)

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, Petitioner has shown by a preponderance of the evidence that claims 6, 7, 10, 20, and 24 of US Patent No. 8,742,185 B2 (“the ’185 patent”) are unpatentable.

A. Procedural History

REG Synthetic Fuels, LLC filed a Petition requesting *inter partes* review of claims 1–24 of the ’185 patent (Ex. 1001). Paper 2 (“Pet.”). Neste Oil, Oyj, the assignee of the ’185 patent, filed a Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”). On February 19, 2019, upon consideration of the Petition, the Preliminary Response, and the parties’ evidence, applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review of all challenged claims on all grounds asserted. Paper 11 (“Dec.”).

Following institution of trial, Neste filed a Patent Owner Response (Paper 21, “PO Resp.”), REG filed a Reply (Paper 25, “Pet. Reply”), and Neste filed a Sur-Reply (Paper 30, “Sur-Reply”).

REG relies on the testimony of Dr. Edward L. Sughrue II, and supported the Petition with a Declaration of Dr. Sughrue. Ex. 1002. After institution of trial, Neste took cross-examination of Dr. Sughrue via deposition, and submitted the deposition transcript along with its Patent Owner Response. Ex. 2031. With its Reply, REG submitted a second Declaration from Dr. Sughrue (Ex. 1044), after which Neste again deposed Dr. Sughrue and submitted the transcript with its Sur-Reply. Ex. 2043. REG also submitted with its Reply the Declaration of John C. Staines, Jr.

(Ex. 1045), and Neste deposited Mr. Staines and submitted the transcript (Ex. 2044) with its Sur-Reply.

For its part, Neste relies on the testimony of three witnesses: the Declaration of Petri Yngve Lindqvist (Ex. 2019); the Declaration of Jukka Pekka Myllyoja (Ex. 2024); and the Declaration of Michael T. Klein, Sc.D. (Ex. 2029). Each of these declarations was submitted in support of Neste's Patent Owner Response; REG did not submit deposition transcripts for any of the three witnesses.

An oral hearing was held on November 26, 2019, and a transcript of the hearing is included in the record (Paper 40, "Tr.").

We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 6, 7, 10, 20, and 24 of the '185 patent are unpatentable. *See* 35 U.S.C. § 316(e).

B. Related Proceedings

The parties agree that the '185 patent is not the subject of any pending federal court action or proceeding before the Office. Pet. 2; Paper 4, 1. Concurrently with the filing of this Petition, REG also filed a petition challenging claims of US Patent No. 8,859,832 B1, which was assigned case number IPR2018-01375.

C. The '185 Patent (Ex. 1001)

The '185 patent, entitled "Use Of Renewable Oil In Hydrotreatment Process," issued June 3, 2014, claims priority to provisional application 61/443,161, filed February 15, 2011. Ex. 1001, codes (10), (45), (54), (60). The '185 patent describes methods for converting renewable oils, such as oils obtained from biological sources, to fuel using hydrotreatment methods.

Id. at 1:25–37. According to the '185 patent, impurities common in renewable oils can be detrimental to the performance of the catalysts typically used in hydrotreatment. *Id.* at 1:48–56. For example, phosphorus is known to cause rapid catalyst deactivation. *Id.* In addition, in large-scale production processes it is reported that the pressure drop (i.e., the difference in pressure between the top of the catalyst bed and the bottom of the bed) may rapidly increase due to a phenomenon known as “plugging.” *Id.* at 2:13–27.

The '185 patent reports that studies of reactor plugging determined the cause to be dust-like particles inside the reactor, analysis of which revealed metals originating from the feedstock such as iron, calcium, magnesium, and sodium, as well as phosphorus and carbon. *Id.* at 4:31–42. According to the patent, the rate of reactor plugging was correlated with iron content of the feedstock. *Id.* at 4:45–50. The '185 patent thus proposes purifying feedstocks prior to hydrotreatment, to achieve an iron content of less than 1 to 0.2 w-ppm and thus avoids or reduces pressure drop increases due to plugging. *Id.* at 4:50–56.

D. Illustrative Claims

Independent claims 1 and 6 are illustrative of the subject matter of the challenged claims and read as follows:

1. A method for preparing a hydrocarbon, the method comprising:
subjecting a bio oil from at least one renewable source to a hydrotreatment process, wherein in the hydrotreatment process, hydrocarbons are formed from said bio oil in a catalytic reaction employing a catalyst,
wherein an iron content of said bio oil is less than 1 to 0.2 w-ppm calculated as elemental iron,

wherein plugging of the catalyst used in the hydrotreatment process is reduced or avoided.

Ex. 1001, 7:6–15.

6. A bio oil intermediate, comprising:

a bio oil from at least one renewable source, wherein the iron content of said bio oil is less than 1 to 0.2 w-ppm calculated as elemental iron.

Id. at 7:33–35.

Claims 2–5, 8, 9, 11–19, and 21–23 depend from claim 1, while claims 7, 10, 20, and 24 depend from claim 6.

E. Instituted Grounds of Unpatentability

We instituted trial on the following grounds of unpatentability (Dec. 5, 28)¹:

Reference(s)	35 U.S.C. §	Challenged Claims
Myllyoja ²	102 or 103	1–22, 24
Myllyoja	103	1–22, 24
Toeneboehn ³	102	6, 7, 10

¹ The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on March 16, 2013. Because the application to which the ’185 patent claims priority was filed before that date, our citations to Title 35 are to its pre-AIA version.

² U.S. Patent Pub. No. 2007/0010682 A1 to Myllyoja et al., published Jan. 11, 2007 (Ex. 1004).

³ U.S. Patent No. 5,298,639 to Toeneboehn et al., issued Mar. 29, 1994 (Ex. 1005).

Reference(s)	35 U.S.C. §	Challenged Claims
Myllyoja, Toeneboehn, Daudin ⁴ , Bridge ⁵ , Gunstone ⁶	§ 103	1–24

REG asserts that Myllyoja, Toeneboehn, and Bridge are each prior art to the '185 patent under 35 U.S.C. § 102(b) because each was published or issued more than a year prior to the earliest priority date of the '185 patent. Pet. 14, 30–31, 33. REG asserts that Daudin qualifies as prior art under 35 U.S.C. §§ 102(a) or (e). *Id.* at 32–33. Finally, REG does not specify under what provision of § 102 Gunstone qualifies as prior art, but we noted in our Institution Decision that the Second Edition relied upon and filed with the Board bears a publication and copyright date of 1994, which would qualify the reference as § 102(b) art. Dec. 5. We also determined that REG had established, sufficiently for the purposes of institution, that Gunstone bears sufficient indicia of publication to support its contention that the reference was accessible to the interested public and thus a printed publication. *Id.* at 6. Neste did not challenge any of these assertions or determinations during the instituted trial; upon reviewing the record as a whole, we maintain our determination that these references are prior art to the '185 patent. *See* Paper 12 (Scheduling Order cautioning Neste that any arguments for patentability not preserved in the Patent Owner Response may be considered waived).

⁴ U.S. Patent Pub. No. 2010/0240942 A1 to Daudin et al., published Sept. 23, 2010 (Ex. 1006).

⁵ U.S. Patent No. 3,496,099 to Bridge, issued Feb. 17, 1970 (Ex. 1007).

⁶ Frank D. Gunstone et al., *THE LIPID HANDBOOK* (2d ed. 1994) (Ex. 1009).

II. ANALYSIS

A. *Burden of Proof*

In an *inter partes* review, the petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to the patent owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail in this proceeding, Petitioner must support its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). Accordingly, all of our findings and conclusions are based on a preponderance of the evidence.

B. *The Person of Ordinary Skill in the Art*

When considering a proposed ground of unpatentability, we must view the prior art from the perspective of the hypothetical person having ordinary skill in the art. *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1361 n.3 (Fed. Cir. 2008) (“What a prior art reference discloses or teaches is determined from the perspective of one of ordinary skill in the art.”) (citing *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991)). In addition, when considering whether a claim would have been obvious, we must ask whether there is a “reason[] one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.” *In re Rouffet*, 149 F.3d 1350, 1359 (Fed. Cir. 1998). We must, therefore, first consider who is the person of ordinary skill in the art of the ’185 patent.

REG defines the person of ordinary skill in the art at the time of the invention as having:

- (i) a Ph.D. degree in Chemistry or Chemical Engineering or a related field, and about 3 years total of practical experience with refining, hydroprocessing, and biofuels; (ii) a Master’s degree in

Chemistry or Chemical Engineering or a related field, and about 5 years total of practical experience with refining, hydroprocessing, and biofuels; (iii) a Bachelor's degree in Chemistry or Chemical Engineering or a related field, and about 10 years total of practical experience with refining, hydroprocessing, and biofuels.

Pet. 11–12 (citing Ex. 1002 ¶¶ 18–19).

Neste argues that REG's proposed level of skill in the art is “unreasonably high” and instead proffers that “a person of ordinary skill in the field of biofuel engineering and processing as of Feb. 15, 2011 would have had a degree in chemical engineering or chemistry and at least two to three years of experience with processes for manufacturing hydrocarbons from bio renewable feedstocks.” PO Resp. 6–7 (citing Ex. 2029 ¶ 31). Neither party indicates that the outcome of any arguments made in this case would change depending on the level of ordinary skill in the art.

We agree with the parties that the ordinarily skilled artisan, in February 2011, would have had at least a degree in chemical engineering or chemistry and would have had several years of experience in processing and refining biofuels. We need not parse the particular amount of education or experience given that neither party asserts this determination would have had any effect on the arguments or analysis in this case. Further, we find that the prior art of record reflects the level of skill in the art at the time of the invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. Claim Construction

In an *inter partes* review, we construe claims by applying the broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.100(b)

(2018).⁷ Under that standard, we interpret claim terms using “the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Only those terms which are in controversy need to be construed and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *see also U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (holding claim construction is not necessary when it is not “directed to, or has been shown reasonably to affect, the determination of obviousness”).

In the Petition, REG asked that we construe five claim terms: 1) *hydrocarbon*; 2) *bio oil*; 3) *renewable sources*; 4) *hydrotreatment process*; 5) *plugging of the catalyst*; and 6) *hydroisomerisation*. Pet. 9–11. Neste addressed the construction of *plugging of the catalyst*, but did not address REG’s other proposed constructions. Prelim. Resp. 15–18. Neste also asked that we construe *iron content of said bio oil* and *bio oil intermediate*. *Id.* at 12–15, 19–22. We determined that express constructions of *hydrocarbon*, *bio oil*, *renewable sources*, *hydrotreatment process*, and *hydroisomerisation* were not necessary to decide whether to institute trial.

⁷ The broadest reasonable construction standard applies to *inter partes* reviews filed before November 13, 2018. 77 Fed. Reg. 48727 (Aug. 14, 2012) (codified at 37 C.F.R. § 42.100(b)), as amended at 81 Fed. Reg. 18766 (Apr. 1, 2016); *see also* 83 Fed. Reg. 51340 (Oct. 11, 2018) (changing the standard for interpreting claims in *inter partes* reviews filed on or after November 13, 2018).

Dec. 7. We addressed the constructions of three other claim terms, as discussed further below.

1. iron content of said bio oil

At institution, Neste asked that we construe the claim limitation *wherein an iron content of said bio oil is less than 1 to 0.2 w-ppm calculated as elemental iron* as “wherein an iron content of said bio oil *after pretreatment for a subsequent hydrotreatment process* is less than 1 to 0.2 w-ppm calculated as elemental iron.” Prelim. Resp. 14 (emphasis added to highlight additional language). We analyzed the claim language and Neste’s arguments, and concluded that there was “no basis to conclude that the broadest reasonable interpretation of the claims is limited to iron content that is obtained by pretreating a bio oil.” Dec. 8. We found that Neste’s proposed construction added limitations to the claim that are not expressly recited, and that the ’185 patent defines “bio oil” as “any oil originating from a renewable (bio) source,” without any requirement of pretreatment. *Id.* at 9 (citing Ex. 1001, 3:28–29). We concluded that no explicit construction of the term was necessary beyond the express language of the claim.

In its Response, Neste asked for reconsideration of our construction, arguing that new evidence of record supported the conclusion that the iron content of the bio oil “defin[es] a new class of pre-treated bio oils possessing iron content within a previously unknown result-effective range bounded by critical endpoints.” PO Resp. 2. Neste thus proposes a slightly altered construction for the claim term: “wherein an iron content of said *pre-treated* bio oil is less than 1 to 0.2 w-ppm calculated as elemental iron.” *Id.* at 4.

We have again reviewed the record and the parties' arguments, and again decline to import into the claim a requirement that the bio oil must be pre-treated. As we discussed in our institution decision, nothing in the '185 patent indicates that the definition of bio oil is so limited. And we note that certain dependent claims of the '185 patent, for example claim 21, specifically recite a pre-treatment step, leading to the conclusion that the bio oils of the independent claims are not limited to only pretreated bio oils.

Neste's new evidence introduced during trial is extrinsic to the patent, based on the testimony of Dr. Klein regarding the criticality of the iron content range. *See* PO Resp. 3 (citing Ex. 2029 ¶¶ 35–36, 38). In any event, we fail to see how the criticality of the claimed range mandates that the bio oil be pretreated prior to undergoing the claimed process. While Dr. Klein testifies that it is “clear from the '185 patent [that] a bio oil feed must be pre-treated to render it suitable for commercial hydrotreatment” (Ex. 2029 ¶ 35), the portion of the patent he cites for this proposition states only that “bio-based feedstock (glyceride oil) to be used as feed material for hydrotreatment reaction *can* be purified to iron content of less than 1 to 0.2 w-ppm.” Ex. 1001, 4:50–55 (emphasis added). But this statement does not address the use of a bio oil that already contains an iron content within the claimed range, which therefore would not need purification. Indeed, the '185 patent discusses “experiments with palm oil having very low level of impurities.” Ex. 1001, 4:45–46.

Based on the foregoing, we maintain our view that the claim term requires no construction beyond its express language. The bio oil to be used in the method of claim 1 may be pretreated to achieve the claimed iron content, but pretreatment is not required by the claim.

2. *plugging of the catalyst*

In the Petition, REG asserted that *plugging of the catalyst* is a term of art referring to the deposition of impurities such as metals and phosphorus on a catalyst, resulting in a pressure drop across the catalyst bed. Pet. 10. Neste asked that we construe the term as “an increase in pressure drop due to elemental iron content in a feed that leads to plugging of bio oil flow in a catalyst bed.” Prelim. Resp. 17. We noted that “Neste’s primary disagreement does not appear to be with REG’s construction *per se*, but rather Neste asserts that REG applies that construction further to encompass catalyst deactivation.” Dec. 9. We evaluated the parties’ constructions and adopted Neste’s construction with a minor modification, because it was circular to include in the construction of *plugging of the catalyst* the term “plugging.” *Id.* at 11. We construed the term to mean “an increase in pressure drop across a catalyst bed due to elemental iron content in a feed.” Neither party disputed this construction during trial, and we maintain it here. See PO Resp. 4; Pet. Reply 6.

3. *bio oil intermediate*

Neste also asked that we construe a term from the preamble of claim 6, *bio oil intermediate*, as limiting on the scope of the claim. Prelim. Resp. 19. Neste contended that the term cannot mean a starting source material oil or a final product, but must mean “a bio oil pre-treated for a subsequent hydrotreatment process for forming hydrocarbons.” *Id.* at 20–21. We disagreed at institution, holding that the preamble of claim 6 is not limiting because the patent does not disclose that a “bio oil intermediate” is structurally any different than any other bio oil, and therefore the preamble must be considered to recite only an intended use. Dec. 12.

In its Response, Neste requests that we reconsider our construction, and asks for a modified construction of the term: “bio oil class of pre-treated bio oils.” PO Resp. 6. Neste argues that *bio oil intermediate* is a term coined by the inventors of the ’185 patent, and identifies a “pioneer class of pre-treated ‘bio oils’ defined by a previously unknown result-effective range of iron content properties.” *Id.* at 5. Neste also notes that the patent uses both “bio oil” and “bio oil intermediate,” implying that the terms must have different meanings, and argues that the preamble of claim 6 “is the *raison d’etre*” of the claim itself. *Id.* at 5–6.

We have evaluated our construction based on the full record of the trial and maintain our prior holding that the preamble of claim 6 is not limiting. Neste’s argument that the ’185 patent defines a novel class of pre-treated bio oils with critical properties was addressed above. Given that the patent’s written description contains references to both purified and non-purified oils, and that certain dependent claims explicitly add a pretreatment step, we cannot conclude from the intrinsic record that the independent claims are limited to pretreated oils. Given this conclusion, Neste’s argument that a *bio oil intermediate* is structurally different because it is pretreated lacks persuasive value.

Nor are we convinced that the inventors intended to coin a new term with *bio oil intermediate*. Neste’s sole support for this argument is the testimony of Dr. Klein (Ex. 2029 ¶¶ 136–38), which is extrinsic to the patent and therefore of limited use during claim construction. In any event, the cited portion of Dr. Klein’s testimony relates to criticality of the claimed iron content range, not the usage of the term “intermediate” and whether that term had some recognized meaning in the art. *See id.*

The intrinsic record of the '185 patent contains no indication that *bio oil intermediate* was a new term coined to signify a specific class of bio oils, as Neste contends. The written description contains a section devoted to providing specific definitions for terminology, including “bio oil,” “glyceride oil,” and “hydrotreatment.” Ex. 1001, 3:28–4:7. There is no mention of a *bio oil intermediate*, which would be expected if the inventors had intended to coin a new term. The only use of “intermediate” in the entire written description is as follows: “disclosed is a glyceride oil intermediate, which intermediate consists of glyceride oil from at least one renewable source and the iron content of said glyceride oil is less than 1 w-ppm.” *Id.* at 4:64–67. The sentence preceding that one states only that the “purification result *can* be obtained (*depending on used feedstock*) using pretreatment methods.” *Id.* at 4:61–62 (emphasis added). As can be seen, there is no mention in this passage that the “glyceride oil intermediate” *must* be pretreated, and no indication it is a novel term coined by the inventors.

In any event, Neste has not given us reason to depart from the general presumption that a claim preamble is not limiting. The body of claim 6 recites a structurally complete invention, defining the bio oil intermediate according to its iron content. There is no reason to rely on the preamble of the claim for any structure, or for antecedent basis for any claim term. Therefore, we conclude that the preamble does not “breathe life and meaning” into the claim, but rather recites an intended use for the structurally complete invention recited in the body of the claim. As such, we decline to adopt Neste’s modified construction of the claim term, and maintain our prior construction of claim 6’s preamble.

D. Anticipation of Claims 1–22 and 24 by Myllyoja

REG asserts that claims 1–22 and 24 of the '185 patent are unpatentable as anticipated by the disclosure of Myllyoja. Pet. 13–31.

1. Myllyoja

Myllyoja, published in 2007, discloses processes for the manufacture of diesel-range hydrocarbons from bio oils and fats by hydrotreating a feedstock, followed by isomerization. Ex. 1004, Abstract, ¶ 1. According to Myllyoja, in order to avoid catalyst deactivation and undesired side reactions, the feed should contain low amounts of certain impurities, such as alkaline and alkaline earth metals, phosphorous, and other metals. *Id.* ¶ 49. Specifically, the amount of other metals in the feed is below 10 w-ppm, but preferably below 1 w-ppm. *Id.* Myllyoja describes pretreatment processes such as degumming to remove phosphorus compounds, which may also result in the reduction of iron present in the form of metal-phosphatide complexes. *Id.* ¶ 51.

REG directs us to Myllyoja's Example 7, which reports a test on the stability of catalysts using a palm oil model feed. *Id.* ¶ 88. "Palm oil was used as a main component of feed, but it was modified with animal fat, fractions of free fatty acids, crude rapeseed oil, and lecithin in order to get suitable specification of impurities of test feed." *Id.* An analysis of the fresh feed used in the test is provided in Table 4 of Myllyoja. *Id.* Of particular note, Myllyoja reports the feed's iron content as "<1" mg/kg, which Dr. Sughrue testifies is the same as <1 w-ppm. *Id.*; Ex. 1002 ¶ 58. Myllyoja discloses that the feed of Example 7 was diluted in advance of hydrotreatment at a ratio of 1:5 with a diluent that simulates product recycle. Ex. 1004 ¶ 88.

Neste disputes the disclosure of Myllyoja, relying on the testimony of Mr. Myllyoja himself (Ex. 2024). According to Neste, “[t]he ‘< 1 w-ppm’ iron number relied upon by Petitioner from TABLE 4 and Example 7 of Myllyoja was actually conducted with an iron content having a concentration on the order of <0.90 w-ppm.” PO Resp. 24 (citing Ex. 2024 ¶¶ 10–11). According to Mr. Myllyoja, Neste instructions for reporting results from an ICP measuring device required any concentrations less than 0.90 w-ppm to be reported as “<1.” Ex. 2024 ¶ 10. And during oral argument, Neste’s counsel went further, characterizing the feed of Myllyoja as containing “iron on the order of zero.” Tr. 30:12–13.⁸ Neste does not explain, however, how a person of ordinary skill in the art would have been aware of Neste’s internal procedures, or would have known that “<1” meant anything other than what it says. At oral argument, Neste’s counsel appeared to agree that Myllyoja must be taken for what it would disclose to a person of ordinary skill in the art, not what Mr. Myllyoja knew based on internal Neste procedures. *Id.* at 16–20 (“Now, we have to deal with what a person of skill in the art reading Myllyoja might think because, unfortunately Mr. Myllyoja . . . was required to list the negligible trace amount of iron as less than one in his Table 4. We have to deal with that. That’s out there.”).

Based on our review of the Myllyoja reference, we must conclude that it would have disclosed to a person of ordinary skill in the art that Example 7

⁸ Though counsel stated that this assertion was based on the testimony of Mr. Myllyoja, we cannot find support in Mr. Myllyoja’s declaration for the assertion that the iron content was “on the order of zero.” Mr. Myllyoja’s testimony appears to be that the iron content was “well below 1.0 w-ppm.” Ex. 2024 ¶ 10.

used a fresh feed with an iron content of less than one w-ppm. Mr. Myllyoja's testimony regarding the internal procedures of Neste for reporting test results, while unchallenged, does not bear on the question of anticipation without further evidence that a person of ordinary skill would have been aware of these procedures. And we have no such evidence before us. Mr. Myllyoja's testimony that he recalls the iron content to have been "well below 1.0" has no bearing on the unpatentability analysis we must undertake.

2. The Parties' Contentions

REG contends that all elements of claims 1 and 6, as well as dependent claims 2–22 and 24, are disclosed by Myllyoja, and sets forth where the reference allegedly discloses each element. Pet. 13–31. REG contends that independent claim 1 is anticipated by Example 7 of Myllyoja, which discloses hydrotreating a feed having <1 w-ppm of iron. *Id.* at 16. As REG observes, this iron content range encompasses the claimed range of "less than 1 to 0.2 w-ppm." *Id.* Regarding claim 1's wherein clause that "plugging of the catalyst used in the hydrotreatment process is reduced or avoided," REG characterizes this limitation as "nonfunctional descriptive language" that cannot confer patentability to the claims. Pet. 18. REG also indicates that the language is "the method's intended result and would flow naturally from performance of the functional recitations of the method." *Id.* Even if given patentable weight, REG contends, Myllyoja allegedly discloses that low-iron feeds resulted in "long term stable operation in hydrotreatment processes." *Id.* Dr. Sughrue testifies that a person of ordinary skill in the art "would readily appreciate Myllyoja [] teaches use of a feed having less than 1 ppm iron reduces or avoids plugging of the

catalyst,” citing Examples 3 and 7. Ex. 1002 ¶ 64. For example, Example 7 states that the use of the test feed having <1 ppm iron resulted in “stable operation” over a 9-month run. Ex. 1004 ¶ 88.

Regarding claim 6, REG asserts that the process of Example 7 of Myllyoja describes a bio oil intermediate having an iron content of less than 1 ppm, which encompasses the claimed range. Pet. 22–23. REG also sets forth analysis why claims 2–5, 7–22, and 24 are anticipated by Myllyoja. *Id.* at 20–31.

Neste’s response as to claims 1 and 6 focuses primarily on whether Myllyoja teaches an iron content within the claimed range. Neste relies on its contention, discussed above, that Myllyoja actually discloses a range of iron on the order of <0.90 w-ppm, due to Neste’s internal reporting procedures. PO Resp. 24. Neste also observes that Myllyoja teaches to dilute its feedstock at a ratio of 1:5, meaning that the iron content of the feed that is subjected to hydrotreatment in Example 7 was actually less than 0.15 w-ppm. *Id.* at 25. According to Neste, this dilution is “fatal” to REG’s arguments, because it takes the iron range of Myllyoja fully outside the range of claim 1. Sur-Reply 9. Additionally, Neste sets forth arguments why the dependent claims 2–5, 7–20, and 22–24 are not disclosed in Myllyoja. PO Resp. 44–47.

3. Analysis of Claim 1 and its Dependents

In order to find a claim anticipated, we must find not only that all elements of a claim are disclosed within the four corners of a single prior art reference, but that the elements are “arranged as in the claim.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). Our analysis herein focuses on the primary dispute between the parties, as set

forth above: namely, whether Myllyoja discloses subjecting a bio oil from at least one renewable source to a hydrotreatment process, wherein the iron content of the bio oil is less than 1 to 0.2 w-ppm. As we find this element dispositive of the anticipation grounds as to claim 1, we do not analyze the parties' other arguments.

Essentially, the parties' dispute distills into a dispute over what claim 1 is referring to as the "bio oil," and thus when during processing the iron content is determined. Stated differently, the parties dispute whether the iron content of the feed must be determined prior to any dilution, or afterward. REG appears to regard the claim as reciting the iron content of the bio oil without dilution. *See* Pet. Reply 9–10 ("The '185 claims require a bio oil with a specified content of iron; they do not require a bio oil diluted with hydrocarbons with a specified iron content."). REG argues that to hold otherwise would require accepting Neste's claim construction that reads into the claims a "pretreatment" requirement, and then characterizing dilution as a type of pretreatment. *Id.* at 12. REG reasons that, because the diluent of Myllyoja is disclosed as being hydrocarbons (recycled product feed), it cannot be considered part of the "bio oil," as the '185 patent defines it. *Id.*

Neste, on the other hand, argues that the "bio oil" of claim 1 does not exclude diluted bio oil. Sur-Reply 7. Rather, according to Neste the '185 patent uses "bio oil" to refer to what is subjected to hydrotreatment. In other words, what is relevant according to Neste is the iron content feed being introduced to the catalyst bed. Neste also points to the cross-examination of Dr. Sughrue, who agreed with the statement that a person of ordinary skill in the art "would be most interested 'in what you're putting into their reactor.'" *Id.* (citing Ex. 2043, 251:17–18).

Resolving this dispute is central to resolving the question of whether Myllyoja discloses an iron content within the scope of claim 1's range. If REG is correct, and the iron content must be determined prior to any dilution, then Myllyoja discloses an iron content of <1 w-ppm that encompasses the entirety of the claimed range. If, instead, Neste is correct and the iron content is determined at the point the feed is introduced to the catalyst bed, then Myllyoja discloses a post-dilution iron content of <0.2 w-ppm, lower than the claimed range.

Upon evaluation of the record as a whole, we believe Neste has the better argument, and conclude that the iron content of the bio oil in claim 1 should be determined when the feed is introduced to the catalyst bed. This interpretation is, most importantly, reflected in the structure of the claim. Claim 1 contains a single process step, of "subjecting a bio oil . . . to a hydrotreatment process." Immediately following this process step is a wherein clause that requires the iron content of "said bio oil" to be within a certain range. The necessary implication of this claim structure is that "said bio oil" is referring to the substance that is being subjected to the hydrotreatment process, meaning the iron content that is relevant to the claim is the iron content at the time of hydrotreatment with a catalyst. The claim, as a comprising claim, does not exclude the presence of other treatment steps such as purification or dilution, but the structure of the claim does imply that these additional steps should be performed prior to determining whether the iron content of the feed is within the claimed range.

That the iron content should be determined at the time of hydroprocessing is also supported by the purpose of the '185 patent itself. The patent is concerned with avoiding adverse effects on catalyst beds,

namely plugging due to iron content in a feedstock, and achieves its results by reducing the iron content to a specified range. It logically follows that the iron content at the catalyst bed, rather than at some other point in the process, is what is relevant to achieving the results claimed by the '185 patent. And the patent discloses that a feedstock may be purified to an iron content of less than 1 to 0.2 w-ppm in order to avoid shortening the catalyst cycle length (Ex. 1001, 4:50–57), signaling that various processing steps may take place before the iron content of the oil is determined.

REG's arguments to the contrary are not convincing. First, REG relies on the testimony of Dr. Sughrue to argue that even if pretreatment may include purification techniques such as degumming, dilution is a different process that would not be considered pretreatment. Pet. Reply 12–13 (citing Ex. 1044 ¶¶ 22–29). But we need not decide whether or not certain processing steps would be classified as “pretreatment,” as the claim does not recite “pretreatment” and we have not adopted Neste's proposed construction that the claims require a pretreated bio oil. Rather, the claim recites “subjecting a bio oil . . . to a hydrotreatment process,” requiring that we consider what point in the process of Myllyoja would be considered “hydrotreatment” as used by the '185 patent, as that is the point that is relevant to determining the iron content of the bio oil. And, as just discussed, the written description includes an example of a purification step that results in an iron content within the claimed range, signaling that certain processing steps may take place prior to hydrotreatment, and that the iron content should be determined after those steps have taken place. Again, because the '185 patent is concerned with the iron content's effects on the

hydrotreatment catalyst, it follows that the iron content should be determined at the time the feed is introduced into the catalyst.

Nor are we persuaded by REG's argument that a *bio oil*, as used in claim 1, is distinct from any diluent containing hydrocarbons, such as the diluent of Myllyoja. *See* Pet. Reply 7–8. REG urges a construction of *bio oil* that excludes hydrocarbons, because the claim recites that the hydrotreatment process forms hydrocarbons from the bio oil. *Id.* According to REG, because a hydrocarbon cannot be converted to a hydrocarbon through hydrotreatment, hydrocarbons cannot be considered part of the bio oil. *Id.*

Such a restrictive definition of *bio oil* is not supported by the '185 patent. The patent expressly defines the term as “any oil originating from a renewable (bio) source.” Ex. 1001, 3:28–29. As counsel for REG conceded at oral argument, the record does not contain any indication that such oils originating from renewable sources contain no hydrocarbons whatsoever. Tr. 10:11–11:3. And, we note that the '185 patent, in discussing the compounds that may make up a bio oil, uses the open-ended term “comprising,” signaling that other compounds such as hydrocarbons may be present. Ex. 1001, 3:30–32 (“Bio oils can comprise at least fatty acids or fatty acid derivatives such as glycerides, alkyl esters of fatty acids, fatty acid alcohols or soaps.”). We see no basis for defining *bio oil* to exclude any hydrocarbon. As such, the term would encompass feedstocks that have been diluted by the addition of product feed hydrocarbons, thereby reducing the overall concentration of impurities. The diluted feedstock of Myllyoja, with an iron content of <0.2 w-ppm, is properly considered a *bio oil* within the scope of claim 1.

Based on the foregoing, we find that Myllyoja discloses a starting feedstock having an iron content of less than one w-ppm, that is then diluted at a 1:5 ratio which necessarily results in an iron content below 0.2 w-ppm. Ex. 1004 ¶ 88. Myllyoja thus discloses that the bio oil it subjects to hydroprocessing in Example 7 has an iron content of <0.2 w-ppm, outside the range claimed in claim 1. REG directs us to no other disclosures in Myllyoja that arguably disclose this element of the claim. We, therefore, must reach the conclusion that Myllyoja does not anticipate claim 1. And it necessarily follows that Myllyoja cannot anticipate any of the claims that depend from claim 1, namely 2–5, 8, 9, 11–19, 21, 22, or 24.

4. Analysis of Claim 6 and its Dependents

Claim 6 presents a different question, as it is a composition claim, not a method claim. Given our determination above that the preamble of claim 6 is not limiting on the scope of the claim, the claim requires only “a bio oil from at least one renewable source, wherein the iron content of said bio oil is less than 1 to 0.2 w-ppm calculated as elemental iron.” The claim does not reference any sort of processing, unlike claim 1 which expressly recites hydrotreatment. Unlike claim 1, therefore, there is no reason to link the iron content of the bio oil to any particular stage of processing. Claim 6 simply requires a bio oil that has a certain iron content.

Myllyoja discloses such a composition, namely its pre-diluted feedstock containing <1 w-ppm iron in Example 7. Ex. 1001 ¶ 88. Myllyoja’s feed used palm oil as its primary component, but also included animal fat, fractions of free fatty acids, crude rapeseed oil, and lecithin. *Id.* We find that these sources are considered renewable sources, as opposed to

fossil sources, and Neste does not argue otherwise. The feed of Myllyoja, therefore, satisfies all elements of claim 6, and anticipates the claim.

Regarding dependent claims 7 and 10, which are directed to narrower ranges of iron content (less than 0.5 to 0.2 w-ppm and less than 0.25 to 0.2 w-ppm, respectively), REG contends that the feed of Example 7, containing <1 w-ppm iron, encompasses these claimed ranges. Pet. 23–24. Neste argues only that there “is no overlapping range relating to these ranges” (PO Resp. 44), but does not address specifically Myllyoja’s Example 7. Presumably, Neste’s contention is grounded in the fact that Myllyoja dilutes its feed at a ratio of 1:5 before hydroprocessing, as we discuss at length above. But claim 6’s breadth extends beyond the feed at the time of processing. We find no basis for Neste’s contention that Myllyoja’s feed, prior to dilution, does not encompass the narrower ranges of claims 7 and 10.

Finally, dependent claims 20 and 24 depend from claim 6 and recite specific sources for the bio oil. Claim 20 recites that the renewable source is algae, bacteria, molds, filamentous fungi or a combination thereof, while claim 24 recites that the bio oil includes an oil derived from these sources. REG contends that these claims are product-by-process claim because they require the composition of claim 6 to originate from a particular source. Pet. 28–29. As such, REG argues that the limitations of claims 20 and 24 cannot impart patentable weight to the claim, as there is no evidence that bio oils from these sources have “distinctive structural characteristics.” *Id.*

REG cites *Purdue Pharma LP v. Epic Pharma, LLC*, 811 F.3d 1345, 1353–1354 (Fed. Cir. 2016) as supporting its interpretation of the dependent claims as having product-by-process limitations. In *Purdue Pharma*, the

claim at issue included a wherein clause that recited “wherein at least a portion of the 14-hydroxy [] is derived from 8a[.]” *Id.* The district court found, and the Federal Circuit agreed, that this “derived from” limitation did not describe the structure of the 14-hydroxy and is thus a process limitation. *Id.* The Federal Circuit also noted that “there is no suggestion in the patents that the hydrogenation process changes depending on whether the 14-hydroxy is created by 8a or 8b.” *Id.*

We are presented with a similar situation here, at least in relation to claim 24 which is also a “derived from” limitation. Neste has not argued, nor can we find, that there is any evidence in the record that bio oils derived from the sources in claims 20 and 24 have any structural differences from bio oils derived from other sources. Neste responds only that REG “fails to sufficiently explain how a [person of ordinary skill in the art] would have known to utilize such bio oils from such sources.” PO Resp. 45. But this argument is not relevant to whether the limitations of claims 20 and 24 are product-by-process limitations.⁹

Given the similarity of the language of claim 24 to that addressed in *Purdue Pharma*, and the lack of evidence or argument that the source of the bio oil results in differences in structure, we conclude that claim 24’s “derived from” limitation is a product-by-process limitation, not entitled to patentable weight. Though claim 20’s limitation is slightly different, and does not use “derived from” but instead specifies the renewable source of

⁹ In our institution decision, we noted REG’s argument that claims 20 and 24 are product-by-process claims and invited Neste to address the issue during trial. Dec. 20. Neste did not take us up on this invitation, either in its Response or its Sur-Reply.

claim 6 is of a set of particular sources, we cannot conclude that this simple difference in claim drafting results in a claim that is appreciably different in scope. The reasoning behind *Purdue Pharma*, that sources of compositions cannot impart patentable weight unless they result in structurally distinct compositions, applies equally to claim 20.

For these reasons, we find that the product-by-process limitations of claims 20 and 24 do not narrow the scope of claim 6 from which they depend. Claims 20 and 24, therefore, are anticipated by Myllyoja for the same reasons discussed above for claim 6.

E. Obviousness of Claims 1–22 and 24 over Myllyoja

In the alternative, REG contends that if we do not find that claims 1–22 and 24 of the '185 patent are anticipated by Myllyoja, they are unpatentable under 35 U.S.C. § 103(a) as having been obvious over Myllyoja. Pet. 20; Pet. Reply 14–16. Specifically, REG asks that if we determine that Myllyoja's range of <1 ppm iron is not sufficiently specific to anticipate the claimed range of 0.2 to less than 1 ppm, the overlap of the ranges is evidence of *prima facie* obviousness. Pet. 20. Absent evidence of the criticality of the claimed range, and in particular the lower end of the range, REG argues that the claims would have been obvious. *Id.*

REG's obviousness contentions, however, address a problem that is different than the fault we discussed above in relation to the anticipation ground. Stated differently, the problem with the Myllyoja anticipation ground is not that Myllyoja's iron content range is "not sufficiently specific;" it is that the iron content range disclosed does not overlap the claimed range at all. And REG does not argue that a person of ordinary skill in the art would have had reason to modify Myllyoja's disclosure of a feed

having <0.2 w-ppm iron by increasing the concentration of iron in the feed above 0.2 w-ppm into the range of 0.2 to less than 1 w-ppm. Indeed, given REG's assertions that iron was a known contaminant in feedstocks and that the prior art recognized its role in catalyst plugging, it is difficult to see why a person of ordinary skill in the art would have thought it advantageous to modify Myllyoja's low iron content by increasing it.

For these reasons, we conclude that REG has not met its burden of demonstrating, by a preponderance of the evidence, that Myllyoja teaches or suggests the iron content limitation of claim 1, or by extension its dependent claims 2–5, 8, 9, 11–19, 21, 22, and 24. We need not reach the question of whether claim 6 and its dependents 7, 10, 20, and 24 would have been obvious over Myllyoja, as we have found those claims to be anticipated by the reference.

F. Anticipation of Claims 6, 7, and 10 by Toeneboehn

REG contends that claims 6, 7, and 10 of the '185 patent are unpatentable under 35 U.S.C. § 102(b), as they are anticipated by Toeneboehn. Pet. 30–32. Toeneboehn, published in 1994, discloses a modified physical adsorption process for removing impurities from oils. Ex. 1005, Abstract, 4:38–60. Example V of Toeneboehn reports a crude palm oil acid pretreatment process, and reports the impurities levels after various processing steps in Table V. *Id.* at 21:64–22:28, Table V. For example, the laboratory refining process of Example IV is reported in Table V to result in an iron content of 0.3 ppm for bleached palm oil and 0.4 ppm for deodorized palm oil. *Id.* REG contends that this processed oil, for example the refined soybean oil of Table I, is a bio oil intermediate having an iron content within the range claimed in claim 6, and thus anticipates the claim. Pet. 31.

Regarding claims 7 and 10, REG observes that Toeneboehn discloses iron levels within the narrowed ranges of these claims (0.2–0.5 w-ppm and 0.2–0.25 w-ppm, respectively). *Id.*

Neste contends that the oils disclosed by Toeneboehn are “a broad range of final product, finished oils with specifications not suited for [hydrotreatment] use” and therefore a person of ordinary skill in the art would not have considered any of the products to be suitable feedstocks for a hydrotreatment process. PO Resp. 38. As such, Neste argues, the oils of Toeneboehn cannot be “bio oil intermediates” as required by claim 6.

Neste’s arguments, however, are grounded in its interpretation of “bio oil intermediate” as a positive limitation on the scope of claim 6, a position we addressed and rejected above. Similarly, claim 6 lacks any requirement that the bio oils be suitable for, or intended to be used in, a hydrotreatment process. Neste’s arguments that a person of ordinary skill in the art would not have considered Toeneboehn’s oils suitable for hydrotreatment is thus not relevant to the patentability of the claim.

Based on our evaluation of Toeneboehn, we find that it discloses bio oils from renewable sources treated to have iron contents within the range claimed in claim 6. For example, deodorized palm oil, which is from a renewable (not fossil) source, is disclosed as having 0.4 ppm iron content. Ex. 1005, 21:64–22:28, Table V. Claim 6 requires nothing more, and Toeneboehn thus discloses all elements of the claim. Similarly, the industry targets for fully refined soybean oil, having iron contents of 0.1–0.3 ppm iron (*Id.* at Table I), fall within the narrower ranges recited in dependent claims 7 and 10. On this basis, we conclude that REG has shown by a

preponderance of the evidence that Toeneboehn anticipates claims 6, 7, and 10.

G. Obviousness of Claims 1–24 over Myllyoja, Toeneboehn, Daudin, Bridge, and Gunstone

Finally, REG contends that claims 1–24 of the '185 patent are unpatentable under 35 U.S.C. § 103(a), as having been obvious over the combined disclosures of Myllyoja, Toeneboehn, Daudin, Bridge, and Gunstone. Pet. 32–55.¹⁰ REG notes that Myllyoja discloses a method for hydrotreating a bio oil, the disclosed oil having an iron content within the range claimed. Pet. 33. Relying on Toeneboehn, REG contends that a person of ordinary skill in the art would have recognized that iron was a contaminant and used Toeneboehn's disclosed processes, such as bleaching or refining, to remove iron prior to hydrotreating as in Myllyoja. *Id.* at 34. REG cites Bridge as recognizing that the removal of iron from the feed would have been expected to result in the reduction or avoidance of plugging. *Id.* at 34–35. Daudin is cited for its disclosure that bio oils may be sourced from microbial sources such as fungi or bacteria (*id.* at 35 (citing Ex. 1006 ¶ 20)), as recited in claim 23, and Gunstone is cited as evidence

¹⁰ As Neste correctly observes, REG variously refers to its obviousness ground as being based on: “Myllyoja I, Toeneboehn, and Daudin in view of Bridge I and in view of, or as evidenced by, Gunstone” (Pet. 13); “one or more of Myllyoja I, Toeneboehn, Daudin, Bridge I, and Gunstone” (*id.* at 36); “Myllyoja I, Toeneboehn, Daudin, Bridge I, and in view of, or as evidenced by Gunstone” (*id.*); and “Myllyoja I, Toeneboehn, and Daudin” (*id.* at 56). In our institution decision, we interpreted the ground of unpatentability to be based on a combination of the disclosures of all five references, and REG did not argue during the trial that this interpretation was incorrect.

that algae-sourced bio oils were known to meet the criteria of Myllyoja, such as lipids having C₁₆–C₂₂ fatty acids (*id.* (citing Ex. 1009, 205–207)).

In its Reply, REG further states that a person of ordinary skill in the art “would have been motivated to combine Myllyoja’s bio oil hydrotreatment process with Toeneboehn’s *pretreated* oils” for two reasons. Reply 20 (emphasis added). First, given Myllyoja’s recognition of iron as a contaminant, REG contends that the skilled artisan “would have used Toeneboehn’s processes such as bleaching or refining prior to hydrotreating.” *Id.* at 20–21. Second, employing Toeneboehn’s oils in Myllyoja’s process would have avoided adverse effects of iron. *Id.* at 21. REG specifically points to Toeneboehn’s disclosure of oils having 0.21 ppm, 0.3 ppm and 0.4 ppm iron as meeting the requirements set forth in Myllyoja for phosphorus and alkaline earth metal content. *Id.* (citing Ex. 1044 ¶ 66). According to Dr. Sughrue, these oils “fall[] squarely within the claimed range” and would have been selected by the skilled artisan for use in Myllyoja’s process. Ex. 1044 ¶ 66.

The problem with REG’s proposed combination is the same as discussed for the Myllyoja anticipation ground above. Namely, if a person of ordinary skill in the art were to select the oils of Toeneboehn indicated by REG—pretreated oils having iron contents of 0.21 ppm, 0.3 ppm and 0.4 ppm—for use in the process of Myllyoja’s Example 7, the oils would first be diluted 1:5 using product feed hydrocarbons. This dilution would reduce the iron content of each bio oil to below the range claimed in claim 1. Thus, combining Toeneboehn with Myllyoja does not remedy the primary defect in Myllyoja alone.

During oral argument, counsel for REG indicated that other oils disclosed in Toeneboehn have higher iron content which would, when diluted at a 1:5 ratio, result in iron content within the claimed range. Tr. 10:1–4. Specifically, counsel pointed out the super degummed canola oil of Toeneboehn’s Table IV, as well as the crude palm oil of Table V. *Id.* Relying on these disclosures, never cited in REG’s briefing before the Board, for the first time at oral argument is improper. Even if we were to consider these disclosures, however, we have serious doubts that a person of ordinary skill in the art would have had reason to select these oils, which have phosphorous or metal contents well above those considered acceptable in Myllyoja, for use in Myllyoja’s Example 7.

For these reasons, combining the disclosures of Myllyoja and Toeneboehn, and using in Myllyoja’s Example 7 process the specific pretreated oils identified in Toeneboehn, would not result in a process that teaches or suggests a bio oil having an iron content within the range set forth in claim 1. And REG does not assert that any of the other references in the combination—namely, Bridge, Gunstone, and Daudin—disclose iron content within the claimed range. REG, therefore, has not proven by a preponderance of the evidence that the combined references teach or suggest all elements of claim 1. We, therefore, cannot conclude that claim 1, or any of its dependent claims 2–5, 8, 9, 11–19, or 21–23, would have been obvious based on the arguments made by REG. As we have already found claim 6 and its dependents anticipated by one or more grounds of unpatentability, we need not reach the question of obviousness of these claims on this ground.

III. MOTION TO EXCLUDE

REG filed a Motion to Exclude, requesting that we exclude certain exhibits filed by Neste along with its Sur-Reply or used in the second deposition of Dr. Sughrue. Paper 34. Specifically, REG asks that we exclude Exhibits 2039, 2040, 2041, 2043, 2044, 2045, and 2046, as well as portions of the deposition transcripts (Exs. 2043 and 2044) referencing these exhibits. *Id.* Neste filed an opposition (Paper 35), and REG filed a Reply (Paper 36).

We do not reach the merits of the motion, because the evidence objected to by REG pertains to Neste's assertions regarding objective indicia of nonobviousness, an issue we have not reached given our conclusion that, for each asserted obviousness ground, the cited references do not teach or suggest all elements of the challenged claims. REG's motion, therefore, is moot. Nevertheless, we do note that REG correctly observes that, pursuant to our Trial Practice Guide, the only evidence permitted to be filed along with a Patent Owner Sur-Reply is the transcript of the deposition of the petitioner's expert. Office Patent Trial Practice Guide 14 (Aug. 2018), https://www.uspto.gov/sites/default/files/documents/2018_Revised_Trial_Practice_Guide.pdf; *see also* Consolidated Trial Practice Guide 73 (Nov. 2019), <https://www.uspto.gov/TrialPracticeGuideConsolidated> (“[A] sur-reply may not be accompanied by new evidence other than deposition transcripts of the cross-examination of any reply witness.”).

While Neste raises various explanations why the evidence it submitted was proper rebuttal evidence, proceedings before the Board are not ones in which, as the old saying goes, “it is better to ask for forgiveness than permission.” In other words, a party before the Board may not simply file

whatever it wants, and need only justify those filings later if they are challenged. Rather, our Rules require prior authorization for any filing not expressly or automatically authorized by rule. *See generally* 37 C.F.R. §§ 42.20(b) (prior authorization required for all motions); 42.123(a)(1) (submitting supplemental information requires preauthorization). And in any event, this was not a situation in which the Board's rules and procedures were unclear, given the express prohibition on the filing of new evidence in the Trial Practice Guide. Neste's reasons for wanting to file new evidence with its Sur-Reply may have been valid, but the proper procedure for doing so was to contact the Board *prior to the filing* and expressing those reasons to the panel.

IV. CONCLUSION

We conclude that REG has satisfied its burden of demonstrating, by a preponderance of the evidence, that claims 6, 7, 10, 20, and 24 of the '185 patent are unpatentable. We further conclude that REG has *not* demonstrated by a preponderance of the evidence that 1–5, 8, 9, 11–19, or 21–23 are unpatentable.

Claims	35 U.S.C. §	Reference(s)	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–22, 24	102(b)	Myllyoja	6, 7, 10, 20, 24	1–5, 8, 9, 11– 19, 21, 22
1–22, 24	103	Myllyoja		1–5, 8, 9, 11– 19, 21, 22. ¹¹
6, 7, 10	103	Toeneboehn	6, 7, 10	
1–24	103	Myllyoja, Toeneboehn, Daudin, Bridge, Gunstone		1–5, 8, 9, 11– 19, 21–23. ¹²
Overall Outcome			6, 7, 10, 20, 24	1–5, 8, 9, 11– 19, 21–23

V. ORDER

Accordingly, it is:

ORDERED that Petitioner has established, by a preponderance of the evidence, that claims 6, 7, 10, 20, and 24 of the '185 patent are unpatentable;

FURTHER ORDERED that Petitioner has not established, by a preponderance of the evidence, that claims 1–5, 8, 9, 11–19, or 21–23 are unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is *dismissed as moot*; and

FURTHER ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review must comply with the notice and service requirements of 37 C.F.R. § 90.2.

¹¹ We did not reach this ground as to claims 6, 7, 10, and 20.

¹² We did not reach this ground as to claims 6, 7, 10, and 20.

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