
**United States Court of Appeals
for the Federal Circuit**

OPTIUM CORPORATION,

Plaintiff-Appellant,

v.

EMCORE CORPORATION,

Defendant-Appellee.

**On Appeal from the United States District Court for the Western District of
Pennsylvania in Case No. 07-CV-1683, Chief Judge Donetta W. Ambrose**

NONCONFIDENTIAL BRIEF FOR DEFENDANT-APPELLEE

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CERTIFICATE OF INTEREST

Counsel for defendant-appellee Emcore Corporation certify the following in accordance with Federal Rule of Appellate Procedure 26.1 and Federal Circuit Rule 47.4(a):

The full name of every party represented by me is:

Emcore Corporation

The name of the real party in interest, if the party named in the caption is not the real party in interest, represented by me is:

The party named in the caption is the real party in interest.

All parent corporations and any publicly held companies that own ten percent or more of the stock of the parties or amicus curiae represented by me are:

None

The name of all law firms and the partners and associates that have appeared for the parties now represented by me in the lower tribunal or are appearing in this Court are:

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Pursuant to Federal Circuit Rule 28(d)(1)(B), material subject to a protective order entered by the United States District Court for the Western District of Pennsylvania has been redacted from this brief. The material omitted on pages 3-8, 11, 15-16, 27, 35-38, 45-46, and 48 is from confidential Emcore documents that discuss information related to proprietary research and an invention disclosure.

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Parties

Appellant	Optium Corporation
Appellee	Emcore Corporation and JDS Uniphase Corporation

Defined Terms

The '003 Patent	U.S. Patent No. 6,282,003
The '071 Patent	U.S. Patent No. 6,490,071
A____	Joint Appendix. References in the form A10:15-20 are, in this example, to lines 15 to 20 on page 10 of the Joint Appendix. References in the form A10:5:12-25 are, here, to either column 5 or page 5, lines 12 to 25, on page 10 of the Joint Appendix, where a document has numbered columns and lines or multiple pages of a transcript condensed to a single page.
Br. at ____	Appellant's brief
CATV	Cable Television
Emcore	Emcore Corporation and JDS Uniphase Corporation
Inventors	Ronald T. Logan, Jr. and Ruo Ding Li
JDSU	JDS Uniphase Corporation
Logan and Li	Inventors Ronald T. Logan, Jr. and Ruo Ding Li
PTO	United States Patent and Trademark Office
SBS	Stimulated Brillouin Scattering

TABLE OF ABBREVIATIONS

(continued)

Willems article	F.W. Willems, J.C. Van der Plaats, and W. Muys, “Harmonic distortion caused by stimulated Brillouin scattering suppression in externally modulated lightwave AM-CATV systems,” <i>Electronic Letters</i> , Vol. 30, No. 4,344 (1994).
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All emphasis in this Appellee’s brief is added unless otherwise indicated.

STATEMENT OF RELATED CASES

Appellee Emcore Corp. (“Emcore”) states that this case is related to the pending action *Emcore Corporation and JDS Uniphase Corporation v. Optium Corporation* (Nos. 07-326 and 06-1202, consolidated) in the United States District Court for the Western District of Pennsylvania, because that action involves assertion of the same patents that are at issue in this appeal.

STATEMENT OF THE ISSUES

1. Did the district court properly grant summary judgment of no inequitable conduct, when after completion of discovery, Optium: (1) failed to identify any specific individual who purportedly acted with intent to deceive the PTO, and (2) failed to proffer any evidence that the inventors or prosecuting attorneys deliberately withheld information with intent to deceive the PTO?

2. Can the non-disclosure of information, even if such information viewed in a light most favorable to non-movant were “highly material,” compensate for the complete absence of evidence showing a threshold level of intent to deceive the PTO, so as to preclude a grant of summary judgment of no inequitable conduct?

3. Did the district court properly balance the equities when, after considering the evidence in a light most favorable to Optium, the court concluded that it would not exercise its discretion to hold the patents unenforceable?

STATEMENT OF THE FACTS

A. Background Of The Technology

Much of our modern communication is accomplished through laser light beams passed through hair-thin optical fibers. Cable television, or CATV, is no exception. Optical CATV signals are often required to travel long distances; however, as the power of the light signal is increased to allow it to travel those distances at the most distortion-free wavelength, a phenomenon known as

Stimulated Brillouin Scattering (“SBS”) begins to cause a marked decrease in the quality of the optical signal. (A85; A842 at n.5.) Once the power of an optical signal crosses the “SBS threshold,” the molecules in the optical fiber become so excited that they begin to transmit the light backward toward the transmitter, which causes SBS interference. (*Id.*) Suppressing SBS can therefore improve the signal quality.

CATV signals are focused within a narrow frequency range, and each frequency band has its own separate “SBS threshold.” (A85; A842.) By spreading the optical signal over a spectrum of multiple frequency bands sufficiently separated as to have independent SBS thresholds, the overall power of the signal can be increased without crossing any individual frequency’s SBS threshold, and without diminishing overall signal quality. (A1335.)

A single optical signal can be spread into separate frequencies (known as “sidebands”) through a process called “phase modulation.” (A1218.) During phase modulation, an outside radio frequency signal (or “tone”) is added. (A85-86.) The tone causes the signal to spread to different sidebands, each on a new frequency with a new SBS threshold. (A1335.) Accordingly, the total amount of power that can be transmitted without SBS interference increases dramatically. (A842-43; A1011 at ¶ IV, 1.) To carry an even more powerful carrier signal, another tone can be added to create additional sidebands with their own SBS

thresholds. (A1335.) Two-tone phase modulation has long been known as a method to suppress SBS interference, and was admitted prior art on the face of the patents-in-suit. (A85, A99.)

B. Pre-Application Phase Of The Patents-In-Suit

In 1997, inventors Ronald T. Logan, Jr. and Ruo Ding Li (collectively “Logan and Li” or “the inventors”) were employed in the Transmission System Division of Uniphase Telecommunications Products, which later became JDS Uniphase (“JDSU”), before the CATV-related businesses of JDSU were purchased by Emcore. (A1021.) At that time, the company was experiencing problems with its externally modulated 1550-nanometer transmitters. (*Id.*) The units had to be manually tuned, which was a very time-consuming process, and large numbers of units were returned for re-tuning because they no longer met the customer’s specifications for SBS suppression. (*Id.*) Logan and Li were asked to investigate why these transmitters, which used two-tone phase modulation, necessitated such frequent re-tuning. (A1021-22.)

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] Based on their research, Logan and Li derived the additional equations necessary to plot the SBS threshold values of two variable commensurate tones. (A1023.) Using that formula, they created a three-dimensional contour map. That map demonstrated that the problematic transmitters were targeted to a quite narrow peak of SBS suppression, which could explain the frequent need to re-tune them. (A202.)

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C. Prosecution Of The Patents-In-Suit

On February 2, 1998, Logan and Li, acting through legal counsel, filed U.S. Patent Application No. 09/017,182 with the PTO. (A1026.) That patent application eventually issued as U.S. Patent No. 6,282,003 (“the ’003 Patent”).

The application was filed by attorney Steven C. Shear, who was then working for the Law Offices of Steven C. Shear. (A419, A423.) Dr. Logan testified that he believes that the patent application was primarily drafted by attorney Mike Pritzkau, who also worked at Mr. Shear's firm.¹ (A1187.) Neither Mr. Shear nor Mr. Pritzkau recall having ever seen the Willems article [

] (A1122-23; A1127; A1796; A1801.) On March 30, 1998, Mr. Shear submitted an Information Disclosure Statement to the Patent Office. (A470.) [

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During prosecution, the Examiner cited, among other patents, U.S. Patent No. 5,828,477. (A79.) That patent, in turn, identifies the Willems article. (*See* A40-41; A356.) The '003 Patent issued on August 28, 2001. (A417.)

On August 6, 2001, Logan and Li, through legal counsel, filed U.S. Patent Application No. 09/923,029, which was a continuation of the application that led to the '003 Patent. (A513.) This application was filed by attorney Jay Beyer, who was then working for Boulder Patent Services. (A518.) Mr. Beyer did not recall ever having seen the Willems article, [

¹ Both Mr. Shear and Mr. Pritzkau later moved to Boulder Patent Services, Inc. (A508.)

] In December 2001, JDSU appointed new counsel, Mr. Charles Wands. (A549-50.) Mr. Wands, who was then working at the law firm Allen, Dyer, Doppelt, Milbrath, & Gilchrist, P.A., took over the prosecution. (A556.)

On February 22, 2002, the Examiner issued an Office Action, in which he identified U.S. Patent No. 5,953,139. (A562.) That patent, in turn, references the Willems article. (A40-41; A412.) The '071 Patent issued on December 3, 2002. (A513.)

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] However, Dr. Li testified that he and Dr. Logan disclosed everything they thought was appropriate to the PTO. (*Id.*)

D. The Willems Article

The Willems article is a two-page article published in 1995. (A298-300.) The article provides a two-dimensional chart of SBS suppression with one-tone phase modulation. (*Id.*) The Willems article does not reference a three-dimensional contour map. (*Id.*)

The Willems article addresses only single-tone phase modulation. (*Id.*) The topic of the article is whether distortion would occur if a carrier signal were phase modulated with a single tone applied at twice the highest CATV subcarrier

frequency. (A299.) The authors concluded that this particular form of phase modulation eliminated inter-modulation distortion. (*Id.*)

E. The Patents-In-Suit

The '003 and '071 Patents were both concerned solely with multiple-tone phase modulation. (A85, A92.) Moreover, the patents specifically incorporate a three-dimensional contour map of the SBS suppression caused by varying two tones of phase modulation. (A81, A95.) In particular, the '003 patent explains:

The present invention is related generally to the phenomenon of [SBS] in the light guide of an optical communication system and more particularly to a method and associated apparatus for optimizing the SBS performance of such an optical communication system by using at least two phase modulation tones and identifying an advantageous operational region based on the phase modulation provided by the tones.

(A85.) The patent further provides:

A highly advantageous SBS contour map and its method of use are also disclosed. In addition, a modulated light producing arrangement manufactured in accordance with the teachings of the present invention is disclosed.

(*Id.*) Claim 24 of the '003 Patent, the claim now at issue in this case,² relates to the contour map portion of the invention. The claim concerns:

A contour map especially suited for use in optimizing SBS suppression in an optical communication system in which light is phase modulated using at least first and second tones[.]

² Claim 24 was not among the claims asserted by Emcore and JDSU to be infringed by Optium.

(A90.)

F. Optium's Declaratory-Judgment Action

In 2006, Emcore sued Optium for infringement of the '003 and '071 Patents. After the close of discovery in that case, Optium moved to amend its answer to assert the affirmative defense that the patents were unenforceable due to inequitable conduct. (A135.) In light of the late stage of the infringement litigation, the district court denied Optium's motion in September 2007. (*Id.*) Shortly thereafter, in December 2007, Optium raised the same inequitable-conduct claim in a separately filed declaratory-judgment action that gave rise to this appeal. (A106.) Emcore moved to dismiss the action, or, in the alternative, to strike Optium's jury demand. (A255.) The court allowed the action to proceed, but granted Emcore's alternate request to strike Optium's jury demand, as Optium had no Seventh Amendment right to a jury trial on this purely equitable claim. (A255-57.)

Optium was given every opportunity to pursue its inequitable-conduct theory through a fulsome discovery process. Optium propounded interrogatories (A934-43), requests for production of documents, and requests for admission (A396-402). The parties engaged in extensive expert discovery. In addition, Optium deposed both of the inventors, Dr. Logan and Dr. Li (A206-25), and three of the four attorneys (all but Mr. Wands) involved in the prosecution of the patents-in-suit

(A1116-28). Through all of this discovery, Optium was unable to uncover a shred of evidence that any one of the six individuals possessed a specific intent to deceive the PTO by not disclosing the Willems article.

Nevertheless, Optium moved for summary judgment on its inequitable-conduct claim. (A1139.) In its opening brief, Optium limited its materiality argument to the assertion that the Willems article was material because it rendered obvious Claim 24 of the '003 Patent. (A1150-51.) Optium's motion for summary judgment never argued that a specific individual—either of the inventors or any of the prosecuting attorneys—had motive or intent to deceive the PTO. Rather, Optium simply claimed that the “Applicants” collectively had intent to deceive because they did not disclose the purportedly “highly material” Willems article. (A1154-55 (“The inference is clear: Applicants . . . chose to mislead the PTO by . . . withholding the reference they believed to be most material.”).) [

]

Given the dearth of evidence on materiality and intent, Emcore filed a cross-motion for summary judgment arguing that: (1) the Willems article was not a material disclosure because it simply summarized concepts that had been discussed in undergraduate textbooks since the 1950s; and (2) Optium failed to proffer any evidence that anyone deliberately withheld the Willems article with specific intent to deceive the PTO. (A985-1008.)

G. The Special Master's Report

Three months after the parties submitted their cross-motions for summary judgment, the Special Master issued his final report and recommendation to the District Court. (A2-63.) In a thorough, 62-page opinion that lays out the relevant facts and law in painstaking detail, the Special Master recommended that the district court grant summary judgment to Emcore, and deny Optium's request for summary judgment. (A62.)

1. Standards For Inequitable Conduct Claims

The Special Master began his analysis by exhaustively reviewing this Court's standards for evaluating inequitable conduct claims. He determined that a party asserting inequitable conduct must first show that the information withheld from the PTO was material. (A16.) He noted that withheld information was "material" if "there is a substantial likelihood that a reasonable examiner would consider [the information] important in deciding whether to allow the application

to issue as a patent” or if the information “establishes . . . a *prima facie* case of unpatentability of a claim or refutes . . . a position the applicant takes in . . . asserting an argument of patentability.” (A19, A22, A24.)

The Special Master next explained that a party asserting inequitable conduct must prove by clear and convincing evidence that the patentee had actual intent to deceive the PTO and that gross negligence is insufficient to establish intent. (A24-27.) To satisfy this burden, the Special Master wrote, the party asserting inequitable conduct must show that “the involved conduct, viewed in light of all the evidence, including evidence indicative of good faith, must indicate sufficient culpability to require a finding of intent to deceive.” (A29.)

Finally, the Special Master noted that once the party asserting inequitable conduct has satisfied both the materiality and intent thresholds, a court should “balance the equities” of the case and determine whether the patentee has truly committed inequitable conduct sufficient to invalidate the patent. (A30.) The Special Master explained that, under that balancing test: “[T]he more material the omission or misrepresentation, the lower the level of intent required to establish inequitable conduct, and vice versa.” (*Id.* (quoting *Critikon, Inc. v. Becton Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1256 (Fed. Cir. 1997)).)

2. Materiality

After an extensive recitation of the legal and evidentiary standards relevant to the motions before him, the Special Master addressed the parties' materiality arguments. The Special Master immediately homed in on the fact that Optium's summary-judgment brief had only argued that the Willems article was material to Claim 24 of the '003 patent.³ (A33.) The Special Master then noted that Claim 24 recites: "A *contour map* especially suited for use in optimizing SBS suppression in an optical communication system in which light is phase modulated *using at least first and second tones*." (A34.) The Special Master further noted that the parties did not dispute that "the Willems Article does not show or mention a contour map," and that the Willems article "*per se* discloses using one tone." (*Id.*) The Special Master also acknowledged that under this Court's precedent, "materiality and validity [are] not common issues," though when undisclosed prior art does not render a claim unpatentable, he ruled, the "level of materiality . . . would be low." (A34-35.)

Although the Special Master found that Optium's summary-judgment motion had not identified a single "change in the examination, prosecution, or

³ Optium attempts to assign error to the Special Master's focus on Claim 24. (Br. at 33-34.) However, that focus was necessitated by Optium's own briefing. Claim 24 was the only claim that Optium specifically raised in either its memorandum in support of summary judgment or its statement of undisputed facts. (A1150-51, A1166.)

issuance of either patent-in-suit that would have been caused by—or might have been caused by—disclosure of the Willems article,” granting all inferences in Optium’s favor for the purpose of Emcore’s motion for summary judgment, the Special Master concluded that “Optium has not shown that claim 24 is actually invalid . . . by clear and convincing proof—only potentially so.” (A42.) Under the broad scope of the “reasonable examiner” standard, the Special Master found that possibility was “sufficient to cross the threshold of materiality for purposes of both [parties’ summary-judgment] motions.” (A42.)

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] Just as he charitably viewed the obviousness evidence in light of the summary-judgment posture of the case, the Special Master deemed that evidence “sufficient . . . to cross the materiality threshold” for purposes of Emcore’s summary-judgment motion. (*Id.*)

The Special Master’s materiality inquiry ended with his review of Emcore’s claim that the Willems article was cumulative of other references submitted to the PTO. Although noting that the Willems article was directly cited and discussed in other patents that were before the Examiner in the prosecution of the ’003 and ’071 Patents (A40-41), the Special Master concluded that there was a “factual dispute *vis-a-vis* what the Willems Article actually discloses and whether—whatever the Willems article discloses—that disclosure is nothing more than what was already known in the art, for example as evidenced by the . . . other prior art that Emcore relies on.” (A44.) Accordingly, for the purposes of Emcore’s summary-judgment motion, the Special Master deemed the article not cumulative. (*Id.*) However, drawing all inferences in Emcore’s favor for the purposes of Optium’s summary-

judgment motion, the article was deemed cumulative. (*Id.*) That meant that Optium could not prove materiality as a matter of law, and therefore it provided sufficient grounds to deny Optium’s summary-judgment motion in its entirety. (A32.)

3. Intent

The Special Master next addressed the intent element of Optium’s inequitable-conduct claim. The Special Master noted the undisputed facts that the inventors were at one time aware of the Willems article and that it had not been disclosed in the patent applications. (A51.) The Special Master then rejected Optium’s invitation to infer intent by further inferring that the barely-material Willems article could be found “*highly* material,” thus leading to an inference of deceptive intent. (*Id.*) The Special Master explained: “Although it is true that a ‘smoking gun’ is not necessary, and that circumstantial evidence may be used to infer intent, nevertheless, there must be ‘facts,’ proven by clear and convincing evidence, that support an inference of intent[.]” (A55.) He further noted that the testimony of the inventors and the prosecuting attorneys presented no evidence of bad faith whatsoever. (A56.) He then concluded that Optium’s proffered evidence of intent to deceive simply would not allow “a confident judgment that deceit has occurred.” (A58.)

The Special Master also distinguished the two cases that Optium had primarily relied upon in support of its argument: *Paragon Podiatry Laboratory, Inc. v. KLM Laboratories, Inc.*, 984 F.2d 1182 (Fed. Cir. 1993), and *Ferring B.V. v. Barr Laboratories, Inc.*, 437 F.3d 1181 (Fed. Cir. 2006). In *Paragon*, the Special Master noted, this Court found that the prosecution of the patent, viewed in its entirety, “demonstrates an overriding pattern of misconduct sufficient to support” a finding of specific intent to deceive the PTO. (A45 (quoting *Paragon*, 984 F.2d at 1193).) In *Paragon*, the patent was initially rejected by the PTO. (A45.) In appealing that rejection, the applicant knowingly submitted multiple misleading affidavits to the PTO, and those affidavits misled the examiners regarding facts that would be difficult for the examiners to investigate independently. The applicant also knowingly failed to disclose commercial sales that would have created a statutory on-sale bar to granting the patent. (A45-47.)

Similarly in *Ferring*, during the process of appealing the PTO’s rejection of his patent application, the applicant submitted multiple declarations with misleading statements regarding the affiants’ impartiality, even after the PTO had specifically expressed concern about the identity of those affiants. The applicant also made multiple other omissions over a long period of time. (A48-50.)

The Special Master observed that unlike the applicants in *Paragon* and *Ferring*, Emcore had not submitted affirmatively false or misleading affidavits in

response to PTO rejections, nor had any affirmative misrepresentations caused the PTO to grant either patent application at issue. (A50, A54.) Moreover, although the Willems article passed the “materiality threshold” under the “reasonable examiner” standard, the Special Master found the omission of the Willems article had “at best marginal materiality” to the patent prosecution, particularly when compared to the affirmative misrepresentations in *Paragon* and *Ferring*. (A51, A53.)

Accordingly, the Special Master concluded that, even viewed in the light most favorable to Optium, “the adduced evidence of intent to deceive the PTO that Optium relies on does not constitute clear and convincing evidence of an intent to deceive the PTO, or clear and convincing evidence of facts sufficient to reasonably draw an inference of an intent to deceive the PTO.” (A58.) This lack of intent was fatal to Optium’s claim, and entitled Emcore to summary judgment. (A58.)

4. Application Of The Balancing Test

Although his analysis of the “intent” prong of Optium’s inequitable-conduct claim would have allowed the special master to skip the final equitable “balancing test” altogether, the Special Master chose to assume that Optium had been able to meet the threshold finding of intent and complete his analysis of all prongs of Optium’s claim. (A57-58.) Even when viewing the evidence in the light most favorable to Optium, the Special Master observed that Optium’s quantum of proof

on the intent issue was “minimal” and “scant, to say the least.” (A60.)

Accordingly, the Special Master recommended the district court exercise its discretion in favor of Emcore, ruling that “the balance weighs in favor of a finding of no inequitable conduct.” (*Id.*)

5. District Court’s Adoption Of The Special Master’s Report

The district court subsequently “adopted as the opinion of the court” the Special Master’s recommendation in its entirety. (A1.)

STANDARD OF REVIEW

This Court reviews a grant of summary judgment *de novo*. *See, e.g., Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 962 (Fed. Cir. 2001). Summary judgment is appropriate when “the pleadings, depositions, answers to interrogatories and admissions on file, together with affidavits, if any, show that there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(c); *see Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986); *Vita-Mix Corp. v. Basic Holding, Inc.*, ---F.3d---, 2009 WL 2950226, at *13 (Fed. Cir. Sept. 16, 2009).

The court views the summary-judgment record through the prism of the evidentiary standard of proof that would pertain at a trial on the merits; thus, “where the ... ‘clear and convincing’ evidence requirement applies, the trial judge’s summary judgment inquiry as to whether a genuine issue exists will be

whether the evidence is such that a jury applying that evidentiary standard could reasonably find for either the plaintiff or the defendant.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986). To prevail on an inequitable-conduct defense, “the accused infringer must prove by clear and convincing evidence that material information was withheld with the specific intent to deceive the PTO.” *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1366 (Fed. Cir. 2008). Thus, a moving party seeking to defeat an inequitable-conduct claim at summary judgment must show that the non-moving party, who bears the burden of proof at trial, failed to produce clear and convincing evidence on an essential element of that defense. *See, e.g., AstraZeneca Pharms. LP v. Teva Pharms. USA, Inc.*, ---F.3d---, 2009 WL 3051792, at *7-8 (Fed. Cir. Sept. 25, 2009).

“Summary judgment *must* be granted against a party who has failed to introduce evidence sufficient to establish the existence of an essential element of that party’s case, on which the party will bear the burden of proof at trial.” *Novartis Corp. v. Ben Venue Labs., Inc.*, 271 F.3d 1043, 1046 (Fed. Cir. 2001). This is particularly true in inequitable-conduct cases, where the “need to strictly enforce the burden of proof and elevated standard of proof in the inequitable conduct context is paramount because the penalty for inequitable conduct is so severe.” *Star Scientific*, 537 F.3d at 1365; *see also AstraZeneca*, 2009 WL

3051792, at *1 (affirming grant of summary judgment of no inequitable conduct); *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 547 (Fed. Cir. 1998) (same).

SUMMARY OF THE ARGUMENT

The district court properly granted summary judgment of no inequitable conduct because after full discovery contemplated by Federal Rule of Civil Procedure 56—depositions, answers to interrogatories, and answers to requests for admissions—Optium was unable to proffer any evidence, let alone clear and convincing evidence, showing even a threshold level of intent to deceive the PTO. In particular, Optium fails to identify a specific individual who deliberately withheld the Willems article with specific intent to deceive the PTO. As such, Optium’s inequitable-conduct claim could not survive a motion to dismiss, much less merit a full trial. Indeed, based on the record, the single most reasonable inference is not an intent to deceive, but rather (a) that the inventors sought to disclose the Willems article, and (b) the attorneys responsible for prosecuting the patent applications never saw the Willems article.

Further, the district court rejected Optium’s attempt to bootstrap the purported materiality of the Willems article to compensate for the total absence of evidence regarding deceptive intent. This Court’s well-established precedent makes clear that materiality, even “high materiality,” does not presume intent and cannot remedy a failure to establish a threshold level of intent. In addition, the

Willems article is not material to any claim of the patents-in-suit because the article neither discloses nor suggests use of contour maps and multiple phase-modulation tones, which are the salient aspects of the inventions.

Moreover, the district court properly “balanced the equities” of this case to grant summary judgment to Emcore. As part of its analysis, the district court assumed that Optium could prove at trial all the assertions that it presented at summary judgment, yet nevertheless determined that the accused conduct did not justify an exercise of discretion that would render the patents unenforceable. That decision is, in and of itself, fatal to Optium’s claim. Importantly, Optium’s opening brief never attempts to argue that this secondary ground for summary judgment was erroneous. Thus, this Court should affirm the district court’s grant of summary judgment to Emcore.

ARGUMENT

I. THE DISTRICT COURT PROPERLY GRANTED SUMMARY JUDGMENT BECAUSE THE RECORD IS DEVOID OF ANY EVIDENCE SHOWING AN INTENT TO DECEIVE THE PTO

“To prevail on summary judgment on a claim for inequitable conduct, [Optium] would have to present evidence of affirmative misrepresentations of material fact, failure to disclose material information, or submission of false material information, *coupled with evidence of an intent to deceive.*” *Vita-Mix*, 2009 WL 2950226, at *13 (citing *Dayco Prods. v. Total Containment, Inc.*, 329

F.3d 1358, 1362 (Fed. Cir. 2003)). Both (i) a material misrepresentation or omission, *and* (ii) an intent to deceive by making that misrepresentation or omission, each proven by clear-and-convincing evidence, are essential elements of the inequitable-conduct defense. If one of those two prongs is missing from the summary-judgment record, then summary judgment for the patentee is appropriate.

While Optium’s entire brief is dedicated to the issue of inequitable conduct, its discussion of the critical intent prong is relegated to a few cursory pages at the end. This highlights the essential failure of Optium’s inequitable-conduct case: It has no proof whatsoever of intent. Indeed, Optium entirely fails to: (1) identify a specific individual who deliberately withheld the Willems article, and (2) point to *any* record evidence showing deceptive intent. That omission is fatal to Optium’s case, because courts “will not find inequitable conduct on an evidentiary record that is completely devoid of evidence of the patentee’s intent to deceive the PTO.” *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1358 (Fed. Cir. 2003); *accord Vita-Mix*, 2009 WL 2950226, at *13.

A. Summary Judgment Is Appropriate Given Optium’s Failure To Identify Any Specific Individual Who Deliberately Withheld The Willems Article

This Court requires more specificity *at the pleading stage* of an inequitable-conduct defense than Optium provided after full discovery on the issue. “[T]o plead ‘circumstances’ of inequitable conduct with requisite ‘particularity’ ... the

pleading must identify *the specific who*, what, when, where and how of the material misrepresentation or omission committed before the PTO.” *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1328 (Fed. Cir. 2009). A viable inequitable-conduct defense requires that a party “include sufficient allegations of underlying facts from which a court may reasonably infer *that a specific individual* (1) knew of the withheld material information ... and (2) withheld or misrepresented this information *with a specific intent to deceive the PTO.*” *Id.* at 1328-29. These requirements defeat Optium’s inequitable-conduct defense, because it has *never*—not in its pleading, not in its summary-judgment evidence, and not in its brief to this Court—identified any specific individual who acted with intent to deceive the PTO.

Optium has had complete discovery on the issue of inequitable conduct—multiple inventor depositions, several depositions of the prosecuting attorneys, extensive document production, propounding of interrogatories, requests for admission, and expert reports and depositions—yet it cannot identify (let alone prove by clear-and-convincing evidence) any specific individual who deliberately withheld the Willems article with deceptive intent. Though Optium asserts (with minimal precision) that the inventors and prosecuting attorneys knew of the Willems article (Br. at 38-39), it never identifies a specific individual who

deliberately withheld the article, preferring instead the vague allegation that “*Applicants* intended to deceive the PTO.” (Br. at 39, 40.)

Optium’s generic reference to “Applicants” is precisely the type of allegation held inadequate to sustain an inequitable-conduct claim in *Exergen*:

[T]he pleading refers generally to “Exergen, its agents and/or attorneys,” [] ***but fails to name the specific individual*** associated with the filing or prosecution of the application issuing as the [asserted] patent, who ***both*** knew of the material information and ***deliberately withheld or misrepresented it. The pleading thus fails to identify the “who” of the material omissions and misrepresentation.***

575 F.3d at 1329. It follows that if this was not enough to sustain a pleading, the same lack of specificity dooms Optium’s case at summary judgment. *See Sanofi-Synthelabo v. Apotex, Inc.*, 470 F.3d 1368, 1381 (Fed. Cir. 2006) (explaining that “generalized allegations lack the particularity required to meet the threshold level of deceptive intent necessary for a finding of inequitable conduct”); *On-Line Techs. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1141 (Fed. Cir. 2004) (affirming grant of summary judgment because “general characterizations do not satisfy the requirement that [non-movant] point to specific evidence sufficient to create a disputed issue of material fact”).

The present circumstances are even more compelling than *Exergen*. In that case, this Court disposed of the inequitable-conduct defense at the pleading stage for lack of specificity. Here, however, Optium has had every opportunity to

conduct discovery and develop its inequitable-conduct theory, yet it cannot point to a particular actor who both knew of the Willems article *and* could be found (by clear-and-convincing evidence) to have withheld it with deceptive intent. As noted above, there is no evidence that any of the four lawyers who worked on the two applications ever knew about the Willems article—the three lawyers who were deposed (Messrs. Shear, Pritzkau, and Beyer) all testified that they had no recollection of seeing it (A1122, A1118, A1127); the fourth lawyer (Wands) was never deposed. So it could not be said that any of the lawyers “both knew of the [allegedly] material information and deliberately withheld or misrepresented it.” *Exergen*, 575 F.3d at 1329.

As for the inventors Logan and Li, [] Since there is no evidence even tending to suggest (let alone tending to prove by clear-and-convincing evidence) that they later “deliberately withheld” the Willems article (*Exergen, supra*), neither of them could possibly have committed inequitable conduct.

Under these circumstances, there was no basis for the district court to continue the inequitable-conduct claim past summary judgment. The most Optium can say, after full development of its defense through discovery and summary-judgment briefing, is that “Applicants intended to deceive the PTO by withholding

the [Willems article].” (Br. at 39.) That vague and generalized averment is virtually identical to the bare-bones allegation in its complaint that “Applicants failed to disclose these references with the intent to deceive the PTO” (A108)—an allegation that could not have withstood a motion to dismiss after *Exergen*. A party “who fails to provide probative evidence [on its burden of proof] runs the risk of being peremptorily nonsuited.” *Novartis Corp.*, 271 F.3d at 1050.

In sum, given Optium’s failure, at this advanced phase, to even identify a specific individual who withheld the Willems article with deceptive intent, the district court’s grant of summary judgment was appropriate. Indeed, it was entirely in keeping with this Court’s instruction that “courts must be vigilant in not permitting the [inequitable conduct] defense to be applied too lightly.” *Star Scientific*, 537 F.3d at 1366. Optium’s generalized reference to “Applicants” in place of an identification of specific individuals runs afoul not only of the rules of pleading specificity, *see* Fed. R. Civ. P. 9(b); *Exergen, supra*, but also of the Supreme Court’s direction that a party cannot defeat summary judgment by asking a court to assume that “general averments embrace the ‘specific facts’ needed to sustain the complaint.” *Lujan v. Nat’l Wildlife Fed’n*, 497 U.S. 871, 888 (1990).

B. The Record Is Devoid Of Any Clear-And-Convincing Evidence To Support A Finding Of Intent To Deceive The PTO

“[T]o prevail on the [inequitable conduct] defense, the accused infringer must prove by clear and convincing evidence that the material information was

withheld with the specific intent to deceive the PTO.” *Star Scientific*, 537 F.3d at 1366. Satisfying the intent requirement “is a high bar,” *Eisai Co. v. Dr. Reddy’s Labs., Ltd.*, 533 F.3d 1353, 1360 (Fed. Cir. 2008), and “must at all times reach a threshold of ‘clear and convincing.’” *Rothman v. Target Corp.*, 556 F.3d 1310, 1323 (Fed. Cir. 2009). In this case, despite the completion of fact and expert discovery, the only “evidence” of intent that Optium offers is the non-disclosure of the Willems article. This falls far short of establishing “sufficient culpability to require a finding of intent to deceive,” *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 876 (Fed. Cir. 1988) (en banc), and cannot stave off summary judgment.

At the outset, “inequitable conduct requires not intent to withhold, but rather intent to deceive.” *Dayco Prods.*, 329 F.3d at 1367. Here, other than repeatedly (and generally) averring that “Applicants did not disclose the Willems article” (Br. at 38-40), Optium identifies no evidence indicating that such non-disclosure is attributable to the inventors’ or the prosecuting attorneys’ specific intent to deceive the PTO. In such cases, “[i]nequitable conduct can not lie when applicant’s failure to disclose art or information did not result from an intent to mislead the PTO.” *Allen Organ Co. v. Kimball Int’l, Inc.*, 839 F.2d 1556, 1567 (Fed. Cir. 1988); see *AstraZeneca*, 2009 WL 3051792, at *7 (holding inequitable-conduct claim was not viable when record showed “no evidence or suggestion of deceptive intent, other

than the fact that [] information was not provided”); *Larson Mfg. Co. of S.D. v. Aluminart Prods. Ltd.*, 559 F.3d 1317, 1340 (Fed. Cir. 2009) (“[N]ondisclosure, by itself, cannot satisfy the deceptive intent element.”).

Presented with similar circumstances, this Court has consistently held that mere non-disclosure of information will not support a threshold finding of intent to deceive. *See, e.g., Eisai*, 533 F.3d at 1360-61; *Star Scientific*, 537 F.3d at 1366. In *Eisai*, this Court reasoned that although disclosure of certain information “would have been prudent, [patentee’s] failure is by no means fatal” because “the record *is devoid of any real suggestion of intent to deceive the Patent Office*, much less the clear and convincing evidence required to support a finding of inequitable conduct.” 533 F.3d at 1360-61. Likewise, in *Star Scientific*, this Court held that, as a matter of law, nondisclosure of information, unless coupled with evidence showing a deliberate decision to withhold such information, cannot support a finding of intent to deceive:

The alleged conduct *must not amount merely to the improper performance of, or omission of, an act* one ought to have performed. Rather, clear and convincing evidence must prove that an applicant had the specific intent to ... mislead or deceive the PTO. In a case involving nondisclosure of information, *clear and convincing evidence must show that the applicant made a deliberate decision to withhold a known material reference.*

537 F.3d at 1366 (quoting *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1181 (Fed. Cir. 1995)).

In *Vita-Mix*, the Court upheld the district court's grant of summary judgment of no inequitable conduct where the only evidence relevant to the intent prong was the inventor's deposition testimony that "he believed the [allegedly false] statement to be true at the time that he made it." 2009 WL 2950226, at *13. This Court concluded that, "[w]ith no other evidence in the record, the district court correctly found that [the alleged infringer] made no genuine showing of deceptive intent." *Id.* Similarly in *AstraZeneca*, this Court affirmed a grant of summary judgment of no inequitable conduct when the non-moving parties "offer[ed] no evidence or suggestion of deceptive intent, other than the fact th[e] information was not provided." 2009 WL 3051792, at *7. Based on the record, this Court concluded that "intentional withholding for the purpose of deceiving the examiner is unsupported by evidence sufficient to avert summary judgment." *Id.* at *8.

The reasoning and outcome in those cases apply with equal force to this case. Here, as in *Eisai* and *Star Scientific*, Optium attempts to meet the threshold showing of intent to deceive based on the non-disclosure of the Willems article. Also, as in *Eisai* and *Star Scientific*, the record does not supply, nor can Optium identify, any evidence indicating that the non-disclosure stemmed from a deliberate decision to withhold the article or to deceive the PTO. Finally, as in *Vita-Mix* and

AstraZeneca, summary judgment followed from a record devoid of any evidence of deceptive intent. Accordingly, the district court’s grant of summary judgment was faithful to the principle that “[i]f a threshold level of intent to deceive ... is not established by clear and convincing evidence, the district court does not have any discretion to exercise and cannot hold the patent unenforceable regardless of the relative equities or how it might balance them.” *Star Scientific*, 537 F.3d at 1367; *see Celotex*, 477 U. S. at 322 (“Rule 56(c) mandates the entry of summary judgment, after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party’s case, and on which that party will bear the burden of proof at trial.”).

C. The Record Evidence Does Not Support An Inference Of Intent To Deceive Sufficient To Defeat Summary Judgment

Optium stakes its defense entirely on the claim that the Willems article was so material that its non-disclosure must raise an inference of deceptive intent sufficient to overcome Emcore’s summary-judgment motion. (Br. at 40.) That effort fails on multiple grounds.

First, the non-disclosure of the Willems article cannot, standing alone, give rise to an inference of deceptive intent. “[M]erely withholding a reference cannot support an inference of deceptive intent.” *Larson*, 559 F.3d at 1340. To that end, the law is well-settled that “[i]ntent to deceive *cannot be inferred solely* from the fact that information was not disclosed; *there must be a factual basis for a finding*

of deceptive intent.” *M. Eagles Tool Warehouse, Inc. v. Fisher Tooling Co.*, 439 F.3d 1335, 1340 (Fed. Cir. 2006); *see Hebert v. Lisle Corp.*, 99 F.3d 1109, 1116 (Fed. Cir. 1996) (same). Here, independent of the non-disclosure of a prior-art reference—which is necessarily part of every inequitable-conduct claim based on failure to disclose—Optium fails to identify any evidentiary basis indicating that such non-disclosure was done with a particular individual’s specific, deliberate intent to deceive the PTO.

Second, Optium cannot fill the gaping hole in its evidence of deceptive intent by resting on the truism that intent “must generally be inferred from the facts and circumstances surrounding the applicant’s overall conduct.” (Br. at 37.) This Court has explained that while “intent can be inferred from indirect and circumstantial evidence, [] such evidence must be clear and convincing, and inferences drawn from lesser evidence cannot satisfy the deceptive intent requirement.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 560 F.3d 1366, 1378 (Fed. Cir. 2009). Critically, while making a passing reference to applicants’ “overall conduct,” Optium never identifies any specific conduct or evidence that would support an inference that either of the inventors or any of the prosecuting attorneys acted with deliberate intent to deceive the PTO. Accordingly, “no inference can be drawn if there is no evidence, direct or indirect, that can support the inference. [Optium’s] lack of any evidence at all on the crux of its theory, let alone clear and

convincing evidence, demonstrates that it failed to carry its burden.” *Star Scientific*, 537 F.3d at 1368; see *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1482 (Fed. Cir. 1998) (“[I]nference without any probative evidence is insufficient to show culpable intent.”).

Third, this Court has emphasized that, to sustain an inequitable-conduct defense, the inference of intent “must be ‘the *single most reasonable* inference able to be drawn from the evidence to meet the clear and convincing standard.’” *Exergen*, 575 F.3d at 1339 n.5 (quoting *Star Scientific*, 537 F.3d at 1366) (original emphasis). This is fatal to Optium’s case: Without any analysis and without ever charging a specific individual with an intent to deceive, Optium rests on a conclusory assertion that deceptive intent is the most reasonable inference. (Br. at 41.) However, “[t]here must be sufficient substance, other than attorney argument, to show that the issue requires trial.” *Glaverbel Societe Anonyme v. Northlake Mktg. & Supply, Inc.*, 45 F.3d 1550, 1562 (Fed. Cir. 1995); *Chem. Eng’g Corp. v. Essef Indus., Inc.*, 795 F.2d 1565, 1571 (Fed. Cir. 1986) (“General assertions ... and conclusory statements are insufficient to shoulder the non-movant’s burden.”). As explained more fully below, the record evidence, when viewed in a light most favorable to Optium, demonstrates that an inference that the inventors or the prosecuting attorneys acted with intent to deceive is not reasonable, much less the single most reasonable inference.

Regarding an inference as to the inventors, [

]

Thus, to the extent that any inference can be drawn from the inventors' conduct, it is that the inventors sought to disclose the Willems article to individuals responsible for handling those patent applications. Presented with analogous circumstances, this Court has rejected the argument that intent to deceive is the single most reasonable inference because the inventor was "justified in her expectation that her attorneys would determine the legal significance" of relevant

information and “take the appropriate actions.” *Ariad Pharms.*, 560 F.3d at 1378 (affirming finding of no inequitable conduct where inventor attempted to inform prosecuting attorney about possible errors in patent specification). So too here.

The same holds true regarding the prosecuting attorneys. Here, four different attorneys were involved at different times in prosecuting the '003 and '071 Patents. The three prosecuting attorneys who were deposed testified that they did not recall seeing the invention disclosure or the Willems article during the course of prosecution. (A1112, A1118, A1127.) Now, over a decade after prosecution started, Optium argues that the non-disclosure of the Willems article can *only* be the result of deceptive intent by one or more of the prosecuting attorneys. Intent to deceive, however, must “be determined in light of the realities of patent practice, and not as a matter of strict liability.” *M. Eagles*, 439 F.3d at 1343. Thus, “[d]eceptive intent is not inferred simply because information was in existence that was not presented to the examiner; and indeed, it is notable that in the usual course of patent prosecution many choices are made, recognizing the complexity of inventions, the virtually unlimited sources of information, and the burdens of patent examination.” *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1365 (Fed. Cir. 1998).

Indeed, based on the evidence adduced in the summary-judgment record, the far more likely inference—in fact, the *only* reasonable inference—[

] there is no basis for any court or factfinder to infer that any of them both knew of that article and deliberately withheld it from the PTO: The inventors knew about the Willems article and disclosed it; the attorneys did not even know about it.

This Court has previously rejected Optium’s attempt to impute an intent to deceive through a “backseat driver” version of the prosecution:

A patentee’s oversights are easily magnified out of proportion by one accused of infringement. Given the ease with which a relatively routine act of patent prosecution can be portrayed as intended to mislead or deceive, clear and convincing evidence of conduct sufficient to support an inference of culpable intent is required.

N. Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 939 (Fed. Cir. 1990) (reversing finding of inequitable conduct based on absence of intent to deceive); *see Molins*, 48 F.3d at 1181 (“The alleged conduct must not amount merely to the improper performance of, or omission of, an act one ought to have performed.”).

Even were one to assume that one or more of the prosecuting attorneys were aware of the Willems article—and it bears repeating that there is not a shred of evidence in the record suggesting that any of them knew about it—that still would not support a finding of intent to deceive. Rather, Optium’s case hinges on a series of assumptions unsupported by any record evidence or fair inference therefrom:

[

] Second, Optium’s theory requires the factfinder to make the further leap—again, without evidence—that one of the prosecuting attorneys believed that the Willems article was material and not cumulative. Third, Optium’s theory next requires a factfinder to assume, again without any underlying evidentiary basis, that one of the prosecuting attorneys knowingly and intentionally withheld the Willems article. Fourth, Optium’s theory requires yet a further logical jump, also unsupported by any record evidence, that one of the prosecuting attorneys withheld the Willems article with a specific intent to deceive the PTO. In view of this dubious chain of assumptions, and the absence of any specific individual to whom an intent to deceive could be attributed, the district court properly granted summary judgment because “*drawing an inference on an inference on an inference is not the role of the fact finder.*” *FMC Corp. v. Manitowoc Co.*, 835

F.2d 1411, 1417 (Fed. Cir. 1987); *see In re Hayes Microcomputer Prods., Inc. Patent Litig.*, 982 F.2d 1527, 1546 (Fed. Cir. 1992) (“Conjecture alone is not sufficient to . . . support the defense of inequitable conduct.”).

In the final analysis, when viewed in a light most favorable to Optium, the most that the record evidence can bear is that the prosecuting attorneys were unaware of a reference for which disclosure to the PTO might have been appropriate. That, however, does not support a conclusion that deceptive intent is the single most reasonable inference: “Mistake or negligence, even gross negligence, does not support a ruling of inequitable conduct.” *Abbott Labs. v. Sandoz, Inc.*, 544 F.3d 1341, 1353 (Fed. Cir. 2008); *see Speedplay, Inc. v. Bebop, Inc.*, 211 F.3d 1245, 1259 (Fed. Cir. 2000) (“The omission must be made with the specific intent to mislead, not merely from carelessness in the performance of a duty.”).

D. The Absence Of A “Good Faith Explanation” Is Irrelevant Because Optium Failed To Carry Its Burden Of Showing A Threshold Level Of Intent To Deceive

In the absence of any evidence sufficient to satisfy the threshold showing of intent to deceive, Optium improperly attempts to shift the burden to Emcore by arguing that because Applicants “can provide no credible explanation for not” disclosing the Willems article, Optium has “clearly and convincingly established that Applicants withheld the Willems article from the PTO with an intent to

deceive.” (Br. at 41.) Putting aside the fact, noted above, that the record evidence supports a quite reasonable and innocent reason for the non-disclosure, Optium’s argument misapprehends the procedural and substantive role that a “good faith explanation” plays in an inequitable conduct inquiry.

Optium, as the accused infringer, carries the burden of proving by clear and convincing evidence that the Willems article was deliberately withheld with specific intent to deceive the PTO. To that end, Emcore, as the patentee, “need not offer any good faith explanation unless the accused infringer first carried [its] burden to prove a threshold level of intent to deceive by clear and convincing evidence.” *Star Scientific*, 537 F.3d at 1368; *see Larson*, 559 F.3d at 1341 (explaining that a “patentee is not required to offer evidence of good faith unless the accused infringer first meets its burden to prove—by clear and convincing evidence—the threshold level of deceptive intent”). Here, given Optium’s failure to proffer any evidence meeting a threshold level of intent to deceive, the presence or absence of a “good faith explanation” is irrelevant. As the Special Master properly observed: “Quite simply, Optium has not adduced sufficient facts on the issue of intent to shift the burden of going forward to Emcore. Under the circumstances, Emcore had no obligation to present evidence of ‘good faith.’” (A56.)

Further, contrary to Optium’s argument, this Court has repeatedly held that the absence of a “good faith explanation” does not constitute evidence that can meet a threshold level of intent to deceive: “An accused infringer cannot carry its threshold burden simply by pointing to the absence of a credible good faith explanation.” *Larson*, 559 F.3d at 1341; *see Star Scientific*, 537 F.3d at 1368 (“[Defendant] cannot carry its burden simply because [patentee] failed to prove a credible alternative explanation.”). Thus, “[w]hen the absence of a good faith explanation is the only evidence of intent, [] that evidence alone does not constitute clear and convincing evidence warranting an inference of intent.” *M. Eagles*, 439 F.3d at 1341.

II. OPTIUM CANNOT DEFEAT SUMMARY JUDGMENT BY BOOTSTRAPPING EVIDENCE OF MATERIALITY TO COMPENSATE FOR THE ABSENCE OF EVIDENCE ON INTENT

Seeking to compensate for the absence of any evidence that can sustain a threshold showing of intent to deceive by clear and convincing evidence, Optium attempts to inflate the materiality of the Willems article and bootstrap its intent case based on the article’s purported “high materiality.” (Br. at 42.) Optium’s argument is in direct conflict with this Court’s precedent and is contrary to the record evidence. *See AstraZeneca*, 2009 WL 3051792, at *7 (“Appellants state that they have shown ‘a high degree of materiality,’ and that they therefore need a proportionately lesser showing of intent to deceive to establish the threshold level

of intent. That is incorrect.”); *Braun Inc. v. Dynamics Corp. of Am.*, 975 F.2d 815, 822 (Fed. Cir. 1992) (“[I]n attempting to prove inequitable conduct, [defendant] could not rely solely on the materiality of [the] prior art.”).

A. Even If The Willems Article Were “Highly Material,” The Non-Disclosure Of The Article Could Not Presume Intent

Optium hinges its intent case on the belief that the Willems article is “highly material” and that its non-disclosure somehow proves an intent to deceive the PTO. (Br. at 37-47.) Optium’s argument is wrong as a matter of law because it improperly conflates the two independent elements of materiality and intent. *See, e.g., Goodyear Tire & Rubber Co. v. Hercules Tire & Rubber Co.*, 162 F.3d 1113, 1122 (Fed. Cir. 1998) (“Both materiality and culpable intent are essential factual predicates of inequitable conduct, and each must be provided by clear and convincing evidence.”).

This Court has repeatedly “emphasized that materiality does not presume intent, which is a separate and essential component of inequitable conduct.” *Star Scientific*, 537 F.3d at 1366; *see M. Eagles*, 439 F.3d at 1339-40 (same).

“**Materiality is not evidence of intent**, which must be established as a separate factual element.” *Abbott*, 544 F.3d at 1356. Accordingly, Optium “cannot prove deceptive intent by clear and convincing evidence simply by relying on the materiality of the errors. Rather, there must be clear and convincing evidence of ‘culpable’ conduct.” *Ariad Pharms.*, 560 F.3d at 1380.

Moreover, even if the Willems article were “highly material” as Optium argues (Br. at 25-29), no amount of materiality can fill the void of Optium’s lack of evidence showing a threshold level of intent to deceive, absent, *inter alia*, any evidence that an individual both knew of the Willems article and purposefully failed to disclose it. This Court has held time and again that “absent intent to withhold *it is not controlling whether the reference is found to anticipate or be otherwise material.*” *Allen Organ*, 839 F.2d at 1567; *see AstraZeneca*, 2009 WL 3051792, at *7 (“Intent to deceive cannot be inferred from a high degree of materiality alone, but must be separately proved to establish unenforceability due to inequitable conduct.”); *Ariad Pharms.*, 560 F.3d at 1380 (“Absent a finding of deceptive intent, *no amount of materiality* gives the district court discretion to find inequitable conduct.”); *Eisai*, 533 F.3d at 1362 (“Even here, where the submission to the Patent Office itself *was highly material to prosecution, the lack of deceptive intent rendered stillborn* yet another allegation of inequitable conduct.”); *Old Town Canoe Co. v. Confluence Holdings Corp.*, 448 F.3d 1309, 1322 (Fed. Cir. 2006) (explaining that, in context of failure to disclose best mode that may render claims invalid, “[e]ven if materiality is shown, [defendant] points to no evidence of intent to deceive”); *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1351-52 (Fed. Cir. 2002) (rejecting argument that prior art was “so material that nondisclosure justifies an intent to deceive”).

The case law cited by Optium does not hold to the contrary. Rather, those cases turn on facts that differ sharply from the present case. In *Paragon*, this Court explicitly noted that it was not the materiality of the omissions alone that permitted an inference of intent, but the extended course of misleading conduct involved in the case, including affirmative acts of submitting misleading affidavits. 984 F.2d at 1191. Similarly, in *Ferring*, the patentee affirmatively submitted misleading affidavits for the purpose of convincing the PTO examiner to withdraw a patent rejection, and further made “multiple omissions over a long period of time.” 437 F.3d at 1193-94. And in *Praxair, Inc. v. ATMI, Inc.*, the court determined that prior art, of which both the inventor and the patent attorney were admittedly aware, directly conflicted with representations made in the patent application. 543 F.3d 1306, 1315-16 (Fed. Cir. 2008). Optium has not even come close to that level of evidence here.

B. The Willems Article Is Not “Highly Material” Nor Is There Any Evidence That The Inventors Believed It Was

Optium’s attempt to transform materiality evidence into evidence of intent fails for another reason: the Willems article is not “highly material” prior art and, even if it was, there is no evidence that any applicant believed it to be “highly material.”

On its face, the Willems article has limited, if any, relevance to Claim 24. As the Special Master noted, the parties do not dispute that Claim 24—the only

claim that Optium discussed in its summary-judgment briefing—involves a three-dimensional contour map and two-tone phase modulation, while the Willems article does not mention a contour map and “*per se* discloses using one tone.”

(A34.) Indeed, Optium did not even attempt to identify a single “change in the examination, prosecution, or issuance of either patent-in-suit that would have been caused by—or might have been caused by—disclosure of the Willems article.”

(A41.) That is perhaps because any such claim could be dismissed out of hand.

The Examiners of both patents were *actually alerted* to the Willems article since they reviewed other prior art that explicitly references and discusses the article.

(A40-41, A356, A412, A562.) In similar instances, this Court has determined that a non-disclosed reference “is merely cumulative of art already considered by the examiner” when the non-disclosed reference “was discussed extensively in [another] patent that was before the examiner.” *Mentor H/S, Inc. v. Med. Device Alliance, Inc.*, 244 F.3d 1365, 1378 (Fed. Cir. 2001). The Special Master thus was not exaggerating when he stated that the Willems article was “at best” of “marginal materiality.” (A51.)

[

] in context, is that it refers to previous methods or apparatus that were used but failed to solve the problem” solved by the invention. (A37.) Moreover, as the Special Master pointed out, the form was filled out months before the patent application was even filed. (*Id.*) Therefore, even if the invention disclosure could be read to identify the Willems article as the prior art most relevant to the invention, which it cannot, Optium cannot automatically equate the “invention” discussed in the disclosure form to the “invention” disclosed and claimed in a later-developed patent application. (*Id.*) Contrary to Optium’s suggestion (Br. at 44-47), the Special Master *did* view the invention disclosure in the light most favorable to Optium.⁴ He did not, however, believe that Optium’s contrived interpretation of that document was a reasonable one, nor

⁴ By taking a single quote in the opinion out of context, Optium also repeatedly implies that the Special Master limited his review to only the *undisputed* facts of this case. (Br. at 20, 43.) The Special Master did nothing of the sort. The portion of his opinion that Optium highlights merely points out that the failure to disclose the Willems article to the PTO was insufficient to create an inference of intent, [

] The Special Master’s 15-page analysis of why Optium’s claim fails to pass the intent threshold (A44-58) clearly shows that he considered all of Optium’s proffered evidence before finding that Optium had failed to meet the intent prong of its inequitable-conduct claim.

was he required to. *See, e.g., Welch v. Ciampa*, 542 F.3d 927, 935 (1st Cir. 2008) (“Although we give the nonmoving party the benefit of all reasonable inferences, a party cannot rest on . . . improbable inferences or unsupported speculation to defeat a motion for summary judgment.”). As much as Optium would like it to be otherwise, the Willems article is “highly material” only to Optium’s litigation strategy, not to the claims in the patents-in-suit.

III. THE DISTRICT COURT PROPERLY “BALANCED THE EQUITIES” TO PRECLUDE AN INEQUITABLE-CONDUCT CLAIM

As set forth above, summary judgment against Optium is clearly justified based on the wholesale absence of evidence sufficient to satisfy the intent prong of Optium’s inequitable-conduct defense. Even were that conclusion in doubt, however, the grant of summary judgment should be sustained for a separate and independent reason—Optium has not even attempted to overcome the district court’s conclusion that, upon “balancing the equities” of Optium’s claim, summary judgment would be compelled.

As this Court stated in *Star Scientific*, the district court is vested with the discretion to balance facts and equities of the case “to determine whether the severe penalty of unenforceability should be imposed.” 537 F.3d at 1367. It is appropriate for a district court to apply its discretion to dismiss equitable claims at the summary judgment stage, particularly where the court does so while viewing

the facts in the light most favorable to the non-moving party. As one leading treatise explains:

Summary procedures to abort nonmeritorious litigation and avoid unnecessary expense and delay are important in equitable as well as legal actions. Thus, if there really is no “genuine issue of material fact,” the court should have the power to terminate the litigation on a summary-judgment motion, rather than engage in a potentially costly trial.

10B Charles Alan Wright et al., *Federal Practice and Procedure* § 2731 (3d ed. 1998).

Here, for purposes of balancing the equities, the court presumed that Optium had indeed provided sufficient evidence to pass both the intent and materiality thresholds of its inequitable conduct claim. (A59.) The court further assumed that Optium could prove every disputed fact that it claimed it could prove, including:

- [
-] and
- That the Willems article was highly material to Claim 24 of the '003 patent.

(A60.) Nevertheless, given that Optium’s evidence of intent was “scant, to say the least,” the court determined that Optium had not presented evidence compelling enough to warrant the severe penalties associated with inequitable conduct. (*Id.*) Accordingly, the court ruled that “the balance weighs in favor of finding no inequitable conduct.” (*Id.*)

This Court will overturn a discretionary “balancing of the equities” only when the appellant establishes “that the ruling is [1] based upon clearly erroneous findings of fact or [2] a misapplication or misinterpretation of applicable law or that [3] the ruling evidences a clear error of judgment on the part of the district court.” *Kingsdown*, 863 F.2d at 876. Moreover, in cases like this one, where there is minimal, if any, evidence of both materiality and intent, Optium would be required to show “compelling evidence of materiality and intent to deceive” to justify overturning the lower court’s discretionary decision. *Rentrop v. Spectranetics Corp.*, 550 F.3d 1112, 1120 (Fed. Cir. 2008).

Optium did not even attempt to argue that this case meets any of those standards in its opening brief, and it is precluded from doing so now. This Court has made clear that “[o]ur law is well established that arguments not raised in the opening brief are waived.” *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1319 (Fed. Cir. 2006); *see Regents of Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1566 (Fed. Cir. 1997) (an appellant waived an argument “by failing to raise it in its opening brief in this appeal” and raising it in a response brief). The court’s discretionary “balancing of the equities” must stand, and the grant of summary judgment to Emcore should therefore be affirmed.

CONCLUSION

For these reasons, the judgment of the district court should be affirmed.

Dated: September 30, 2009

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on September 30, 2009, two bound copies of the foregoing NONCONFIDENTIAL BRIEF FOR DEFENDANT-APPELLEE, were served by overnight mail through a third-party commercial carrier upon the following counsel of record:

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I also certify that on September 30, 2009, one original and 4 bound copies of the foregoing NONCONFIDENTIAL BRIEF FOR DEFENDANT-APPELLEE, were filed, by hand delivery, in the Office of the Clerk, United States Court of Appeals for the Federal Circuit.

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CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B). It contains 11,584 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b).

2. This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6). It has been prepared in proportionally spaced typeface using Microsoft Office Word 2003 SP2 in 14 point Times New Roman font.

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