# United States Court of Appeals for the Federal Circuit

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**CHEMOURS COMPANY FC, LLC,**
*Appellant*

**v.**

**DAIKIN INDUSTRIES, LTD., DAIKIN AMERICA, INC.,**
*Appellees*

**ANDREW HIRSHFELD, PERFORMING THE FUNCTIONS AND DUTIES OF THE UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,**
*Intervenor*

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2020-1289, 2020-1290

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2018-00992, IPR2018-00993.

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Decided: July 22, 2021

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CA.

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MONICA BARNES LATEEF, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, for intervenor. Also represented by THOMAS W. KRAUSE, MAUREEN DONOVAN QUELER, FARHEENA YASMEEN RASHEED.

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Before NEWMAN, DYK, and REYNA, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* REYNA.

Opinion concurring in part and dissenting in part filed by *Circuit Judge* DYK.

REYNA, *Circuit Judge*.

Chemours Company FC, LLC, appeals the final written decisions of the Patent Trial and Appeal Board from two inter partes reviews brought by Daikan Industries, Ltd., et al. Chemours argues on appeal that the Board erred in its obviousness factual findings and did not provide adequate support for its analysis of objective indicia of nonobviousness. Chemours also argues that the Board issued its decision in violation of the Appointments Clause because the Board's decision came after this court's decision in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320, 1335 (Fed. Cir. 2019), but before this court issued its mandate. Chemours argues that the Board's decision should be

vacated and remanded.[1] We decline to vacate and remand this case pursuant to *Arthrex*. We conclude that the Board's decision on obviousness is not supported by substantial evidence and that the Board erred in its analysis of objective indicia of nonobviousness. Accordingly, we reverse.

## BACKGROUND

This consolidated appeal arises from two final written decisions in inter partes reviews, *Daikin Industries Ltd. v. Chemours Co. FC, LLC*, No. IPR2018-00992 (P.T.A.B. Nov. 12, 2019), and *Daikin Industries Ltd. v. Chemours Co. FC, LLC*, No. IPR2018-00993 (P.T.A.B. Nov. 12, 2019). J.A. 1–129. Daikin Industries Ltd. and Daikin America, Inc. (collectively, "Daikin") filed a petition at the Patent Trial and Appeal Board ("Board") requesting an inter partes review of claims 1–7 of U.S. Patent No. 7,122,609 (the "'609 patent"). IPR2018-00992, J.A. 1–67. Daikin also filed a petition requesting an inter partes review of claims 3 and 4 of U.S. Patent No. 8,076,431[2] (the "'431 patent"). IPR 2018-00993, J.A. 68–129.

The '609 patent relates to a unique polymer for insulating communication cables formed by pulling wires through melted polymer to coat and insulate the wires, a process known as "extrusion."[3] '609 patent col. 3 ll. 50–63.

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[1] Following the Supreme Court's decision in *United States v. Arthrex, Inc.*, 141 S. Ct. 1970 (2021), Chemours withdrew its request to vacate and remand to the Board. ECF No. 66.

[2] The asserted claims include claims 3 and 4 because claims 1, 2, and 5–7 of the '431 patent were disclaimed. J.A. 3716.

[3] The specifications for both patents are nearly identical as are the issues on appeal for both patents. *See*

Specifically, Chemours's patents relate to a polymer with unique properties such that it can be formed at high extrusion speeds while still producing a high-quality coating on the communication cables. *Id.* Most relevant to the issues in this appeal, the claims provide that the polymer has a specific melt flow rate range, i.e., "a high melt flow rate of about 30±3 g/10 min," which is the rate at which melted polymer flows under pressure. '609 patent col. 10 ll. 19–20. The melt flow rate of a polymer is an indicator of how fast the melted polymer can flow under pressure, i.e., during extrusion. Appellant's Br. 3. The higher the melt flow rate, the faster the polymer can be coated onto a wire. J.A. 1150–1151 at ¶ 32. Claim 1 of the '609 patent is representative of the issues on appeal:

> 1. A partially-crystalline copolymer comprising tetrafluoroethylene, hexafluoropropylene in an amount corresponding to a hexafluoropropylene index (HFPI) of from about 2.8 to 5.3, said copolymer being polymerized and isolated in the absence of added alkali metal salt, having a melt flow rate of within the range of about 30±3 g/10 min, and having no more than about 50 unstable endgroups/$10^6$ carbon atoms.

'609 patent col. 10 ll. 15–21.

The Board found all challenged claims of the '609 patent and the '431 patent to be unpatentable as obvious in view of U.S. Patent No. 6,541,588 ("Kaulbach"). J.A. 66, 345–51.

Chemours appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

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Appellant's Br. 2 n.1. When referencing both patents, this opinion will cite to the '609 patent and IPR2018-00992, J.A. 1-67.

## STANDARD OF REVIEW

This court reviews the Board's legal determinations de novo and its factual determinations for substantial evidence. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1379 (Fed. Cir. 2016). Substantial evidence requires more than a "mere scintilla" and must be enough such that a reasonable mind could accept the evidence as adequate to support the conclusion. *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

Obviousness is a question of law based on underlying findings of fact. *See In re NuVasive, Inc.*, 842 F.3d at 1381. "What the prior art teaches, whether a person of ordinary skill in the art would have been motivated to combine references, and whether a reference teaches away from the claimed invention are questions of fact." *Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017) (quoting *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047–48 (Fed. Cir. 2016) (en banc)).

In making its factual findings, the Board must have both an adequate evidentiary basis for its findings and articulate a satisfactory explanation for those findings. *NuVasive*, 842 F.3d at 1382 (citing *In re Lee*, 277 F.3d 1338, 1344 (Fed. Cir. 2002) and S*ynopsys, Inc. v. Mentor Graphics Corp.*, 814 F.3d 1309, 1322 (Fed. Cir. 2016)). We review for substantial evidence the underlying factual findings leading to an obviousness conclusion. *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1278 (Fed. Cir. 2017).

## DISCUSSION

We first address Chemours's argument concerning this court's decision in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320, 1335 (Fed. Cir. 2019).

I

Chemours argues that the Board's decision was issued in violation of the Appointments Clause because the Board issued its final written decisions in both inter partes reviews on November 12, 2019, which was after this court's decision in *Arthrex*, but before the mandate was issued. Specifically, Chemours contends remand is required in this instance because the *Arthrex* decision was not final until its mandate issued, so the court had not cured the constitutional defect by the time the final written decisions were issued. Appellant's Br. 42.

Because Chemours has withdrawn its request based on *Arthrex* to vacate and remand to the Board, we decline to vacate the Board's decision and remand to the Board.

II

Chemours argues that the Board's final written decision on obviousness is erroneous because its factual findings on motivation to combine are unsupported by substantial evidence. Appellant's Br. 19. Specifically, Chemours argues that Daikin did not meet its burden of proof because it failed to show that a person of ordinary skill in the art ("POSA") would modify Kaulbach's polymer to achieve the claimed invention. *Id.* at 25–31.

The Kaulbach reference teaches a polymer for wire and cable coatings that can be processed at higher speeds and at higher temperatures. Kaulbach col. 3 ll. 3–5. Kaulbach highlights that the polymer of the invention has a "very narrow molecular weight distribution." *Id.* at col. 3 ll. 34–35, 59–65. Kaulbach discovered that prior beliefs that polymers in high-speed extrusion application needed broad molecular weight distributions were incorrect because "a

narrow molecular weight distribution performs better."[4] *Id.* at col. 3 ll. 61–65; *see also* col. 1 ll. 57–59. In order to achieve a narrower range, Kaulbach reduced the concentration of heavy metals such as iron, nickel and chromium in the polymer. *Id.* at col. 3 ll. 24–33.

In the description of the invention, Kaulbach suggests that polymers used in "high speed wire extrusion" have melt flow rates of 15 g/10 min or greater. *Id.* at col. 3 ll. 43–44. In the Kaulbach example relied on by the Board, Sample A11, Kaulbach's melt flow rate is 24 g/10 min, while the claimed rate is 30±3 g/10 min. *Id.* at col.9 ll. 3–15.[5] Kaulbach further touts as a benefit that the melt flow rate does not change during processing. *Id.* at col. 3 ll. 49–50, col. 4 ll. 1–2, col. 4 ll. 7–11.

The Board found that Kaulbach's melt flow rate range fully encompassed the claimed range, and that a skilled artisan would have been motivated to increase the melt flow rate of Kaulbach's preferred embodiment to within the claimed range in order to coat wires faster. J.A. 45–46. In making its findings, the Board relied on the teachings of other evidence. J.A. 42–46. Specifically, the Board found the following:

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[4] Molecular weight distribution reflects the range of molecular weights (or chain lengths) in a given polymer. J.A. 1145 at ¶ 20. A polymer with a narrower molecular weight distribution has more polymer chains that are of similar lengths, while a broad molecular weight distribution fluorinated ethylene propylene ("FEP") has more variation in polymer chain lengths. *Id.*

[5] Kaulbach refers to a "melt flow index" or "MFI" value. Kaulbach col.1 ll. 40–41, col. 3 ll. 43–44. Chemours acknowledges that "melt flow index" and "melt flow rate" may be used interchangeably.

> In view of Kaulbach's disclosure that [melt flow rate] values of ≥15 g/10 min are suitable for high[-] speed wire extrusion, and record evidence establishing that higher coating speeds of 2800 or 3000 ft/min are possible, we are persuaded that the skilled artisan would have been motivated to improve upon the wire coating speeds observed with Kaulbach's Sample A11. We also are persuaded that the skilled artisan would have been motivated to increase the [melt flow rate] of Kaulbach's Sample A11 to be within the recited range in order to achieve higher processing speeds, because the evidence of record teaches that achieving such speeds may be possible by increasing a [polymer's] [melt flow rate].

J.A. 45–46.

While acknowledging that Kaulbach states that "'a narrow molecular weight distribution performs better' at achieving high processing rates than polymers with 'broad' molecular distributions," J.A. 50–51, the Board also found that "it is not clear on this fully developed record why the skilled artisan would have been motivated to maintain such a narrow molecular weight distribution when seeking to achieve even higher coating speeds with Kaulbach's Sample A11," J.A. 50. In addition, the Board found that the portions of Kaulbach's disclosure lacked specificity regarding what is deemed "narrow" and "broad," and that it would have been obvious to "broaden" the molecular weight distribution of the claimed polymer:

> [E]ven though Kaulbach generically touts that "high processing rates can be achieved" "[d]espite a narrow molecular weight distribution" ([Kaulbach], 3:59–60), this purported discovery would not have prevented the skilled artisan, at the time of the invention of the '609 patent, from considering other techniques—such as broadening the polymer's

> molecular weight distribution—to achieve higher coating speeds with Sample A11. Based on the evidence presented, we are persuaded that one such technique would have included increasing Sample A11's [melt flow rate] from 24 g/10 min to the recited range of "about 30±3 g/10 min," even if doing so would have required broadening the molecular weight distribution of the polymer beyond the "narrow molecular weight distribution" suggested, but not required or precisely defined, by Kaulbach.

J.A. 51.

The Board's obviousness findings are not supported by substantial evidence. Although the Board may rely on other prior art to inform itself of the state of the art at the time of the invention, the scope of the relevant prior art is that which is "'reasonably pertinent to the particular problem with which the inventor was involved.'" *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535 (Fed. Cir. 1983) (quoting *In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979)). In deciding whether a reference is from a relevant art, it is key to first determine whether the reference is within the inventor's field of endeavor, and if not, "whether the reference is reasonably pertinent to the particular problem confronting the inventor." *In re GPAC Inc.*, 57 F.3d 1573, 1578 (Fed. Cir. 1995) (citing *Wood*, 599 F.2d at 1036). Here, the Board appears to have ignored the express disclosure in Kaulbach that teaches away from the claimed invention and relied on teachings from other references that were not concerned with the particular problems Kaulbach sought to solve. In other words, the Board did not adequately grapple with why a skilled artisan would find it obvious to increase Kaulbach's melt flow rate to the claimed range while retaining its critical "very narrow molecular-weight distribution." Kaulbach col. 3 ll. 34–35, 59–65.

The reasons that the Board provided are not persuasive. The Board found that because "Kaulbach does not

specifically set forth numerical limits on [what constitutes] 'narrow' and 'broad' molecular weight distributions, it is plausible that the skilled artisan may have been able to slightly increase Sample A11's [melt flow rate] of 24 g/10 min to be within the claimed range, and still end up with a 'narrow' [molecular weight distribution] polymer as suggested by Kaulbach, even if that meant slightly 'broadening' Sample A11's [molecular weight distribution]." J.A. 49. This does not explain why a POSA would be motivated to increase Kaulbach's melt flow rate to the claimed range, when doing so would necessarily involve altering the inventive concept of a narrow molecular weight distribution polymer. *See Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (finding no motivation to modify the prior art where doing so "would destroy the basic objective" of the prior art).

This is particularly true in light of the fact that the Kaulbach reference appears to teach away from broadening molecular weight distribution and the known methods for increasing melt flow rate. Specifically, Kaulbach includes numerous examples of processing techniques that are typically used to increase melt flow rate, which Kaulbach cautions should *not* be used due to the risk of obtaining a broader molecular weight distribution. Kaulbach col. 4 ll. 47–50. For example, Kaulbach teaches against using chain transfer agents during polymerization, because they "intrinsically broaden the molecular weight distribution." *Id.*; *see also id.* at col. 5 ll. 23–27 (teaching against using high fluorination temperatures, because doing so "can result in a broadening of the molecular weight distribution and negatively effect [sic] performance"). These factors do not demonstrate that a POSA would have had a "reason to attempt" to get within the claimed range, as is required to make such an obviousness finding. *Procter & Gamble Co. v. Teva Pharm. USA, Inc.*, 566 F.3d 989, 995 (Fed. Cir. 2009) (quoting *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007)).

Daikin points out that Chemours based its case on an unclaimed feature—molecular weight distribution. However, Kaulbach is the sole prior art relied on by the Board, and Kaulbach identified a narrow molecular weight distribution as a key feature. Therefore, modifying Kaulbach as the Board suggested would not be obvious absent additional evidence supporting that finding. As Chemours persuasively argues, the Board needed competent proof showing a skilled artisan would have been motivated to, and reasonably expected to be able to, increase the melt flow rate of Kaulbach's polymer to the claimed range when all known methods for doing so would go against Kaulbach's invention by broadening molecular weight distribution. Appellant's Br. 12.

We hold that the Board relied on an inadequate evidentiary basis and failed to articulate a satisfactory explanation that is based on substantial evidence for why a POSA would have been motivated to increase Kaulbach's melt flow rate to the claimed range, when doing so would necessarily involve altering the inventive concept of a narrow molecular weight distribution polymer.

## III

Before making a determination on the ultimate question of obviousness, the Board analyzed Chemours's objective indicia of nonobviousness. J.A. 52. Chemours argues that the Board legally erred in its analysis of objective indicia of nonobviousness finding an insufficient nexus between the claimed invention and FEP 9494, Chemours's commercial polymer, and its requirement of market share evidence to show commercial success. Appellant's Br. 38. Chemours also argues that the Board misapplied the law on finding that the patents at issue were blocking patents. *Id.* at 39.

In an obviousness inquiry, evidence of objective indicia of nonobviousness must be considered if present. *See Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 315 (Fed.

Cir. 1985). Such evidence includes, for example, the commercial success of the patented invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

A

Chemours argues that the Board improperly rejected an extensive showing of commercial success by finding no nexus on a limitation-by-limitation basis, rather than the invention as a whole. Appellant's Br. 36. Chemours contends that the novel combination of these properties drove the commercial success of FEP 9494. *Id.* Second, Chemours argues the Board improperly required Chemours to proffer market share data to show commercial success.

In general, evidence supporting objective indicia of nonobviousness must be shown to have a nexus to the claimed invention. *In re GPAC Inc.*, 57 F.3d at 1580. In the obviousness analysis, "the claimed invention is, admittedly, a combination of elements that were known individually in the prior art." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1332 (Fed. Cir. 2016). Evidence of commercial success, therefore, can be linked to an "inventive combination of known elements" to show a sufficient nexus. *Id.*; *see also Rambus Inc. v. Rea*, 731 F.3d 1248, 1256–58 (Fed. Cir. 2013) (holding that the Board erred when it found objective evidence lacked a nexus where at least some of the evidence related to the "patented design as a whole").

The Board found no nexus between the claimed invention and the alleged commercial success because Kaulbach disclosed all features except for the claimed melt flow rate. J.A. 56. The Board then found that other prior art of record disclosed melt flow rates of 50 g/10 min. *Id.*

Contrary to the Board's decision, the separate disclosure of individual limitations, where the invention is a unique combination of three interdependent properties, does not negate a nexus. Concluding otherwise would

mean that nexus could never exist where the claimed invention is a unique combination of known elements from the prior art. *See WBIP*, 829 F.3d at 1332.

Chemours also contends that the Board erred in its demand that market share evidence is necessary to sustain a finding of commercial success. Appellant's Br. 38. Chemours argues that this court has held that evidence of market share is not required to prove commercial success. Appellant's Br. 38–39. Chemours contends that sales data alone should be enough for commercial success. *Id.* We agree.

"When a patentee can demonstrate commercial success, usually shown by significant sales in a relevant market, and that the successful product is the invention disclosed and claimed in the patent, it is presumed that the commercial success is due to the patented invention." *J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997); *WBIP*, 829 F.3d at 1329. However, market share data, though potentially useful, is not required to show commercial success. *See Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360–61 (Fed. Cir. 1999) ("Although sales figures coupled with market data provide stronger evidence of commercial success, sales figures alone are also evidence of commercial success."); *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1579 (Fed. Cir. 1997) (relying on sales information to show commercial success); *J.T. Eaton*, 106 F.3d at 1566, 1572 (same).

The Board is certainly entitled to weigh evidence and find, if appropriate, that Chemours's gross sales data were insufficient to show commercial success without market share data. The Board, however, erred in its analysis that gross sales figures, absent market share data, "are inadequate to establish commercial success." J.A. 57.

B

Finally, Chemours contends that the Board erred when it found that the asserted patents were "blocking patents," that blocked others from entering the relevant market. Appellant's Br. 39–41.

A blocking patent is an earlier patent that prevents practice of a later invention—the invention of the patent-in-dispute. *See Acorda Therapeutics, Inc. v. Roxane Labs.*, Inc., 903 F.3d 1310, 1337 (Fed. Cir. 2018) ("A patent has been called a 'blocking patent' where practice of a later invention would infringe the earlier patent."); *Galderma Labs., L.P. v. Tolmar, Inc.*, 737 F.3d 731, 740 (Fed. Cir. 2013); *Prima Tek II, LLC v. A-Roo Co.*, 222 F.3d 1372, 1379 (Fed. Cir. 2000).

The Board determined that the existence of the '609 patent covering the FEP 9494 product would have precluded others from freely entering the market. J.A. 57–58 (citing *Galderma Labs.*, 737 F.3d at 740 (concluding that the inference of nonobviousness based on evidence of commercial success is weak where market entry by others is precluded due to blocking patents)). The Board concluded that the evidence proffered to establish commercial success was weak because the '609 patent covering it blocked others from entering the market. J.A. 58.

The Board erred by misapplying the "blocking patents" doctrine to the challenged patents themselves. A blocking patent is one that is in place before the claimed invention because "such a blocking patent may deter non-owners and non-licensees from investing the resources needed to make, develop, and market such a later, 'blocked' invention.'" *Accorda*, 903 F.3d at 1337. However, the challenged patent, which covers the claimed invention at issue, cannot act as a blocking patent. Accordingly, we reverse the Board as to these findings.

## CONCLUSION

We decline to vacate and remand this case pursuant to *Arthrex*. We hold that the Board's obviousness determination is not supported by substantial evidence and that the Board erred in its analysis of certain objective indicia of nonobviousness. Accordingly, we reverse the Board's determination.

**REVERSED**

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DYK, *Circuit Judge*, concurring in part and dissenting in part.

I agree with Part I of the majority's opinion and with the majority's conclusion in Part III that the Patent Trial and Appeal Board ("Board") erred "in its analysis that

gross sales figures, absent market share data, 'are inadequate to establish commercial success,'" Maj. Op. 13 (quoting J.A. 57), and "by misapplying the 'blocking patents' doctrine to the challenged patents themselves," *id.* at 14.

I respectfully dissent as to Part II. I think that the majority's conclusion that U.S. Patent No. 6,541,588 ("Kaulbach") teaches away from the claimed invention is contrary to our precedent and that the Board properly rejected the teaching away theory.

I

Claim 1 of U.S. Patent No. 7,122,609 ("the '609 patent") covers

> A partially-crystalline copolymer comprising tetrafluoroethylene, hexafluoropropylene in an amount corresponding to a hexafluoropropylene index (HFPI) of from about 2.8 to 5.3, said copolymer being polymerized and isolated in the absence of added alkali metal salt, having a melt flow rate of within the range of about 30±3 g/10 min, and having no more than about 50 unstable endgroups/$10^6$ carbon atoms.

'609 patent col. 10 ll. 15–21.

Like claim 1 of the '609 patent, Kaulbach discloses a copolymer for high-speed extrusion coating of cables or wires. Kaulbach's copolymer is nearly identical to the polymer disclosed by claim 1 of the '609 patent: Both copolymers are tetrafluoroethylene and hexafluoropropylene copolymers with decreased metal contamination and a low number of unstable endgroups. The only material difference between claim 1 and Kaulbach is that Kaulbach discloses (in Sample A11) a melt flow rate of 24 g/10 min, slightly lower than 27 g/10 min, the lower bound of the 30 ± 3 g/10 min rate claimed in claim 1 of the '609 patent.

The majority nevertheless concludes that Kaulbach teaches away from the claimed invention because increasing "Kaulbach's melt flow rate to the claimed range . . . would necessarily involve altering [Kaulbach's] inventive concept of a narrow molecular weight distribution polymer." Maj. Op. 10. I disagree. Although it is true that Kaulbach's invention is a narrow molecular weight distribution polymer, Kaulbach also acknowledges that "the art t[aught] that a broad molecular weight distribution [wa]s needed to achieve such high processing rates," Kaulbach col. 3 ll. 60–62, and that prior art "mixtures ha[d] a very broad molecular weight distribution[,] which[,] according to conventional wisdom, results in an improved extrudability," *id.* col. 1 ll. 57–59. Thus, even though Kaulbach determined that "a narrow molecular weight distribution performs better," it expressly acknowledged the feasibility of using a broad molecular weight distribution to create polymers for high speed extrusion coating of wires. *Id.* col. 3 ll. 62–65. This is not a teaching away from the use of a higher molecular weight distribution polymer.

As our cases make clear, "that 'better alternatives exist in the prior art does not mean that an inferior combination is inapt for obviousness purposes.'" *Bayer Pharma AG v. Watson Lab'ys, Inc.*, 874 F.3d 1316, 1327 (Fed. Cir. 2017) (quoting *In re Mouttet*, 686 F.3d 1322, 1334 (Fed. Cir. 2012)); *see also In re Haase*, 542 F. App'x 962, 969 (Fed. Cir. 2013) (determining that a reference did not teach away from using an aluminum polymer with an ammonium polymer just because the reference "show[ed] better turbidity results when using an aluminum polymer by itself"). The majority's approach impermissibly expands the teaching away doctrine such that it encompasses a reference's mere preference for a particular alternative.

## II

Contrary to the majority's assertion, modifying the molecular weight distribution of Kaulbach's disclosure of a

24 g/10 min melt flow rate to achieve the 27 g/10 min melt flow rate of claim 1 would hardly "destroy the basic objective" of Kaulbach as the majority claims. Maj. Op. 10 (quoting *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016)).

As the Board determined, Kaulbach does not precisely define what constitutes a narrow molecular weight distribution, only defining a "very narrow molecular-weight distribution" of "less than about 2" and "as low as 1.5." Kaulbach col. 3 ll. 34–37. Sample A11 has a measured distribution of 1.6, toward the lower end of this "very narrow" distribution range. Thus, Sample A11's molecular weight distribution could be increased by 0.4 (25%) and still have a "very narrow" molecular weight distribution under Kaulbach. There is no support whatever for the theory that increasing the melt flow rate from 24 g/10 min (Kaulbach) to 27 g/10 min (the '609 patent) (a 12.5% increase) would create more than a 0.4 increase (25%) in the molecular weight distribution and thus be contrary to Kaulbach's supposed teaching to stay within the "very narrow" molecular weight distribution. The majority's contrary conclusion constitutes nothing less than appellate factfinding, factfinding that has no record support.

I would therefore affirm the Board's determination that Kaulbach does not teach away from the claimed invention and remand to the Board for redetermination of the conclusion of obviousness in light of the secondary factors. I respectfully dissent from the majority's contrary conclusion.