

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BIO-RAD LABORATORIES INC. and THE
UNIVERSITY OF CHICAGO,

Plaintiffs,

v.

10X GENOMICS, INC.,

Defendant.

No. 15-cv-152-RGA

MEMORANDUM OPINION

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July 24, 2019


ANDREWS, U.S. DISTRICT JUDGE:

Presently before the Court is Plaintiffs' post-trial motion (D.I. 512). Plaintiffs seek a permanent injunction, attorneys' fees, enhanced damages, supplemental damages, and pre- and post-judgment interest. (*Id.*). I have reviewed the parties' briefing and the related *amicus curiae* submission from the Broad Institute, Inc. (D.I. 513, 524, 536, 522). For the following reasons, Plaintiffs' motion is **GRANTED** with respect to the permanent injunction, supplemental damages, and pre- and post-judgment interest, and **DENIED** with respect to the attorneys' fees and enhanced damages.

I. BACKGROUND

On February 12, 2015, RainDance Technologies, Inc. and the University of Chicago filed suit against 10X Genomics, Inc. alleging infringement of several patents. On May 30, 2017, Bio-Rad Laboratories Inc. substituted for RainDance. (D.I. 180). I held a jury trial from November 5 to 13, 2018.¹ Only three patents remained at issue—U.S. Patent Nos. 8,889,083 (“the ’083 patent”), 8,304,193 (“the ’193 patent”), and 8,329,407 (“the ’407 patent”). (*See* D.I. 499). The jury found all three patents valid and infringed, that the infringement was willful, and that Plaintiffs were entitled to \$23,930,718 in damages. (D.I. 476).

II. PERMANENT INJUNCTION

Courts “may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.” 35 U.S.C. § 283. “According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief.” *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 391 (2006). “A plaintiff must demonstrate: (1) that it

¹ I cite to the trial transcript as “Tr.”

has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.” *Id.* “The essential attribute of a patent grant is that it provides a right to exclude competitors from infringing the patent.” *Acumed LLC v. Stryker Corp.*, 551 F.3d 1323, 1328 (Fed. Cir. 2008).

For the following reasons, I find that Plaintiffs have satisfied the *eBay* factors in support of their proposed permanent injunction. (D.I. 513, Ex. A).

A. Irreparable Injury

Direct competition strongly suggests the potential for irreparable harm absent an injunction. *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 702 F.3d 1351, 1363 (Fed. Cir. 2012) (vacating denial of a permanent injunction based on finding no irreparable injury because the record showed “direct and substantial competition between the parties”); *see also Douglas Dynamics, LLC v. Buyers Prod. Co.*, 717 F.3d 1336, 1345 (Fed. Cir. 2013) (“Where two companies are in competition against one another, the patentee suffers the harm—often irreparable—of being forced to compete against products that incorporate and infringe its own patented inventions.”). A patentee may establish irreparable harm by showing “that [the parties] were competitors and that [the patentee] lost market share while [the infringer] gained it.” *See Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1338 (Fed. Cir. 2013) (upholding the district court’s grant of a permanent injunction).

Plaintiffs argue that Bio-Rad and 10X are competitors in “the market for products that perform genetic analysis on a droplet platform,” and within that market, they are “undisputedly head-to-head competitors with their single-cell droplet products.” (D.I. 513 at 6-7). At trial,

10X's counsel stated that Bio-Rad's ddSEQ product competes directly with 10X's single cell product. Tr. at 92:3-7, 1519:4-6. Ms. Tumolo, Bio-Rad's President of Life Sciences, agreed. *Id.* at 168:4-8.

10X argues that Bio-Rad is not a direct competitor. 10X has five accused product lines,² each of which allegedly "profiles different aspects of a sample and provides fundamentally different biological information, using different chemistries, data analysis, and visualization software." (D.I. 524 at 7). Of those five, 10X argues that the only one that may compete with Bio-Rad is the single cell product, but that customers view Bio-Rad's product as inferior. (*Id.* at 5, 7-8).

I find that 10X and Bio-Rad are direct competitors in the market for products that perform genetic analysis on a droplet platform. 10X admitted at trial that its single cell product competes directly with Bio-Rad's ddSEQ. Tr. at 92:3-7. Each of 10X's products are variants of the same infringing droplet process. (*See* D.I. 536 at 4; D.I. 476). Regardless, 10X's single cell product accounts for over 80% of 10X's sales. (*See* D.I. 536 at 4; PTX 1255). The fact that customers may prefer 10X's single cell product to ddSEQ does not negate the fact that the products are competing.

Plaintiffs argue that, as direct competitors, 10X is causing Bio-Rad lasting competitive harm by using infringing technology to gain a lead in the emerging droplet market and derail Bio-Rad's product roadmap. (D.I. 513 at 7). Ms. Tumolo testified that Bio-Rad "felt a lot of pressure to get [its single cell] product on the market because 10X had a really, really big head start, frankly we felt using our technology." Tr. at 130:3-6. Plaintiffs assert that the same head

² There are six accused products: Chromium Genome/Exome, Chromium Genome/Exome with Kynar, GemCode Long Read, Chromium Single Cell 3', Chromium Single Cell 3' with Kynar, and Chromium Single Cell V(D)J with Kynar. (D.I. 476). 10X does not state which products belong to which product line. (D.I. 524 at 7).

start has allowed 10X to collaborate with early adopters and key opinion leaders and develop “sticky” customer relationships. (D.I. 513 at 7-8). As a result, 10X has cultivated a market bias towards its single cell product and Bio-Rad has been forced to increase its marketing costs. (*Id.* at 8).

Plaintiffs have shown that they will suffer irreparable competitive harm absent an injunction. Plaintiffs are being forced to compete with 10X’s products that incorporate and infringe their own patented inventions. *See Douglas Dynamics*, 717 F.3d at 1345. Based on those infringing products, 10X has established a strong market lead over Bio-Rad—10X has sold over 1000 of its single cell units, while Bio-Rad has sold less than 100. (D.I. 398, Ex. Z, at K-2, J-3, J-4). It seems likely that, absent an injunction, Bio-Rad will struggle to regain its lost market share and will continue to suffer associated harms such as increased marketing costs.

The party seeking an injunction must also show a causal nexus between the infringement and the harm. The infringing features do not need to be the “exclusive or predominant reason” that consumers buy the accused products, but there must be “‘some connection’ between the patented features and the demand for [the accused] products.” *Apple Inc. v. Samsung Elecs. Co.*, 809 F.3d 633, 642 (Fed. Cir. 2015). That is, “the patented features impact consumers’ decisions to purchase the accused devices.” *Id.*

10X argues that Plaintiffs have failed to show a causal nexus because they have not proven that “simply using droplets—as opposed to other, non-patented features—drives demand for, or contributes to the success of, any 10X products.” (D.I. 524 at 5). 10X applies the wrong standard. Plaintiffs need not show that the patented features drive demand, but just that they “impact consumers’ decisions to purchase the accused devices.” *Apple*, 809 F.3d at 642; *Genband US LLC v. Metaswitch Networks Corp.*, 861 F.3d 1378, 1384-85 (Fed. Cir. 2017). The

patented droplet technology is the foundation of 10X's droplet products. In fact, 10X tried and failed with other methods of partitioning such as capsules and wells before moving to droplets. Tr. at 953:1-954:13; (D.I. 513 at 10). There is clearly "some connection" between the patented technology and the demand for 10X's products. Therefore, Plaintiffs have shown that they will suffer irreparable harm from 10X's infringement absent injunctive relief.

B. Remedies Available at Law

Damages are inadequate to compensate for loss of market share. *Douglas Dynamics*, 717 F.3d at 1345 ("[M]ere damages will not compensate for a competitor's increasing share of the market, a market which Douglas competes in, and a market that Douglas has in part created with its investment in patented technology."); *E.I. DuPont de Nemours & Co. v. Unifrax I LLC*, 2017 WL 4004419, at *5 (D. Del. Sept. 12, 2017) ("Monetary damages are inadequate to compensate Plaintiff here because Plaintiff would be forced to compete against a rival gaining market share with Plaintiff's technology."), *aff'd*, 921 F.3d 1060 (Fed. Cir. 2019). The underlying concerns are particularly strong here because 10X's infringement coincided with the emergence of the droplet market, thus allowing 10X to capture and define the market with its infringing technology. *See Illumina, Inc. v. Qiagen, N.V.*, 207 F. Supp. 3d 1081, 1093 (N.D. Cal. 2016) (finding the patentee would suffer irreparable harm in part because, being at a "crucial inflection point in the development of the market," the infringer would be allowed to "capture and define the market with pirated technology").

10X argues that damages are adequate based on quantifiable licensing fees derived from Bio-Rad's internal documents. (D.I. 524 at 13). I disagree. Although Bio-Rad seems to have had some interest in licensing the asserted patents (DTX 1481 at 26), they were never actually licensed. *Cf. Nichia Corp. v. Everlight Americas, Inc.*, 855 F.3d 1328, 1343 (Fed. Cir. 2017)

(“[T]he fact of the grant of previous licenses, the identity of the past licensees, the experience in the market since the licenses were granted, and the identity of the new infringer all may affect the district court’s discretionary decision concerning whether a reasonable royalty from an infringer constitutes damages adequate to compensate for the infringement.”) (quoting *Acumed LLC v. Stryker Corp.*, 551 F.3d 1323, 1328 (Fed. Cir. 2008)).

Therefore, I find damages inadequate to compensate for 10X’s infringement.

C. Balance of Hardships

When assessing the balance of hardships, it is appropriate for courts to consider “the parties’ sizes, products, and revenue sources.” *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 862-63 (Fed. Cir. 2010), *aff’d*, 564 U.S. 91 (2011). Not relevant, however, are the expenses incurred in creating the infringing products and the consequences to the infringer of its infringement, such as the cost of redesigning the infringing products. *Id.* at 863.

An injunction would prevent 10X from selling any of its current products. (D.I. 524 at 14). 10X thus argues that an injunction would devastate the company, possibly causing it to go out of business. It is clear, however, that 10X has been pursuing a design-around for some time. At the September 5, 2018 discovery conference, 10X’s counsel represented that the components of the new design were complete but the “full commercialized product” was not. (D.I. 365 at 20:25-21:11). In January 2019, 10X’s Dr. Schnall-Levin testified that 10X intended to have its redesign on sale in April 2019 and that 10X was “confident that the chip will work as well” as the existing product. (D.I. 537, Ex. 4 at 19:19-22, 25:17-25). His only caveat about an April launch was that 10X might not have “all the training materials” and “quite as much rigor around having naive users try [the product] out.” (*Id.* at 25:25-26:7). Thus, it now being July 2019, I would expect 10X to be nearly ready, if not ready, to bring its design-around to market.

On the other hand, Bio-Rad is undoubtedly a much larger operation. Bio-Rad is a multibillion-dollar company with over 9,000 products. (D.I. 524 at 14 (citing Bio-Rad 10-Q at 29)). Bio-Rad's ddSEQ product accounted for only 0.2% of its \$2 billion in sales in 2017. (*Id.* (citing D.I. 398, Ex. Z at J-2)). Those revenues, however, are greatly outstripped by Bio-Rad's investments in its droplet business. Ms. Tumolo testified that Bio-Rad has spent over half a billion dollars to develop its droplet products, including acquisitions and \$20 to \$25 million a year on research and development. Tr. at 121:6-22, 125:23-126:5.

“[O]ne who elects to build a business on a product found to infringe cannot be heard to complain if an injunction against continuing infringement destroys the business so elected.” *Windsurfing Int'l Inc. v. AMF, Inc.*, 782 F.2d 995, 1003 (Fed. Cir. 1986). The fact that 10X has gained commercial success from its infringing products and thus risks losing that success does not shield 10X from injunctive relief. *See i4i*, 598 F.3d at 863 (finding the defendant “not entitled to continue infringing simply because it successfully exploited its infringement”); *Broadcom Corp. v. Qualcomm Inc.*, 543 F.3d 683, 704 (Fed. Cir. 2008) (same). Regardless, given that 10X has a design-around that is complete or very close to complete, I do not think 10X is likely to be “devastated” if enjoined from selling its existing products. On the other hand, although Bio-Rad's ddSEQ currently accounts for only a fraction of Bio-Rad's revenues, Bio-Rad has invested substantial resources in developing its droplet business. Therefore, I find the balance of hardships weighs in favor of granting injunctive relief, or, at minimum, is neutral.

D. Public Interest

It is generally in the public interest to uphold patent rights. *Broadcom*, 543 F.3d at 704 (citing *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1547 (Fed. Cir. 1995)). However, “[i]f a patentee's failure to practice a patented invention frustrates an important public need for the

invention, a court need not enjoin infringement of the patent. Accordingly, courts have in rare instances exercised their discretion to deny injunctive relief in order to protect the public interest.” *Rite-Hite*, 56 F.3d at 1547 (internal citations omitted).

10X’s main argument is that its customers, many of whom are in the middle of long-term studies, would lose valuable data and funding if forced to stop using their 10X systems and switch to new systems mid-study. (D.I. 524 at 15-17); *see also* D.I. 522, Ex. 1. That argument would be compelling if it were true. Plaintiffs have made clear that 10X’s current customers will not be enjoined from using their installed systems so long as 10X pays the appropriate damages. (D.I. 536 at 1, 8-9). “By excluding users who purchased or licensed infringing [10X] products before the injunction’s effective date, the injunction greatly minimizes adverse effects on the public.” *See i4i*, 598 F.3d at 863 (upholding the district court’s finding that the public interest favored injunctive relief). To extent that the public may be harmed because there are no current alternatives to 10X’s products, both 10X and Bio-Rad have indicated that they will be releasing new products soon. As discussed, 10X’s design-around is largely complete and expected to work as well as its existing products. *See supra* Section II.C. Bio-Rad has also asserted that it expects to release a new system this year “to leap-frog 10X in performance.” (D.I. 513 at 8). Therefore, I find the public interest weighs in favor of granting injunctive relief.

E. Scope of the Permanent Injunction

1. Enjoined Products and Notice of Injunction

Plaintiffs request that 10X be enjoined from making, selling, offering to sell, using and importing the accused products and “those no more than colorably different,” and from otherwise infringing the ’083, ’193, and ’407 patents. (D.I. 513 at 12 & Ex. A). As discussed, Plaintiffs agree that 10X may continue to sell consumables, at a 15% royalty, for use with already sold

systems. (D.I. 536 at 9). Plaintiffs also include a notice provision requiring 10X to provide a copy of the injunction to all affiliates, including customers and “any company to which 10X intends in the future to directly or indirectly sell” the enjoined products. (D.I. 513, Ex. A § III).

10X asserts that Plaintiffs’ proposed injunction is overbroad. First, 10X argues that its existing instruments and reagents, when combined with its new redesigned chips, will not infringe the asserted patents. Therefore, 10X should not be enjoined from making, using, or selling its existing instruments and reagents for use with the new chips. (D.I. 524 at 17-18). 10X essentially asks the Court to find that its new redesigned product does not infringe the asserted patents. An injunction has satisfactory scope if it prohibits infringement by the accused products and those that are not “colorably different.” *United Constr. Prod., Inc. v. Tile Tech, Inc.*, 843 F.3d 1363, 1371 (Fed. Cir. 2016) (discussing Federal Rule of Civil Procedure 65(d)). Whether 10X’s new product is “colorably different” is a separate legal issue that has yet to be addressed and which may never need to be addressed.

Second, 10X argues that it should be able to sell its products that do not compete against Bio-Rad’s ddSEQ product. (D.I. 524 at 18). I do not think that is an appropriate distinction for purposes of the injunction. The parties are competitors in the droplet market, *see supra* Section II.A, and each of 10X’s accused products uses the same infringing droplet system.

Third, 10X argues that Bio-Rad’s notice provision is unduly burdensome and unnecessary. 10X argues that it should not be required to give notice to “its thousand customers” and companies to which it intends to sell enjoined products, because customers will not be able to practice the asserted patents once 10X stops selling its consumables (reagents and chips). (D.I. 524 at 18). 10X will not be enjoined, however, from continuing to sell consumables to customers with existing systems. Given that 10X almost certainly maintains customer lists, I do

not think it will be unduly burdensome for 10X to make reasonable efforts to provide its existing customers with notice. *See Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 2008 WL 5210843, at *2 (D. Del. Dec. 12, 2008) (upholding the notice provision of a permanent injunction). However, I do not see why 10X should be required to provide notice to customers to which it “intends in the future” to sell the accused products. 10X will be enjoined from making any sales to new customers regardless of whether 10X had intended to make those sales or not.

2. Start Date

10X requests that if an injunction is entered, it be stayed pending appeal. (D.I. 524 at 19-20). Four factors guide the stay analysis: “(1) whether the stay applicant has made a strong showing that he is likely to succeed on the merits; (2) whether the applicant will be irreparably injured absent a stay; (3) whether issuance of the stay will substantially injure the other parties interested in the proceeding; and (4) where the public interest lies.” *Standard Havens Prod., Inc. v. Gencor Indus., Inc.*, 897 F.2d 511, 512 (Fed. Cir. 1990) (quoting *Hilton v. Braunskill*, 481 U.S. 770, 776 (1987)). As discussed, Plaintiffs have shown that they will be irreparably injured absent an injunction and that the public interest lies in their favor. *See supra* Sections II.A, II.D. 10X argues that it is likely to succeed on the merits on appeal. (D.I. 524 at 19-20). I disagree. 10X merely repeats two arguments from its Rule 50(b) motion for judgment as a matter of law. (D.I. 510 at 1-9). I addressed those arguments in my opinion denying 10X’s motion. (D.I. 559 at 7-10, 13-15).³ Therefore, I find the factors weigh against a stay.

At minimum, 10X requests a nine-month sunset period to allow it to finish its design-around and for researchers to complete their ongoing experiments and transition to the new system. (D.I. 524 at 20-22). Again, because customers with existing systems will be allowed to

³ Although 10X raises a reasonable argument under the doctrine of equivalents, *see infra* p. 17, I do not think it has made a “strong showing” of likely success on appeal.

continue to use those systems, the injunction does not need to account for ongoing experiments. As for the design-around, 10X stated in September 2018 that the design was complete, and in January 2019 that it intended for the new product to be on sale in April 2019. It is now July 2019. It would follow that 10X is ready, or nearly ready, to sell its design-around. *See supra* Section II.C. To allow 10X an additional nine months would be a windfall. Therefore, I do not think a sunset period is warranted.

Thus, I will deny the request for stay pending appeal. However, I will delay the effective date of the permanent injunction by two weeks from its entry in order to give the Court of Appeals an opportunity to consider any expedited appeal relating to the denial of the stay.

III. ATTORNEYS' FEES AND ENHANCED DAMAGES

A. Attorneys' Fees

“The court in exceptional cases may award reasonable attorney fees to the prevailing party.” 35 U.S.C. § 285. “[A]n ‘exceptional’ case is simply one that stands out from others with respect to the substantive strength of a party’s litigating position (considering both the governing law and the facts of the case) or the unreasonable manner in which the case was litigated. District courts may determine whether a case is ‘exceptional’ in the case-by-case exercise of their discretion, considering the totality of the circumstances.” *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 572 U.S. 545, 554 (2014). In assessing the totality of the circumstances, the Court may consider “frivolousness, motivation, objective unreasonableness (both in the factual and legal components of the case) and the need in particular circumstances to advance considerations of compensation and deterrence.” *Id.* at 554 n.6. The party seeking fees must show that a case is exceptional by a preponderance of the evidence. *Id.* at 557-58.

Plaintiffs argue that this is an exceptional case because 10X willfully infringed, had unusually weak defenses, and engaged in substantial litigation misconduct. (D.I. 513 at 13-22). For the following reasons, I do not find this case to be exceptional.

1. Willful Infringement

Plaintiffs argue that the jury's willfulness finding favors awarding fees, particularly given 10X's "contrived and baseless" attempts to rebut willfulness. (D.I. 513 at 13-14).

Although willfulness is a factor relevant to an exceptional case determination, it is not dispositive. *See Octane Fitness*, 572 U.S. at 554 ("[T]here is no precise rule or formula for making [exceptional case] determinations, but instead equitable discretion should be exercised") (internal citation and quotation marks omitted); *Energy Heating, LLC v. Heat On-The-Fly, LLC*, 889 F.3d 1291, 1307 (Fed. Cir. 2018) (citing case law from 1986 requiring "an explanation of why the case was not exceptional in the face of an express finding of willful infringement").

Plaintiffs focus on testimony from Dr. Ness, co-founder and former Chief Technology Officer of 10X, which 10X presented as part of its rebuttal to willfulness. (D.I. 513 at 13-14). Dr. Ness initially stated that he formed the personal view that 10X's products, because of their high number of partitions, did not infringe the asserted patents. Tr. at 930:8-18. He later admitted that he did not have any belief as to whether the products infringed while at 10X. *Id.* at 934:22-935:5. Therefore, he could not testify as to 10X's state of mind to rebut Plaintiffs' allegation of willful infringement. Dr. Ness's testimony does not support awarding fees. At most, Plaintiffs have shown that the testimony was irrelevant to willfulness, an issue for which Plaintiffs bore the burden of proof. That does not make this an exceptional case.

2. Strength of Defenses

Plaintiffs assert that 10X relied on unsupportable invalidity and non-infringement defenses. Plaintiffs take a “kitchen sink” approach, arguing that none of the following invalidity theories were viable: (1) the ’193 and ’407 patents are anticipated by, or obvious in view of, the Quake reference, (2) the ’193 and ’407 patents are not enabled, and (3) the ’083 patent is indefinite. Plaintiffs, however, did not move for summary judgment on any of 10X’s invalidity positions presented at trial, which suggests that Plaintiffs did not always view those positions as frivolous. (D.I. 524 at 13); *see also Stragent, LLC v. Intel Corp.*, 2014 WL 6756304, at *5 (E.D. Tex. Aug. 6, 2014). Plaintiffs further assert that 10X did not have any legally cognizable non-infringement theories. I do not think Plaintiffs have shown that 10X’s theories were frivolous, unreasonable, or brought in bad faith.

First, Plaintiffs address 10X’s theory that the ’193 and ’407 patents are invalid in view of the Quake reference. Plaintiffs assert that the same theory was previously rejected by the Patent Office, which declined to institute an IPR on either patent and upheld the validity of both on *ex parte* reexamination. (D.I. 513 at 15; D.I. 26 at 2; D.I. 378). Although the Patent Office did consider invalidity arguments based on Quake, 10X asserts that its theories at trial relied on Quake in combination with other references not considered by the Patent Office. (D.I. 524 at 23). It was not unreasonable for 10X to argue invalidity based on those different combinations.

Plaintiffs also argue that 10X’s expert, Dr. Chang, presented “half-baked” invalidity arguments and made no effort to show reasonable expectation of success in combining the prior art references. (D.I. 513 at 15). I disagree. Dr. Chang provided reasonable explanations for his theories and gave testimony relating to reasonable expectation of success. Tr. at 968:20-1017:8; *id.* at 983:20-984:14, 998:6-23, 999:1-20.

Second, Plaintiffs address 10X's argument that Dr. Ismagilov, an inventor of the asserted patents, copied portions of those patents from Quake. (D.I. 513 at 15-16). The Court allowed 10X to proceed with its copying theory for the limited purpose of impeaching Dr. Ismagilov's credibility as witness. (D.I. 429). Plaintiffs argue that 10X blatantly ignored the Court's order and attempted to use the copying as direct evidence of invalidity. During openings, 10X stated that the language in the asserted patents was "copied essentially verbatim" from Quake. Tr. 99:24-101:23. 10X failed to mention that the copying only related to Dr. Ismagilov's credibility, despite representing that it would be "very explicit." *Id.* at 7:20-24, 108:20-24. While questioning Dr. Ismagilov, however, 10X did make clear that it was addressing "the issue of credibility." *Id.* at 306:18-327:3, 328:6-330:4. The Court also followed 10X's questioning with a limiting instruction. *Id.* at 327:4-328:5 ("[A]ll this testimony has been for a very limited purpose and it has only to do with . . . evaluating Professor Ismagilov's credibility in his testimony."). Therefore, although close, I do not think 10X crossed the line with respect to its copying theory.

Third, Plaintiffs address 10X's enablement and indefiniteness theories. (D.I. 513 at 16-17). 10X argued that the '193 and '407 patents are not enabled because they fail to teach reactions outside the microfluidic chip and the necessary surfactants, and that the '083 patent is indefinite because the claimed surface tension relationship is impossible to measure. Plaintiffs rely on select citations from the trial record to argue that 10X's positions were frivolous or unreasonable. (D.I. 513 at 16-17). I do not find Plaintiffs' arguments persuasive. Regarding enablement, Plaintiffs also imply that 10X acted in bad faith by presenting evidence that the claimed inventions required "bushy" surfactants. (*Id.* at 16). Plaintiffs assert that the "bushy" language was not presented during discovery and that 10X used new images at trial depicting its

surfactants as “bushier” than in internal documents prepared before litigation. (D.I. 513 at 16). Plaintiffs do not argue that 10X failed to disclose their legal theory of lack of enablement of the necessary surfactants. (*Id.* at 16-17). I do not think the use of the term “bushy” and related demonstratives at trial indicates bad faith.

Fourth, Plaintiffs argue that 10X had no non-infringement defenses. (D.I. 513 at 17-18). 10X presented non-infringement arguments for every accused product and asserted patent. Tr. at 1526:24-1536:7.⁴ Regardless, if true, the fact that 10X did not have a non-infringement theory for each of the twelve pairings between asserted patents and accused products does not make this an exceptional case.⁵ 10X’s primary defense was invalidity.

The theories that 10X did present were not unreasonable. I denied summary judgment of infringement of the ’407 patent because there was a material dispute of fact as to “whether the thermal cycler is part of the ‘microfluidic system.’” (D.I. 351 at 4). I reiterated that finding in my *Daubert* opinion (D.I. 361 at 5), and later denied Plaintiffs’ Rule 50(a) motion, Tr. at 1338:6-24. I do not think an argument that survived multiple challenges should be considered meritless.

For the ’193 patent, 10X argued that the Chromium Genome/Exome product did not meet the “autocatalytic reaction” limitation because the Landlord reaction was not “autocatalytic.” Tr. at 1120:25-1121:3; (D.I. 510 at 9-10). Despite having found that 10X relied on an incorrect reading of my claim construction, I do not think 10X’s view was unreasonable. (D.I. 559 at 12-13).

⁴ Plaintiffs assert, without citation, that 10X had no defense for infringement of the ’193 patent by the GemCode Long Read product. (D.I. 513 at 18). That does not appear to be true. *See* Tr. at 1533:2-1534:12 (arguing the accused products do not meet the microfluidic system limitation in the ’193 patent).

⁵ Six products were accused of infringing the ’083 patent, two products were accused of infringing the ’193 patent, and four products were accused of infringing the ’407 patent. (D.I. 476).

For the '083 patent, 10X applied its indefiniteness theory to argue that the accused products did not meet the claimed surface tension relationship because that relationship could not be measured. Although I disagree, I do not think that argument was unreasonable. (*See* D.I. 559 at 10-11, 27). 10X also argued that the products with Kynar did not meet the “non-fluorinated microchannel” limitation. That theory, at least regarding literal infringement, clearly had merit as the jury found no literal infringement. (D.I. 476 at 3). Further, although 10X lost under the doctrine of equivalents, I noted on several occasions that 10X had raised legitimate concerns regarding violation of the “non-fluorinated” limitation. Tr. at 379:3-8, 438:1-11; (D.I. 559 at 7-10).

3. Litigation Misconduct

“[L]itigation misconduct and unprofessional behavior may suffice, by themselves, to make a case exceptional under § 285.” *Monolithic Power Sys., Inc. v. O2 Micro Int’l Ltd.*, 726 F.3d 1359, 1366 (Fed. Cir. 2013). “[M]any forms of misconduct can support a district court’s exceptional case finding, including . . . litigation misconduct; vexatious, unjustified, and otherwise bad faith litigation; a frivolous suit; or willful infringement.” *Id.* Plaintiffs argue that 10X engaged in a pattern of misconduct including, violation of the protective order, pursuit of “baseless positions,” and misrepresentations during trial. (D.I. 513 at 18-22).

It is undisputed that 10X violated the protective order. (D.I. 524 at 26). I already addressed the issue and determined that the violation was not done in bad faith. (D.I. 350 at 33:24-34:11).⁶

⁶ Plaintiffs make much of the fact that at the hearing over four months before trial, 10X represented that the violating attorney played a key role in its damages case. (D.I. 350 at 20:24-21:9). As Plaintiffs note, that attorney did not visibly participate in the trial. What Plaintiffs do not mention is that 10X switched lead trial counsel between the hearing and the trial. Regardless, 10X asserts that the attorney remained involved in preparing damages arguments. (D.I. 524 at 26).

As for the “baseless positions,” Plaintiffs cite to several instances where the Court ruled against 10X. (D.I. 513 at 21). I do not think those instances rise to the level of litigation misconduct. Both parties, in the name of zealous advocacy, made innumerable arguments over the course of this litigation, some which were undoubtedly weak. The fact that Plaintiffs were able to identify a handful of 10X’s weaker arguments does not show that 10X engaged in a pattern of misconduct.

Lastly, Plaintiffs point to several statements made by 10X’s counsel during trial that allegedly misrepresented key facts. (D.I. 513 at 21-22). Only two statements, both during closing, could possibly be significant—(1) “there’s evidence in the record specifically from PTX 333 at Page 66 that the [10X] chips come in from Germany,” Tr. at 1532:4-6, and (2) “Quake expressly says the fluids used in the invention may contain additive or surfactants such as fluorinated oil,” *id.* at 1541:3-6.

I already addressed the Germany statement at length. *Id.* at 1572:2-1587:20. Plaintiffs argue that page 66 of PTX 333 was not discussed at trial or in evidence and was excluded by the Court’s order on motions *in limine*. (D.I. 513 at 21). PTX 333 appears to be a document from other unrelated actions, which was likely within the scope of my order granting Plaintiffs’ motion *in limine* to exclude reference to those actions. Tr. at 1577:2-10, 1587:16-18; (D.I. 371 at 1). However, there seemed to be a great deal of confusion over whether page 66 specifically had been admitted into evidence and I determined that neither party had acted improperly. Tr. at 1572:2-1587:20.

Regarding the Quake statement, Plaintiffs argue that 10X mischaracterized the evidence because Quake never uses fluorinated oil as a carrier fluid, “which is a crucial distinction from the invention.” (D.I. 513 at 21). 10X’s expert, Dr. Chang, testified that Quake “mentions

fluorinated oil,” but does not disclose its use as a carrier fluid. He opined, however, that it would have been obvious to a person of ordinary skill in the art to use it as a carrier fluid. Tr. at 981:12-18. I do not think 10X’s statements in closing are inconsistent with the testimony from Dr. Chang or an intentional misrepresentation of the record.

Therefore, considering the totality of the circumstances, Plaintiffs have failed to meet their burden of showing that this is an exceptional case warranting attorneys’ fees.

B. Enhanced Damages

“[T]he court may increase the damages up to three times the amount found or assessed.” 35 U.S.C. § 284. Section 284 “provid[es] that punitive or increased damages could be recovered in a case of willful or bad-faith infringement.” *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1930 (2016) (quotation marks omitted). “The *Halo* test merely requires the district court to consider the particular circumstances of the case to determine whether it is egregious.” *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 875 F.3d 1369, 1382 (Fed. Cir. 2017).

Although not required, the court may consider the *Read* factors as part of its analysis. *Presidio*, 875 F.3d at 1382 (citing *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 827 (Fed. Cir. 1992)). The *Read* factors include: (1) whether the infringer deliberately copied the ideas or design of another, (2) whether the infringer, when he knew of the other’s patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed; (3) the infringer’s behavior as a party to the litigation; (4) defendant’s size and financial condition; (5) closeness of the case; (6) duration of defendant’s misconduct; (7) remedial action by defendant; (8) defendant’s motivation for harm; and (9) whether defendant attempted to conceal its misconduct. 970 F.2d at 827.

Plaintiffs do not address *Read* factors one or nine. (*See* D.I. 513 at 23). For factor one, 10X argues that testimony from Drs. Ness and Hindson⁷ shows that 10X did not rely on the asserted patents to develop its products. (D.I. 524 at 28). In view of the jury's willful infringement verdict, which I upheld on JMOL, it is not clear to what extent 10X considered the asserted patents while developing its accused products. (*See* D.I. 559 at 22). However, it is clear that Plaintiffs have not identified any evidence of copying. For factor nine, it is undisputed that the accused products were freely available for purchase. (*Id.*). Thus, I find both factors one and nine weigh against enhanced damages.

For *Read* factor two, Plaintiffs argue that the jury found willful infringement and that 10X had no good-faith belief of non-infringement. (D.I. 513 at 23). I agree that, in view of the willful infringement verdict, 10X did not have a good-faith belief of non-infringement. (*See* D.I. 559 at 22). Thus, I find factor two weighs in favor of enhanced damages.

For *Read* factor three, Plaintiffs argue that 10X engaged in extensive litigation misconduct. (D.I. 513 at 23). As discussed, I do not think 10X's behavior rose to the level of misconduct. *See supra* Section III.A.3. Thus, I find factor three weighs against enhanced damages.

For *Read* factor four, Plaintiffs argue that 10X is the market leader and has made significant revenues from its infringing products. (D.I. 513 at 23). 10X admits that it has made tens of millions of dollars in yearly revenue but asserts that it has yet to turn a profit. (D.I. 524 at 29 (citing D.I. 246, Ex. 10 at C-1 (10X quarterly financials from 2015-2017))). Thus, I find factor four is neutral.

⁷ Dr. Hindson is co-founder and Chief Scientific Officer of 10X. (D.I. 559 at 18).

For *Read* factor five, Plaintiffs argue that 10X presented weak defenses and that the jury quickly ruled in their favor.⁷ (D.I. 513 at 23). As discussed, I do not think 10X's defenses were so weak as to be meritless. *See supra* Section III.A.2. In fact, the jury found in 10X's favor on literal infringement of the '083 patent for the products with Kynar. *Id.* Thus, I find factor five weighs against enhanced damages.

For *Read* factor six, Plaintiffs again argue that 10X engaged in litigation misconduct, which persisted throughout the case. (D.I. 513 at 23). Thus, for the same reasons as for factor three, I find factor six weighs against enhanced damages.

For *Read* factor seven, Plaintiffs argue that 10X has taken no post-trial remedial actions. (*Id.*). It is undisputed that 10X is actively working on a design-around product. *See supra* Section II.C. On the other hand, despite 10X's representations, nothing has been launched. Thus, I find factor seven is neutral.

For *Read* factor eight, Plaintiffs argue that the market for droplets is rapidly expanding and has the potential to be worth up to a billion dollars. (D.I. 513 at 23). I do not think evidence of market incentives is probative of motivation for harm warranting enhanced damages. “[T]he fact that the infringer acted pursuant to a financial motive does not distinguish this case from the garden-variety infringement case.” *Idenix Pharm. LLC v. Gilead Scis., Inc.*, 271 F. Supp. 3d 694, 702 (D. Del. 2017), *appeal pending*, No. 18-1691 (Fed. Cir.) (citing *Sprint Commc'ns Co. L.P. v. Time Warner Cable, Inc.*, 2017 WL 978107, at *14 (D. Kan. Mar. 14, 2017)); *see also Nox Med. Ehf v. Natus Neurology Inc.*, 2018 WL 6427686, at *4 (D. Del. Dec. 7, 2018) (finding evidence of “harm incidental to direct business competition” did not show “motivation for harm”). Thus, I find factor eight is neutral.

⁷ I do not think the length of jury deliberation is a meaningful metric.

On balance, the *Read* factors weigh against enhanced damages. Plaintiffs essentially repeat the arguments they made under § 285. Just as those arguments did not persuade me that this case is exceptional, they do not persuade me that the facts of this case are egregious.⁸ Therefore, despite the jury’s finding of willful infringement, I do not think enhanced damages are warranted.

IV. SUPPLEMENTAL DAMAGES AND INTEREST

Plaintiffs seek prejudgment supplemental damages and pre- and post-judgment interest. (D.I. 513 at 23-29). 10X only objects as to the interest rates that should apply. (D.I. 524 at 30).

The jury’s damages award covered 10X sales through July 1, 2018. (*Id.* at 23). The supplemental damages account for the sales made from July 1, 2018 through the date of the judgment, November 13, 2018. (*Id.* at 24). The supplemental damages shall be calculated based on the jury’s implied 15% royalty rate.⁹ (D.I. 513 at 25; D.I. 515 ¶ 11).

Plaintiffs also seek interest on their damages. Prejudgment interest should be awarded “absent some justification for withholding such an award.” *Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 657 (1983). The only dispute is over the interest rate and compounding period that should apply. Plaintiffs argue for the prime rate, compounded quarterly. (D.I. 513 at 25-28). 10X argues for the 1-year Treasury constant maturity rate, compounded annually. (D.I. 524 at 30; D.I. 527 ¶ 3). “A trial court is afforded wide latitude in the selection of interest rates and may award interest at or above the prime rate.” *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545 (Fed. Cir. 1991) (citations omitted). The decision to award compound interest is also within the trial court’s discretion. *Rite-Hite Corp.*, 56 F.3d at 1555 (“It has been recognized that

⁸ I gave the jury a willfulness instruction that did not require any finding of “egregiousness” or the equivalent. (D.I. 470 at 29).

⁹ The jury’s lump sum damages award is based on Plaintiffs’ proposed 15% rate. (D.I. 476); Tr. at 611:20-613:2.

an award of compound rather than simple interest assures that the patent owner is fully compensated.”) (citation and quotation marks omitted).

This Court has noted that “the prime rate best compensate[s] a patentee for lost revenues during the period of infringement because the prime rate represents the cost of borrowing money, which is a better measure of the harm suffered as a result of the loss of the use of money over time.” *Finjan Software, Ltd. v. Secure Computing Corp.*, 2009 WL 2524495, at *13 (D. Del. Aug. 18, 2009), *aff’d in part, rev’d in part on other grounds*, 626 F.3d 1197 (Fed. Cir. 2010) (citations and quotation marks omitted). As for the compounding period, the prior license agreements relied on by the parties’ experts specify quarterly payments with interest compounded quarterly. (D.I. 513 at 28). Therefore, I find prejudgment interest should be calculated based on the prime rate, compounded quarterly.

Post-judgment interest is governed by 28 U.S.C. § 1961. Section 1961(a) provides, “Such interest shall be calculated from the date of the entry of the judgment, at a rate equal to the weekly average 1-year constant maturity Treasury yield, as published by the Board of Governors of the Federal Reserve System, for the calendar week preceding the date of the judgment.”

Accordingly, the Court will award Plaintiffs: (1) prejudgment supplemental damages for the period from July 1 to November 13, 2018, based on a 15% royalty, (2) prejudgment interest at the prime rate, compounded quarterly, and (3) post-judgment interest at the Treasury bill rate as defined in § 1961(a), compounded annually. The prejudgment interest applies to the total prejudgment damages, including supplemental damages. The post-judgment interest applies to the total prejudgment damages plus prejudgment interest.

V. CONCLUSION

A separate order will be entered.