

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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CARNEGIE INSTITUTION OF WASHINGTON :
and M7D CORP.,                      :
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    Plaintiffs,                      :
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        -v-                          :
                                     :
FENIX DIAMONDS, LLC,                :
                                     :
    Defendant.                      :
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20-cv-200 (JSR)
OPINION & ORDER

JED S. RAKOFF, U.S.D.J.

This suit concerns two patents for manufacturing diamonds in the laboratory. Carnegie Institution of Washington ("Carnegie") and M7D Corporation ("M7D") -- the assignee and licensee, respectively, of the patents-in-suit -- allege that Fenix Diamonds, LLC ("Fenix") infringed the patents by importing and selling diamonds that were manufactured by non-party Noveau Diamonds LLP ("Noveau") using the patented methods. Fenix now moves for summary judgment on plaintiffs' claims, arguing that Noveau's processes do not infringe the patents.

LEGAL STANDARD

The Federal Rules of Civil Procedure provide that a court "shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). "A fact is material if it might affect the outcome of the suit under the

governing law, and an issue of fact is genuine if the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” Ramos v. Baldor Specialty Foods, Inc., 687 F.3d 554, 558 (2d Cir. 2012) (internal quotation marks omitted). The Court must “draw[] all reasonable inferences in favor of [the] non-movant.” Heublein, Inc. v. United States, 996 F.2d 1455, 1461 (2d Cir. 1993). If “no reasonable trier of fact could find in favor of that party,” then “summary judgment is proper.” Id.

To demonstrate infringement of a patented method, a plaintiff must show that “all steps of the claimed method . . . [are] performed.” Mirror Worlds, LLC v. Apple Inc., 692 F.3d 1351, 1358 (Fed. Cir. 2012). “Where there is a material dispute as to the credibility and weight that should be afforded to conflicting expert reports, summary judgment is usually inappropriate.” Crown Packaging Tech., Inc. v. Ball Metal Beverage Container Corp., 635 F.3d 1375, 1384 (Fed. Cir. 2011). On the other hand, “[w]here the parties do not dispute any relevant facts regarding the accused [method] . . . but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment.” MyMail, Ltd. v. Am. Online, Inc., 476 F.3d 1372, 1378 & n.1 (Fed. Cir. 2007) (quoting Gen. Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 983 (Fed. Cir. 1997)).

Because a summary judgment motion turns on whether factual disputes exist, the Court must consider the factual assertions propounded by each party and the evidence proffered by each party to support those assertions. The Court does not, and usually could not, review the entire factual record. Instead, the moving party must identify the undisputed facts and the evidence that supports them. To that end, the Southern and Eastern Districts of New York have adopted Local Rule 56.1, which requires the moving party to provide "a separate, short and concise statement, in numbered paragraphs, of the material facts as to which the moving party contends there is no genuine issue to be tried." Local Civ. R. 56.1(a). The non-moving party must provide a correspondingly numbered counterstatement, id. R. 56.1(b), and each paragraph in the movant's statement "will be deemed to be admitted for purposes of the motion unless specifically controverted" in the counterstatement, id. R. 56.1(c). Each numbered statement or counterstatement "must be followed by citation to evidence which would be admissible, set forth as required by Fed. R. Civ. P. 56(c)." Id. R. 56.1(d).

Federal Rule of Civil Procedure 56, in turn, provides that a movant for summary judgment may cite to "particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for purposes of the motion

only), admissions, interrogatory answers, or other materials," but an opposing party "may object that the material cited to support or dispute a fact cannot be presented in a form that would be admissible in evidence." Fed. R. Civ. P. 56(c)(1)-(2).

FACTUAL BACKGROUND

Based on the patents-in-suit, the parties' Local Rule 56.1 statements and counterstatements, and the evidence proffered by the parties, the following facts are not subject to genuine dispute. Additional undisputed facts will be set forth, where relevant, elsewhere in this opinion.

A. The Parties

The plaintiffs, Carnegie and M7D, call themselves "pioneers in the laboratory synthesis of high-clarity diamonds." Am. Compl., ECF No. 16, ¶ 4. The defendant, Fenix, acquires and sells laboratory-grown diamonds manufactured by non-party Noveau. Def't's Responses to Pls.' Statement of Undisputed Material Facts, ECF No. 123 ("PSUF"), ¶¶ 30-31. Fenix does not itself manufacture diamonds. Pls.' Responses to Def't's Statement of Undisputed Material Facts, ECF No. 112 ("DSUF"), ¶ 39.

Plaintiffs allege that Noveau's diamond production techniques infringe plaintiffs' patents and that Fenix thus infringes the patents by selling the diamonds it obtains from Noveau. DSUF ¶ 40. Plaintiffs seek (1) declaratory judgment that Fenix has infringed the patents and done so willfully; (2) an injunction against

further infringement; (3) damages, including enhanced damages under 35 U.S.C. § 284; and (4) costs and attorney's fees under 35 U.S.C. § 285. Am. Compl. Prayer for Relief.

B. The '078 Patent

The two patents-in-suit disclose methods for producing laboratory-grown diamonds. PSUF ¶ 1. Diamonds can be grown in the laboratory using chemical vapor deposition ("CVD"). PSUF ¶ 2. A diamond manufacturer can perform CVD by using microwave generators as a power source and manipulating temperature and pressure conditions; this method is known as microwave plasma CVD ("MPCVD"). PSUF ¶ 3. A manufacturer can perform MPCVD in a deposition chamber where air is removed, PSUF ¶ 4, and where a small diamond "seed" is placed, PSUF ¶ 5, by pumping gases into the deposition chamber and applying microwave power, PSUF ¶ 6. During the growth process, the manufacturer can control temperature and pressure, and these controls (along with subsequent steps to improve the diamond, such as cutting and polishing) influence the properties of the lab-grown diamond. PSUF ¶¶ 7, 8. Lab-grown diamonds may have a single crystal (monocrystalline) or many crystals (polycrystalline). PSUF ¶ 9.

A single-crystal diamond is desirable for some applications, such as gemstones. PSUF ¶¶ 11, 12. One of the patents-in-suit, U.S. Patent No. 6,858,078, issued to Hemley et al. (Feb. 22, 2005), Kopinsky Decl. Ex. 2, ECF No. 99-2 (the "'078 Patent" or the

"Patent"), discloses a process for growing a synthetic monocrystalline diamond using MPCVD. PSUF ¶ 1. Prior to the '078 Patent, a single-crystal diamond could be grown using MPCVD, but attempts to grow single-crystal diamonds were either slow or unsuccessful (e.g., resulting in a defective or polycrystalline diamond). PSUF ¶¶ 11-12. The Patent identifies this problem, explaining that prior attempts to produce a single-crystal diamond at higher rates "result[ed] in heavily twinned single crystal diamonds, polycrystalline diamond, or no diamond at all." '078 Patent 1:58-59.

The '078 Patent claims to solve this problem with a key insight: by maintaining temperature gradients of less than 20° Celsius across the entirety of the growth surface, the inventors asserted that one could "create large, high-quality [single-crystal] diamonds with increased . . . growth rates." Id. 13:21-22.

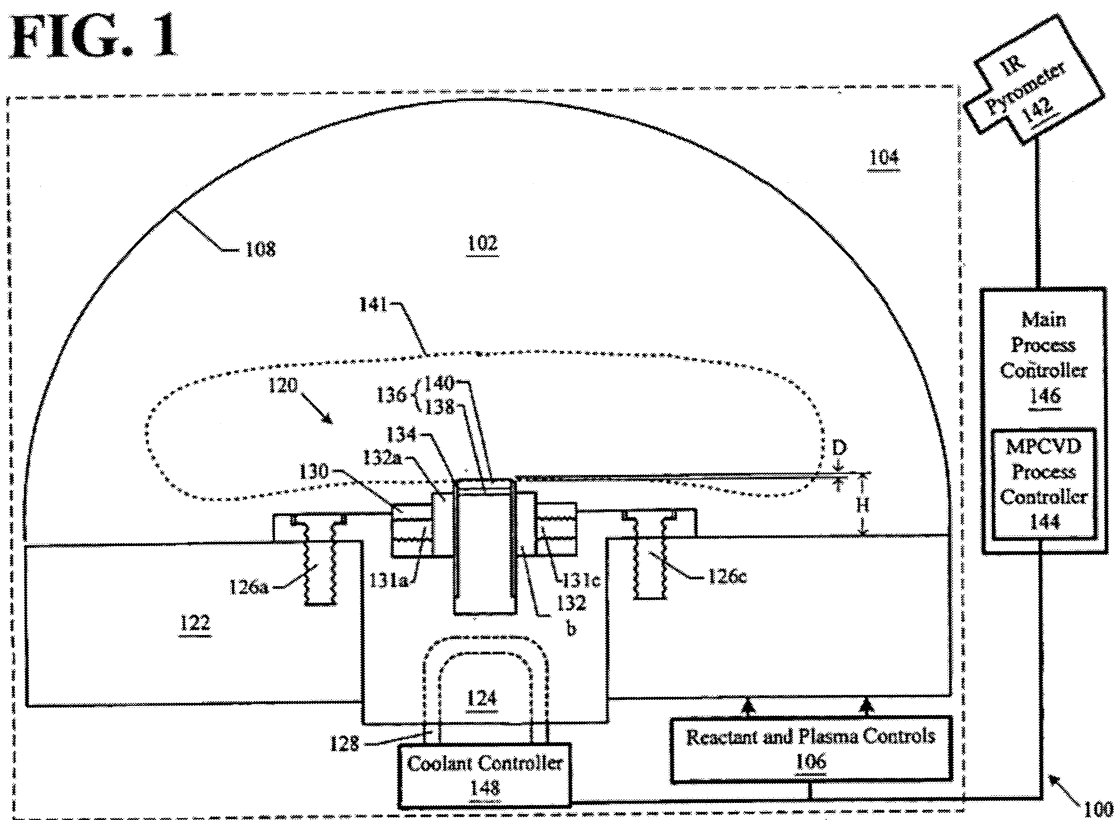
C. The Apparatus

Much of the '078 Patent is devoted to descriptions of apparatuses that could be used to practice the claimed techniques. See '078 Patent, Abstract (disclosing "[a]n apparatus for producing diamond in a deposition chamber," using various devices, "such that all temperature gradients across the growth surface are

less than 20° C"); id. Figs. 1-5; see generally id. at 3:19-13:35 (explaining figures).¹

For example, Figure 1 "is a diagram of a diamond production system, according to an embodiment of the present invention, in which a deposition apparatus is depicted in cross section." Id. at 3:64-67:²

FIG. 1



U.S. Patent Feb. 22, 2005 Sheet 1 of 8 US 6,858,078 B2

¹ Although the apparatuses are only embodiments of the claims, the Court, like the inventors, describes the apparatuses in order to aid the reader's understanding.

² Throughout this opinion, quotations from the '078 Patent omit citations to numbered components of the figures.

The upper portion of the diagram depicts a bell-jar-shaped deposition chamber (108). Vacuum pumps (not shown) "draw[] out the air inside of the chamber." Id. at 4:18. Then, a set of "plasma electrodes" (not shown) generates plasma in the chamber. Id. at 4:19-20. A diamond "seed" rests in the deposition chamber, and the plasma flows over the top of the diamond seed, depositing new diamond growth. Id. at 4:64-67.

In the center of the chamber, on top of the deposition chamber floor (122), is the apparatus for holding the diamond seed, the "specimen holder assembly." Id. at 4:23-28; see also Fig. 2a (depicting the specimen holder assembly from a different angle). The specimen holder assembly includes a "stage" (124) made from a material with high thermal conductivity, such as molybdenum, which is attached to the deposition chamber floor. Id. at 4:31-34. Atop that stage is a "set ring" (130) which contains "set screws" that are used to tighten "collets," which, in turn, hold in place a "sheath" (134), also made of material with high thermal conductivity. Id. at 4:44-52. Inside the sheath is the diamond seed (136). Id. at 4:47-48. The Patent explains that "the sheath is a holder, which makes a thermal contact with a side surface of the diamond . . . and acts as a heat-sink to prevent the formation of twins or polycrystalline diamond along the edges of the growth surface of the diamond." Id. at 4:48-55.

In the upper-right of the diagram is an infrared pyrometer (142), "which is used to monitor the temperature of the diamond seed and later the grown diamond during the growth process without contacting the diamond." Id. at 6:6-9. There are also several computers with the capability to adjust the process in various ways. E.g., id. at 6:27-34. These include "the main process controller," which, "[b]ased upon temperature measurements from the pyrometer," "controls the temperature of the growth surface such that all temperature gradients across the growth surface are less than 20° C. by adjusting at least one of microwave power to the plasma, the coolant flow rate, coolant temperature, gas flow rates and reactant flow rate." Id. at 6:65-7:4.

In Figure 1, the diamond growth surface is a distance H above the deposition chamber floor and a distance D above the top edge of the sheath. Id. at 4:59-62, 5:1-3. The Patent teaches that the distance D should be kept within a certain range:

The distance D should be sufficiently large enough to expose the edges of the growth surface of the diamond to the plasma. However, the distance D can not be so large as to prevent the heat-sinking effect of the sheath that prevents the formation of twins or polycrystalline diamond along the edges of the growth surface of the diamond. Thus, D should be within a specified distance range, such as 0-1.5 mm.

Id. at 5:3-9. "As the distance D increases" -- that is, as the diamond grows -- "the heat-sinking capacity of the sheath for the top edges of the growth surface of the diamond reduces." Id. at

7:66-8:2. In Figure 1, the distances D and H "are manually set using the screws of the set ring." Id. at 5:11-12. Therefore, "the growth process is periodically halted so that the position of the diamond can be adjusted downward with respect to the sheath" Id. at 8:6-8.

Figure 3 illustrates another embodiment of the claims. Many of the components of Figure 3 "are substantially the same" as in Figure 1. Id. at 8:28-29. However, Figure 3 has the purported advantage that one utilizing the apparatus in Figure 3 would not need to stop for manual adjustments to D and H. The apparatus depicted in Figure 3 has a "diamond actuator member" and a "holder actuator member," which can be used to raise or lower the diamond and sheath, respectively, thereby controlling distances H and D without needing to stop for manual adjustments. Id. at 10:5-11.

The Patent includes diagrams depicting the steps one would follow to use these apparatuses to practice the claimed techniques. Id. Fig. 6 (depicting the steps one would follow using the apparatus shown in Fig. 1; see id. at 10:55-58); id. Fig. 7 (depicting the steps one would follow using the apparatus shown in Fig. 3; see id. at 11:60-63).

D. The Claims

The '078 Patent includes dozens of claims, but plaintiffs argue only that Fenix has infringed two independent claims (claims 1 and 12) and certain claims dependent on them (claims 6, 7, 11,

and 16). DSUF ¶¶ 11, 12. The two independent claims asserted are:

- "Claim 1: A method for diamond production, comprising: controlling temperature of a growth surface of the diamond such that all temperature gradients across the growth surface are less than 20° C; and growing single-crystal diamond by microwave plasma chemical vapor deposition on the growth surface at a growth temperature in a deposition chamber having an atmosphere with a pressure of at least 130 torr." '078 Patent 14:64-15:4.
- "Claim 12: A method for diamond production, comprising: controlling temperature of a growth surface of the diamond such that all temperature gradients across the growth surface are less than 20° C; and growing single-crystal diamond by microwave plasma chemical vapor deposition on the growth surface at a temperature of 900-1400° C." Id. 15:31-37.

In May 2020, the Court held a claim construction hearing pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), and its progeny, and the Court adopted the following constructions:

- "Single-crystal diamond" is "a stand alone diamond having insubstantial non-monocrystalline growth." Opinion and Order, ECF No. 42, at 27.
- "The growth surface" means "the surface upon which diamond growth is occurring." Id. at 20.
- The phrase "controlling temperature of a growth surface of the diamond such that all temperature gradients across the growth surface are less than 20° C" means "controlling temperature of a growth surface of the diamond such that all temperature gradients across the growth surface are maintained at less than 20° C." Id. at 18.
- "[G]rowing single-crystal diamond . . . on the growth surface at a growth temperature in a deposition chamber having an atmosphere with a pressure of at least 130 torr" means "growing single-crystal diamond . . . on the growth surface,

which is set at a growth temperature and located in a deposition chamber with an atmosphere set at a pressure of at least 130 torr." Id. at 23-24.

- "[G]rowing single-crystal diamond . . . on the growth surface at a temperature of 900-1400° C" means "growing single-crystal diamond . . . on the growth surface, which is set at a temperature of 900-1400° C." Id. at 24.

E. The '189 Patent

The second patent-in-suit, United States Patent No. US RE41,189, issued to Li et al. (Apr. 6, 2010) (the "'189 Patent"), describes a method for repairing defects in lab-grown diamonds known as "annealing." Plaintiffs' operative amended complaint alleges that Noveau's manufacturing process infringes the '189 Patent. However, plaintiffs are no longer pursuing this claim. DSUF ¶ 12 ("Plaintiffs are no longer asserting that Fenix infringes the '189 Patent in this action.").

ANALYSIS

I. The '078 Patent

Fenix moves for summary judgment with respect to the '078 Patent on the ground that Noveau's manufacturing process does not infringe the patent, for two reasons. First, Fenix argues that Noveau does not "grow[] single-crystal diamond . . . on the growth surface" (a limitation on both asserted claims), since Noveau grows diamond with substantial amounts of polycrystallinity. Second, Fenix argues that Noveau does not "control[] temperature of a growth surface of the diamond such that all temperature gradients

across the growth surface are less than 20° C" (again, a limitation on both asserted claims). In Fenix's view, not only does Noveau not, in fact, maintain such gradients; Noveau does not even attempt to maintain such gradients.

To determine whether a reasonable factfinder could find that Noveau grows single-crystal diamonds on the growth surface, while maintaining 20° C gradients, the Court must look to the evidence concerning Noveau's manufacturing process.

A. Noveau's Manufacturing Process

In this respect, Fenix relies upon a joint affidavit signed by Bakulbhai Limbasiya and Chirag Limbasiya, Kopinski Decl. Ex. 5, ECF No. 99-5 (the "Affidavit" or "Aff."), as well as the deposition testimony of Chirag Limbasiya, ECF No. 129-2 ("C. Limbasiya Dep."). The Limbasiyas are affiliated with Noveau and familiar with its manufacturing process. See C. Limbasiya Dep. ¶ 1; Aff. ¶ 3. The Affidavit describes Noveau's manufacturing process as follows:

Diamond seeds are on the flat upper surface of a substrate plate. One infrared pyrometer is above the deposition chamber. The pyrometer points at the center of one growth surface. . . . We don't move the pyrometer during growth.

Aff. ¶ 3.

Differences between Noveau's process and the process described in the '078 Patent are readily apparent. The Limbasiyas aver that Noveau places many diamond seeds together on a flat substrate holder, rather than placing a diamond seed in a sheath,

as depicted throughout the '078 Patent. Compare Aff. Views 2-4 with '078 Patent Figs. 1, 2a, 3, 5. Recall that the '078 Patent describes the importance of the sheath: "the sheath is a holder, which makes a thermal contact with a side surface of the diamond . . . and acts as a heat-sink to prevent the formation of twins or polycrystalline diamond along the edges of the growth surface of the diamond." '078 Patent 4:48-55 (emphasis added). The '078 Patent cautions that if the diamond growth extends too far above the sheath, this could "prevent the heat-sinking effect of the sheath that prevents the formation of twins or polycrystalline diamond along the edges of the growth surface of the diamond." Id. at 5:4-7[[]].

Of course, as the plaintiffs emphasize and Fenix concedes, the figures and embodiments in the '078 Patent are not limitations on its claims; the inventors' claims sweep more broadly than any particular illustration. Perhaps Noveau has discovered a way to practice the claimed methods without using a sheath. Still, the Court notes the lack of a sheath because it calls into question plaintiffs' claims: how can Noveau limit the temperature gradient without "a heat-sink to prevent the formation of twins or polycrystalline diamond along the edges of the growth surface of the diamond"? See id. at 4:48-55.

B. Growth of Single-Crystal Diamond on the Growth Surface

Fenix's response is simple: Noveau does not "prevent the formation of twins or polycrystalline diamond"; it accepts and deals with the polycrystalline material by cutting it off, polishing, and annealing. Therefore, Fenix argues, Noveau does not practice the patented method.

The Limbasiyas authenticate and describe several images of diamonds grown by Noveau. As the affiants explain, "[t]here is thick polycrystalline on each diamond." Aff. ¶ 5.E; see also Aff. Views 5-10 (showing the non-monocrystalline growth, which is visible to the naked eye). Indeed, plaintiff's own expert concedes that Noveau's diamond blocks contain "non-diamond or graphitized polycrystalline diamond," which "is something different than the single-crystal diamond material growing epitaxially at the growth surface, and [which] is cut away as it does not form part of the single crystal diamond portion." Capano Rpt., Kopinski Decl. Ex. 4, ECF No. 99-4, ¶ 172. Fenix argues that, because plaintiffs concede that Noveau's manufacturing process involves non-monocrystalline growth and because that growth is obviously not insubstantial, Noveau does not "grow[] single-crystal diamond . . . on the growth surface," a limitation on both asserted claims.

Carnegie offers three responses. First, Carnegie contends that the Affidavit and the Limbasiya Deposition are inadmissible. This argument is both mistaken and irrelevant.³

To begin with, the Affidavit and Limbasiya deposition, contrary to Carnegie's claim, clearly meet the threshold requirement for consideration on summary judgment, viz., that "the material cited to support or dispute a fact can[] be presented in a form that would be admissible in evidence." Fed. R. Civ. P. 54(c)(2). Plaintiffs offer no reason to doubt that the Limbasiyas' testimony regarding Nouveau's manufacturing processes is made on personal knowledge and would be admissible on direct examination at trial. And Federal of Civil Procedure 56(c)(4) explicitly permits a movant or opponent to use an affidavit or declaration "on personal knowledge" if it "set[s] out facts that would be admissible in evidence, and show[s] that the affiant or declarant is competent to testify on the matters asserted."⁴

³ The Court, however, rejects Fenix's assertion that the Affidavit is notarized and is, therefore, a self-authenticating acknowledged document admissible under Federal Rule of Evidence 902(8). To be sure, when a party offers into evidence a self-authenticating document, the proponent need not otherwise demonstrate the document's authenticity. But the party must still demonstrate that the document offers testimony that, if offered through live testimony at trial, would be admissible in all other respects, such as relevance, the witness's competency, etc.

⁴ The Court also rejects plaintiffs' argument that the deposition transcript is not properly considered on this summary judgment record. In a teleconference on October 29, 2020, plaintiffs informed the Court that, pursuant to a Hague Convention request

Furthermore, even if all of plaintiffs' evidentiary arguments prevailed and the Court excluded the Limbasiyas' Affidavit and deposition testimony at the summary judgment stage, that would not change the result. Plaintiffs must point to some evidence from which a reasonable factfinder could conclude that Noveau grows single-crystal diamond on the growth surface, and plaintiffs offer no such evidence. Granted, Dr. Capano, one of plaintiffs' experts, performed a rocking-curve analysis and concluded that some of Noveau's diamonds "have insubstantial amounts of non-monocrystalline growth." PSUF ¶ 43. But, as plaintiffs concede,

issued several months earlier, they were scheduled to depose Chirag Limbasiya in India in November 2020. Plaintiffs sought leave to proceed with the deposition after the Court-ordered close of discovery, and Fenix did not oppose the request. The parties contemplated (correctly) that the deposition would be complete after the summary judgment motion had been briefed. All parties indicated that they did not think the deposition would affect the summary judgment proceedings. However, plaintiffs' counsel indicated that plaintiffs imagined that this deposition testimony would be used the same way other deposition testimony had been used in the case; if it was capable of being reduced to admissible evidence, then the parties would cross that bridge at that time. At oral argument on Fenix's summary judgment motion, plaintiffs' counsel indicated that plaintiffs would provide the deposition testimony to the Court once formal translation was complete. In January 2021, the parties notified the Court that they had received a copy of the deposition transcript, and the Court permitted the parties to file excerpts from that deposition. Apparently disappointed with Limbasiya's testimony, plaintiffs now ask the Court not to consider the Limbasiya deposition. Consistent with plaintiffs' previous position, however, the Court will treat the deposition transcript no differently than other evidence offered in support of or opposition to summary judgment. In any event, the Limbasiya deposition is cumulative because the Court would reach the same result on this motion based on the Affidavit alone.

the rocking curve analysis was conducted "on a finished-diamond sample," Pls.' Opp. to Mot. for Summ. J., ECF No. 108, at 7, i.e., a sample collected after Noveau removed the non-monocrystalline regions. Similarly, plaintiffs cite Fenix's marketing claims that its diamonds are of the "highest quality" and Fenix's admission in this case that, when it ultimately sells the diamonds, they have insubstantial polycrystalline diamond and insubstantial graphite inclusions. PSUF ¶¶ 40, 110, 111. However, because this evidence relates exclusively to the finished product, not to the diamonds as grown, it is neither disputed nor relevant to the question presented: whether Noveau grows single-crystal diamond on the growth surface.

Second, plaintiffs argue that the parasitic growth on the interstices of Noveau's diamond blocks is to be expected and is, therefore, "insubstantial" (or, at least, that there is a genuine dispute of material fact regarding substantiality). Plaintiffs' expert opines that "[u]nder [Fenix's] interpretation, it would be impossible to grow single crystal material via MPCVD because polycrystalline growth on the edges (e.g., 010 faces) during MPCVD is inevitable." Capano Rpt., Kopinski Decl. Ex. 4, ECF No. 99-4, ¶ 280. Plaintiffs argue that "[a]pplying Fenix's logic would thus have an absurd result: no MPCVD diamond process could ever infringe because of a necessary byproduct, one that isn't necessarily even diamond at all." Opp. 7-8.

This argument is one part slippery slope fallacy and one part motion for reconsideration. The slippery slope aspect of the argument is unsound because the "absurd result" plaintiffs fear is not, in fact, absurd. Perhaps it is the case that "no MPCVD diamond process could ever infringe because of a necessary byproduct"; that would just mean that the Patent is non-enabled, a question the factfinder will resolve at trial. But the slippery slope argument is also unsound because Fenix does not argue that the patented method produces no non-monocrystalline growth, only that it produces insubstantial monocrystalline growth. And plaintiffs offer no basis for a reasonable factfinder to conclude that Noveau's non-monocrystalline growth is insubstantial; indeed, one can plainly see that the non-monocrystalline growth is extensive. See Aff. Views 6-10.

The thinly disguised motion-for-reconsideration aspect of plaintiffs' argument is readily apparent in the words of plaintiffs' expert:

Court's Construction	Plaintiffs' Construction
<p>"The construction of the term 'growth surface' must therefore not exclude polycrystalline growth."</p> <p><u>Markman</u> Order, ECF No. 42, at 20.</p>	<p>"I do not interpret growth surface to include the non-diamond or polycrystalline diamond that grows at the periphery of the single crystal diamond."</p> <p>Capano Rpt., Kopinski Decl. Ex. 4, ¶ 173.</p>

<p>"Plaintiffs' proposed construction . . . would wrongly restrict [growth surface] to include only surface area where single-crystal diamond is growing."</p> <p><u>Markman</u> Order 19.</p>	<p>"In my opinion, the growth surface is the region where single-crystal diamond grows . . . and does not include the surrounding areas."</p> <p>Capano Rpt. ¶ 167.</p>
<p>"Since the Patent uses [growth surface] to refer to the entire surface where hydrocarbon gases are accruing into new diamond, the claim construction must impart the same meaning."</p> <p><u>Markman</u> Order 19.</p>	<p>"No, I am not willing to include the entire surface upon which hydrocarbon gases are accruing [in 'growth surface']. I think that's contrary to the Court's construction."</p> <p>Capano Dep. Tr., Kopinski Decl. Ex. 16, ECF No. 126-1, at 180:21-181:4.</p>

At Markman, the Court construed "growth surface" to mean "the surface upon which diamond growth is occurring." Opinion and Order, ECF No. 42, at 20. Plaintiffs would instead construe the phrase to include only the surface on which single-crystal diamond growth is occurring. The Court rejects plaintiffs' disguised motion for reconsideration, which identifies no legal or factual basis for departing from the law of the case. Because plaintiffs' argument is premised not on a factual dispute but on a disagreement with the Court's claim construction, the question presented is a legal one and summary judgment is proper. MyMail, Ltd. v. Am. Online, Inc., 476 F.3d 1372, 1378 & n.1 (Fed. Cir. 2007).

Finally, plaintiffs argue that the Court should deny Fenix's motion for summary judgment because plaintiffs were not able to

take possession of any raw diamond bricks before Noveau cut and polished them. Plaintiffs thus could not analyze the peripheral growth that Fenix claims is polycrystalline. See Quinn v. Syracuse Model Neighborhood Corp., 613 F.2d 438, 445 (2d Cir. 1980) ("At least when the party opposing the motion has not been dilatory in seeking discovery, summary judgment should not be granted when he is denied reasonable access to potentially favorable information.").

Plaintiffs chose to file this suit against Fenix and not against Noveau, and with that decision came certain risks. One of those risks was that plaintiffs would need to seek discovery from Noveau through the Hague Convention, rather than directly through this Court. The Court permitted plaintiffs every opportunity to seek such discovery, and in April of this year, the Court finally received a letter from the Indian Government enclosing the evidence plaintiffs obtained through the Hague Convention. Indeed, the deposition of Chirag Limbasiya, which plaintiffs now argue should not be considered on summary judgment, was obtained by plaintiffs through the Hague Convention. The Hague Convention process has now run its course, and to the extent plaintiffs tried, but were unable, to obtain diamond samples from non-party Noveau through the Hague Convention, plaintiffs ran that risk by suing Fenix and not Noveau.

Insofar as plaintiffs argue that Fenix controls Noveau and thus has access to, and should have produced, diamond samples, the Court has already rejected this argument. Memorandum Order, ECF No. 63 (denying plaintiffs' motion to compel production by Fenix). Plaintiffs offer no evidence to disturb the Court's prior conclusion that Fenix lacks the practical ability to require Noveau to turn over in-process diamond bricks.

Furthermore, plaintiffs fail to show how they would benefit from accessing the raw diamond. Dr. Capano, plaintiffs' expert, acknowledged that he thought the interstitial substance in Noveau's diamond bricks was some combination of polycrystalline diamond, polycrystalline graphite, and non-diamond carbon -- not single-crystal diamond. Capano Dep. Tr., Kopinski Decl. Ex. 16, ECF No. 126-1, at 178:3-11. Plaintiffs have not remotely suggested (let alone offered evidence to show) that the substantial interstitial regions that are obvious to the naked eye in Noveau's diamond batches might, in fact, be single-crystal diamond. Therefore, plaintiffs have not shown how they might create a genuine dispute of material fact by testing the diamond blocks.

For these reasons, no reasonable factfinder could conclude that Noveau "grows single-crystal diamond . . . on the growth surface," as the Patent uses those terms.

C. Maintenance of 20-Degree Temperature Gradients

As a second independent basis for summary judgment, Fenix argues that a reasonable factfinder would necessarily conclude that Noveau does not maintain 20-degree temperature gradients across the growth surface, a limitation on both asserted independent claims. Fenix offers three bases for this conclusion.

First, Fenix argues that a side contact holder is essential to maintaining the temperature gradient beneath 20° Celsius; Noveau uses an open holder design, making such a gradient impossible. To be sure, a side-contact holder is what the embodiments, figures, and examples of the '078 Patent had in mind. However, plaintiffs maintain that the 20-degree gradient does not require a side-contact substrate holder. They offer the expert testimony of Dr. Capano, who claims, based on a technique called finite element analysis, that it is possible to practice the 20-degree gradient limitation without using a side-contact holder. Dr. Capano's report creates a genuine dispute of material fact as to whether it is possible to practice the 20-degree limitation without a side-contact holder.

Second, Fenix recycles its prior argument that there is substantial polycrystalline growth. Thus, Fenix argues, the gradient must be greater than 20° Celsius. After all, Fenix points out, the purpose of the 20-degree gradient limitation was to eliminate or substantially reduce polycrystalline growth; if

Noveau's process produces substantial polycrystalline growth, then it must be because Noveau's gradients exceed 20° Celsius.

This argument adds nothing new. If (as the Court has already found) Noveau's process yields substantial non-monocrystalline growth on the growth surface, then Noveau's process does not infringe the Patent, regardless of whether the reason for that growth is a failure to practice the correct temperature gradient.

Furthermore, this argument is unsound because it exemplifies a logical fallacy known as "affirming the consequent." Here is an example of the fallacy:

- 1. If the Yankees ever lose ten games in a row, then Judge Rakoff will paint his chambers a mournful gray.*
- 2. Judge Rakoff's chambers are painted gray.*
- 3. Therefore, the Yankees must have lost ten games in a row.*

The reasoning is unsound because it could be that the Yankees never lost ten games in a row (God willing), but Judge Rakoff's chambers were painted gray because that was the only color the General Services Administration would allow, or because Judge Rakoff wished the color to match his hair, or any of a dozen other reasons. Here, Fenix has committed the same fallacy:

- 1. If the temperature gradients exceed 20° C, then there will be polycrystalline growth.*
- 2. There was polycrystalline growth.*
- 3. Therefore, the gradients must have exceeded 20° C.*

The reasoning is unsound because it could be that the temperature gradients were maintained at less than 20° C, but there was polycrystalline growth for some other reason (wrong temperature, wrong pressure, wrong mix of gases, etc.). Therefore, the Court rejects Fenix's argument that the polycrystalline growth demonstrates a failure to maintain the temperature gradient.

Finally, Fenix argues that undisputed record evidence demonstrates that Noveau neither limits its temperature gradients to less than 20° C nor even tries to do so. In this respect, the Limbasiyas aver that "Noveau [does not] compute or measure temperature difference on the growth surface during normal growth." Aff. ¶ 5.K. The affiants further aver that "Fenix asked us to try." Id. The result was that after about four hours of growth, the temperature at the periphery of the growth surface was 44° C greater than the temperature at the center of the growth surface, id. ¶ 5.L, and after about fifty-two hours of growth, the temperature at the periphery was approximately 51° C greater than the temperature at the center, id. ¶ 5.M.

Fenix's counsel produced to plaintiffs, purportedly on behalf of Noveau, related data on which Fenix now relies (e.g., thermal camera data allegedly showing temperature gradients that exceed 20° Celsius). Plaintiffs point out that this evidence was not produced by Noveau or its counsel and was not produced in response to any discovery request or through the Hague Convention.

Fenix's counsel has taken the position throughout this litigation that it does not represent Noveau. Plaintiffs object that the thermal camera data was created for the purpose of this litigation based on Fenix counsel's instructions to Noveau, but that communications between Fenix's counsel and Noveau have not been disclosed, leaving plaintiffs unable to probe the accuracy of the data Noveau produced for this litigation. Plaintiffs argue that, without the communications between Fenix's counsel and Noveau, plaintiffs have no reasonable way to cross-examine this data. Plaintiffs add that its experts Dr. Capano and Dr. Gleason contend that, without further information, the thermal camera data is unreliable.

Plaintiffs have the better of this argument. In July 2020, the Court denied plaintiffs' motion to compel production of certain documents by Fenix, finding that plaintiffs had not demonstrated, as a practical matter, that Fenix could access Noveau's documents; the Court adheres to that finding. See Memorandum Order, ECF No. 63. At the same time, however, the Court warned that "a party may not 'blow hot or cold' and, having persuaded the court in discovery of its inability to produce such documents, later seek to use them to help its case at trial." Id. at 2 (quoting Shcherbakovskiy v. Da Capo Al Fine, Ltd., 490 F.3d 130, 138 (2d Cir. 2007)).

Concededly, the documents that Fenix persuaded the Court it could not produce last July are not the same documents at issue

here, but the principle the Court then articulated applies here. The Limbasiyas concede that it was Fenix who "asked us to try" making thermal measurements, and Fenix's counsel, not Noveau, ultimately produced the resulting data to plaintiffs outside the Hague Convention, yet Fenix failed to produce the communications between Fenix (or its counsel) and Noveau (or its counsel) which would provide necessary context for that data collection. The Court will not permit Fenix, based on its corporate relationship with Noveau, to produce and then rely upon a self-serving subset of relevant documents to demonstrate the temperature gradients that occur during Noveau's growth. The Court excludes all of Fenix's evidence purporting to show temperatures or temperature gradients during Noveau's diamond growth.

On the other hand, the Limbasiyas' simple testimony that "Noveau [does not] compute or measure temperature difference on the growth surface during normal growth," Aff. ¶ 5.K, does not suffer from the same problem. The plaintiffs were permitted to depose the affiants under the Hague Convention, and they did so. The Court will consider the fact that Noveau does not even measure temperature gradients during diamond growth, and this fact supports an inference that Noveau does not maintain 20-degree temperature gradients. Indeed, the Patent itself instructed the practitioner to measure temperature gradients during growth. '078 Patent 6:65-7:4 (noting that "the main process controller"

"controls the temperature of the growth surface such that all temperature gradients across the growth surface are less than 20° C," "[b]ased upon temperature measurements from the pyrometer"). Especially given that Noveau does not measure gradients, plaintiffs point to no evidence from which a reasonable factfinder could conclude that Noveau does, in fact, maintain gradients that do not exceed 20° C during growth.

For the foregoing reasons, the Court grants summary judgment to Fenix on plaintiffs' claims based on the '078 Patent because, construing all facts and drawing all reasonable inferences in plaintiffs' favor, no reasonable factfinder could conclude either that Noveau "grows single-crystal diamond . . . on the growth surface" or that it "controls temperature of a growth surface of the diamond such that all temperature gradients across the growth surface are less than 20° C."

II. The '189 Patent

Although the operative Amended Complaint includes claims based on the '189 Patent, plaintiffs concede that they "are no longer asserting that Fenix infringes the '189 Patent in this action." DSUF ¶ 12. Plaintiffs are even willing to concede that the claims should be dismissed with prejudice and, at oral argument, plaintiffs represented that they had executed a binding covenant not to sue.

Nevertheless, the parties disagree about how the Court should dispose of plaintiffs' claims and Fenix's related counterclaims. Fenix argues that the Court should grant summary judgment in its favor because Fenix met its burden as movant to show the lack of a genuine dispute of material fact. Plaintiffs argue that the Court must dismiss the claims and counterclaims relating to the '189 Patent for lack of subject matter jurisdiction because, given the binding covenant, the dispute is moot and the Court lacks subject matter jurisdiction.

The Court begins with Fenix's counterclaims relating to the '189 Patent, which allege (1) that Fenix does not infringe the patent, (2) that the patent is invalid, and (3) that the patent is unenforceable because the '189 Patent (or its predecessor before reissue) was procured through inequitable conduct. These claims all arise under the Declaratory Judgment Act. In addition, Fenix seeks attorney's fees under 35 U.S.C. § 285.

The Federal Circuit has explained that "[a] useful question to ask in determining whether an actual controversy exists [in a case like this] is what, if any, cause of action the declaratory judgment defendant may have against the declaratory judgment plaintiff." Benitec Australia, Ltd. v. Nucleonics, Inc., 495 F.3d 1340, 1344 (Fed. Cir. 2007). In Benitec, as in the case at bar, a patentholder sued for alleged infringement and the defendant asserted counterclaims under the Declaratory Judgment Act.

However, after unfavorable developments for the plaintiff, it moved to dismiss its claims without prejudice under Federal Rule of Civil Procedure 41(a)(2). The district court granted the motion and dismissed the counterclaims for lack of subject matter jurisdiction under the Declaratory Judgment Act. The defendant appealed. Before the case was resolved on appeal, the plaintiff covenanted not to sue the defendant for any infringement predating the dismissal of the case by the district court. The Federal Circuit affirmed, finding that after the covenant, the plaintiff had no viable claims against the defendant, so the court lacked subject matter jurisdiction over the defendant's counterclaims under the Declaratory Judgment Act.

In the case at bar, given the binding covenant not to sue executed by plaintiffs and the fact that defendants' counterclaims arise under the Declaratory Judgment Act, Benitec controls. Accordingly, defendants' declaratory judgment counterclaims relating to the '189 Patent are dismissed for lack of subject matter jurisdiction. Defendants' claim for attorney's fees remains.

Plaintiffs' affirmative claims, however, are in a different procedural posture from those in Benitec. The Amended Complaint claims not only declaratory judgment but also monetary damages (among other relief); therefore, despite plaintiff's covenant,

their still-pending claims state an injury-in-fact sufficient to demonstrate standing.

Moreover, unlike the plaintiff in Benitec, who filed a Rule 41(a)(2) motion, here the plaintiffs do not offer a procedural vehicle for the dismissal of their claims. Rather, the plaintiffs argue that with an eleventh-hour covenant they can unilaterally deprive the Court of subject matter jurisdiction over claims for damages that remain pending before this Court.

Benitec does not support this proposition, nor is the Court aware of any case that does. The Federal Rules explicitly provide a mechanism for a plaintiff to unilaterally drop its claims by filing a notice of voluntary dismissal. See Fed. R. Civ. P. 41(a)(1)(A)(i). However, a plaintiff must do so before issue is joined. Here, the plaintiffs lost their ability to unilaterally dismiss their claims when Fenix filed its answer. Covenanting not to sue (or even covenanting not to prosecute this suit) does not offer a substitute for Rule 41(a)(1)(A)(i), nor, given that plaintiffs seek damages, does it deprive the Court of subject matter jurisdiction over plaintiffs' still-pending claims.

Therefore, the Court declines plaintiffs' oral motion to dismiss plaintiffs' claims relating to the '189 Patent. And there can be no doubt that Fenix is entitled to summary judgment on those claims; plaintiffs offer no evidence from which a reasonable factfinder could conclude that Nouveau's methods infringe the '189

Patent. Accordingly, the Court grants summary judgment to Fenix on plaintiffs' claims relating to the '189 Patent.

For the foregoing reasons, Fenix's motion for summary judgment, ECF No. 97, is granted and the Court enters judgment for Fenix dismissing all plaintiffs' claims with prejudice. Fenix's counterclaims relating to the '189 Patent are dismissed for lack of subject matter jurisdiction, except insofar as Fenix seeks attorney's fees. Fenix's counterclaims relating to the '078 Patent were not the subject of any dispositive motion and will proceed to trial. The parties are directed to jointly call Chambers by June 21, 2021 to set a date for trial on Fenix's remaining counterclaims.

SO ORDERED.

Dated: New York, NY
June 16, 2021



JED S. RAKOFF, U.S.D.J.