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**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA**

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA; and BECTON,
DICKINSON and COMPANY,

Plaintiffs,

v.

AFFYMETRIX, INC.; and LIFE
TECHNOLOGIES CORP.,

Defendants.

Case No.: 17-cv-01394-H-NLS

**CLAIM CONSTRUCTION ORDER
FOR THE '799 PATENT, THE '673
PATENT, AND THE '113 PATENT**

19 In the present action, Plaintiffs the Regents of the University of California, Becton,
20 Dickinson and Company, Sirigen, Inc., and Sirigen II Limited assert claims of patent
21 infringement against Defendants Affymetrix, Inc. and Life Technologies Corp., alleging
22 infringement of U.S. Patent No. 9,085,799, U.S. Patent No. 8,110,673, and U.S. Patent No.
23 8,835,113.¹ (Doc. No. 101, FAC ¶¶ 52-81.) On January 26, 2018, the parties filed their
24 joint claim construction prehearing statement, chart, and worksheet, identifying the
25

26
27 ¹ In this action, Plaintiffs also assert claims of patent infringement against Defendants for
28 infringement of U.S. Patent No. 9,547,008, U.S. Patent No. 9,139,869, U.S. Patent No. 8,575,303, and
U.S. Patent No. 8,455,613. (Doc. No. 101, FAC ¶¶ 82-115.) The Court will hold a separate claim
construction hearing on those four patents at a later time.

1 disputed claim terms from the '799 patent, the '673 patent, and the '113 patent. (Doc. No.
2 97.) On February 23, 2018, the parties each filed an opening claim construction brief.
3 (Doc. Nos. 111, 113.) On March 9, 2018, Plaintiffs filed their responsive claim
4 construction brief. (Doc. No. 123.) On March 13, 2018, Defendants filed their corrected
5 responsive claim construction brief. (Doc. No. 128.) On March 21, 2018, the Court issued
6 a tentative claim construction order. (Doc. No. 132.)

7 The Court held a claim construction hearing on March 23, 2018. Donald R. Ware,
8 Barbara Fiacco, and Jesse Hindman appeared for Plaintiffs. Douglas E. Lumish, Roger J.
9 Chin, and Brent T. Watson appeared for Defendants. After considering the parties' briefs,
10 the parties' arguments at the hearing, and all relevant information, the Court construes the
11 disputed terms from the '799 patent, the '673 patent, and the '113 patent.

12 **Background**

13 On July 10, 2017, Plaintiffs Regents and Becton, Dickinson filed a complaint for
14 patent infringement against Defendants Affymetrix and Life Technologies, alleging
15 infringement of the '799 patent, the '673 patent, and the '113 patent. (Doc. No. 1, Compl.)
16 On September 8, 2017, Defendants filed an answer to Plaintiffs' complaint. (Doc. No. 37.)

17 On October 6, 2017, the Court issued a scheduling order. (Doc. No. 55.) On
18 November 20, 2017, the Court denied Plaintiff Becton, Dickinson's motion for a
19 preliminary injunction without prejudice. (Doc No. 69.) On November 30, 2017, the Court
20 issued an amended scheduling order. (Doc. No. 76.)

21 On February 7, 2018, the Court granted the parties' joint motion for leave for
22 Plaintiffs to file a first amended complaint and to modify the scheduling order. (Doc. No.
23 100.) On February 9, 2018, Plaintiffs filed an amended complaint: (1) adding Sirigen and
24 Sirigen II as additional Plaintiffs and adding claims that Defendants' products infringe four
25 Sirigen patents: U.S. Patent No. 9,547,008, U.S. Patent No. 9,139,869, U.S. Patent No.
26 8,575,303, and U.S. Patent No. 8,455,613; (2) adding infringement allegations against
27 additional accused products; and (3) adding allegations of induced infringement against
28 Defendants. (Doc. No. 101, FAC.) On February 23, 2018, the Court issued a second

1 amended scheduling order. (Doc. No. 105.) By the present claim construction briefs, the
2 parties request that the Court construe disputed claim terms from the '799 patent, the '673
3 patent, and the '113 patent. (Doc. Nos. 111, 113.)

4 Discussion

5 **I. Legal Standards for Claim Construction**

6 Claim construction is an issue of law for the court to decide. Teva Pharm. USA, Inc.
7 v. Sandoz, Inc., 135 S. Ct. 831, 838 (2015); Markman v. Westview Instr., Inc., 517 U.S.
8 370, 372 (1996). Although claim construction is ultimately a question of law, “subsidiary
9 factfinding is sometimes necessary.” Teva, 135 S. Ct. at 838.

10 “The purpose of claim construction is to ‘determin[e] the meaning and scope of the
11 patent claims asserted to be infringed.’” O2 Micro Int’l Ltd. v. Beyond Innovation Tech.
12 Co., 521 F.3d 1351, 1360 (Fed. Cir. 2008). “It is a ‘bedrock principle’ of patent law that
13 the ‘claims of a patent define the invention to which the patentee is entitled the right to
14 exclude.’” Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc).

15 Claim terms “‘are generally given their ordinary and customary meaning[,]’” which
16 “is the meaning that the term would have to a person of ordinary skill in the art in question
17 at the time of the invention.” Id. at 1312–13. “In some cases, the ordinary meaning of
18 claim language as understood by a [PHOSITA] may be readily apparent even to lay judges,
19 and claim construction in such cases involves little more than the application of the widely
20 accepted meaning of commonly understood words.” Id. at 1314. “However, in many
21 cases, the meaning of a claim term as understood by persons of skill in the art is not readily
22 apparent.” O2 Micro, 521 F.3d at 1360. If the meaning of the term is not readily apparent,
23 the court must look to “those sources available to the public that show what a person of
24 skill in the art would have understood disputed claim language to mean,” including intrinsic
25 and extrinsic evidence. See Phillips, 415 F.3d at 1314. A court should begin with the
26 intrinsic record, which consists of the language of the claims, the patent specification, and,
27 if in evidence, the prosecution history of the asserted patent. Id.; see also Vederi, LLC v.
28 Google, Inc., 744 F.3d 1376, 1382 (Fed. Cir. 2014) (“In construing claims, this court relies

1 primarily on the claim language, the specification, and the prosecution history.”).

2 In determining the proper construction of a claim, a court should first look to the
3 language of the claims. See Vitronics, 90 F.3d at 1582; see also Comark Commc’ns v.
4 Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) (“The appropriate starting point . . . is
5 always with the language of the asserted claim itself.”). The context in which a disputed
6 term is used in the asserted claims may provide substantial guidance as to the meaning of
7 the term. See Phillips, 415 F.3d at 1314. In addition, the context in which the disputed
8 term is used in other claims, both asserted and unasserted, may provide guidance because
9 “the usage of a term in one claim can often illuminate the meaning of the same term in
10 other claims.” Id. Furthermore, a disputed term should be construed “consistently with its
11 appearance in other places in the same claim or in other claims of the same patent.”
12 Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001); accord
13 Microprocessor Enhancement Corp. v. Texas Instruments Inc., 520 F.3d 1367, 1375 (Fed.
14 Cir. 2008); see also Paragon Sols., LLC v. Timex Corp., 566 F.3d 1075, 1087 (Fed. Cir.
15 2009) (“We apply a presumption that the same terms appearing in different portions of the
16 claims should be given the same meaning.” (internal quotation marks omitted)). Moreover,
17 “[a] claim construction that gives meaning to all the terms of the claim is preferred over
18 one that does not do so.” Vederi, 744 F.3d 1383.

19 A court must also read claims “in view of the specification, of which they are a part.”
20 Markman, 52 F.3d at 979; see 35 U.S.C. § 112(b) (“The specification shall conclude with
21 one or more claims particularly pointing out and distinctly claiming the subject matter
22 which the inventor or a joint inventor regards as the invention.”). “‘Apart from the claim
23 language itself, the specification is the single best guide to the meaning of a claim term.’”
24 Vederi, 744 F.3d at 1382. For example, “a claim construction that excludes [a] preferred
25 embodiment [described in the specification] ‘is rarely, if ever, correct and would require
26 highly persuasive evidentiary support.’” Adams Respiratory Therapeutics, Inc. v. Perrigo
27 Co., 616 F.3d 1283, 1290 (Fed. Cir. 2010).

28 But “[t]he written description part of the specification does not delimit the right to

1 exclude. That is the function and purpose of claims.” Markman v. Westview Instruments,
2 Inc., 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc). “[A] claim construction must not import
3 limitations from the specification into the claims.” Douglas Dynamics, LLC v. Buyers
4 Products Co., 717 F.3d 1336, 1342 (Fed. Cir. 2013). Therefore, “it is improper to read
5 limitations from a preferred embodiment described in the specification—even if it is the
6 only embodiment—into the claims absent a clear indication in the intrinsic record that the
7 patentee intended the claims to be so limited.” Dealertrack, Inc. v. Huber, 674 F.3d 1315,
8 1327 (Fed. Cir. 2012); see also Kara Tech. Inc. v. Stamps.com Inc., 582 F.3d 1341, 1348
9 (Fed. Cir. 2009) (“The patentee is entitled to the full scope of his claims, and we will not
10 limit him to his preferred embodiment or import a limitation from the specification into the
11 claims.”).

12 In most situations, analysis of the intrinsic evidence will resolve claim construction
13 disputes. See Vitronics, 90 F.3d at 1583; Teva, 135 S. Ct. at 841. However, “[w]here the
14 intrinsic record is ambiguous, and when necessary,” district courts may “rely on extrinsic
15 evidence, which ‘consists of all evidence external to the patent and prosecution history,
16 including expert and inventor testimony, dictionaries, and learned treatises.’” Power
17 Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc., 711 F.3d 1348, 1360 (Fed. Cir.
18 2013) (quoting Phillips, 415 F.3d at 1317). A court must evaluate all extrinsic evidence in
19 light of the intrinsic evidence. Phillips, 415 F.3d at 1319. “Extrinsic evidence may not be
20 used ‘to contradict claim meaning that is unambiguous in light of the intrinsic evidence.’”
21 Summit 6, LLC v. Samsung Elecs. Co., 802 F.3d 1283, 1290 (Fed. Cir. 2015); see also Bell
22 Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc., 262 F.3d 1258, 1269 (Fed. Cir.
23 2001) (“[E]xtrinsic evidence . . . may not be used to vary, contradict, expand, or limit the
24 claim language from how it is defined, even by implication, in the specification or file
25 history.”); Vederi, 744 F.3d at 1382 (“[E]xtrinsic evidence may be less reliable than the
26 intrinsic evidence.”). In cases where subsidiary facts contained in the extrinsic evidence
27 “are in dispute, courts will need to make subsidiary factual findings about that extrinsic
28 evidence.” Teva, 135 S. Ct. at 841.

1 “[D]istrict courts are not (and should not be) required to construe every limitation
2 present in a patent’s asserted claims.” O2 Micro, 521 F.3d at 1362. In certain situations,
3 it is appropriate for a court to determine that a claim term needs no construction and its
4 plain and ordinary meaning applies. See id.; Phillips, 415 F.3d at 1314. But “[a]
5 determination that a claim term ‘needs no construction’ or has the ‘plain and ordinary
6 meaning’ may be inadequate when a term has more than one ‘ordinary’ meaning or when
7 reliance on a term’s ‘ordinary’ meaning does not resolve the parties’ dispute.” O2 Micro,
8 521 F.3d at 1361. If the parties dispute the scope of a certain claim term, it is the court’s
9 duty to resolve the dispute. Id. at 1362; accord Eon Corp. IP Holdings v. Silver Spring
10 Networks, 815 F.3d 1314, 1318 (Fed. Cir. 2016).

11 **II. Analysis of the Disputed Claim Terms**

12 A. The ’799 Patent

13 The ’799 patent is entitled “Methods and compositions for detection and analysis of
14 polynucleotides using light harvesting multichromophores.” U.S. Patent No. 9,085,799
15 (filed Jul. 21, 2015), at (54). The invention disclosed in the ’799 patent relates to “methods,
16 articles and compositions for the detection and analysis of polynucleotides in a sample.”
17 Id. at 1:28-30.

18 The specification of the ’799 patent explains: “Methods permitting DNA sequence
19 detection in real time and with high sensitivity are of great scientific and economic interest.
20 Their applications include medical diagnostics, identification of genetic mutations, gene
21 delivery monitoring and specific genomic techniques.” Id. at 1:34-38 (footnotes omitted).
22 The specification further explains that at the time of the invention, there was a need in the
23 art for methods of detecting and analyzing particular polynucleotides in a sample, and that
24 such methods are provided in the ’799 patent. Id. at 1:49-58.

25 The specification of the ’799 patent describes the method as follows:

26 The method of the invention comprises contacting a sample with an aqueous
27 solution comprising at least two components; (a) a light harvesting,
28 polycationic, luminescent multichromophore system such as, for example, a
conjugated polymer, semiconductor quantum dot or dendritic structure that is

1 water soluble, and (b) a sensor polynucleotide conjugated to a luminescent
2 signaling chromophore (referred to as “Oligo-C*”).

3 Id. at 3:18-25.

4 Claim 1 of the ’799 patent claims:

5 1. A method comprising:

6 (a) contacting a sample with a light harvesting multichromophore system, the
7 system comprising:

8 i) a signaling chromophore; and

9
10 ii) a water-soluble conjugated polymer comprising a delocalized
11 electronic structure, wherein the polymer can transfer energy from its
12 excited state to the signaling chromophore to provide a greater than 4
13 fold increase in fluorescence emission from the signaling chromophore
in the absence of the polymer;

14 (b) applying a light source to the sample; and

15 (c) detecting whether light is emitted from the signaling chromophore.
16

17 Id. at 21:51-65.

18 i. “a sample”

19 Plaintiffs propose that the term “a sample” be construed as “a substance to be
20 analyzed.” (Doc. No. 113 at 9.) Defendants propose that this term be construed as “a
21 biological material that is analyzed for a target polynucleotide.” (Doc. No. 111 at 4.) Here,
22 the parties agree that the term “a sample” means a substance or material that is analyzed.
23 But the parties dispute whether the term “a sample” within the ’799 patent specifically
24 requires that the substance or material be analyzed for a target polynucleotide. Because
25 the parties dispute the scope of this claim term, the Court must resolve the parties’ dispute.
26 See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318.

27 The Court begins its analysis of the parties’ claim construction dispute by examining
28 the claim language. The claim language in the ’799 patent does not specifically require

1 that the sample be analyzed for a target polynucleotide. For example, claim 1 of the '799
2 patent claims: “[a] method” involving “contacting a sample with a light harvesting
3 multichromophore system” and “applying a light source to the sample.” ’799 Patent at
4 21:51-63. The claim language does not state that the substance is to be analyzed for a target
5 polynucleotide.

6 In support of their contention that the term “sample” requires that the substance is
7 analyzed for a target polynucleotide, Defendants rely heavily on language contained in the
8 ’799 patent’s specification. The specification provides: “[t]his invention relates to
9 methods, articles, and compositions for the detection and analysis of polynucleotides in a
10 sample.” ’799 Patent at 1:28-30. The specification further provides in the “summary of
11 the invention section:”

12 Methods, compositions and articles of manufacture for detecting and assaying
13 a target polynucleotide in a sample are provided.

14 A sample suspected of containing the target polynucleotide is contacted with
15 a polycationic multichromophore and a sensor polynucleotide complementary
16 to the target polynucleotide. . . . In the presence of target polynucleotide in
17 the sample, the signaling chromophore can acquire energy more efficiently
18 from the excited polycationic multichromophore and emit increased amounts
19 of light or signal which can be detected. The target polynucleotide can be
analyzed as it occurs in the sample, or can be amplified prior to or in
conjunction with analysis.

20 Id. at 1:56-62; see also ’799 Patent at 1:49-52 (“There is a need in the art for methods of
21 detecting and analyzing particular polynucleotides in a sample, and for compositions and
22 articles of manufacture useful in such methods.”), 2:4-11, 8:20-26.² Here, the specification
23 describes the invention claimed in the ’799 patent as a whole and provides that it is for the
24 detection and analysis of polynucleotides in a sample. The Federal Circuit has explained
25 that “[w]hen a patentee describes the features of the present invention as a whole, he alerts
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27 ² Defendants note that, as a whole, the ’799 patent contains over 250 references to polynucleotides,
28 DNA, or RNA, and the specification fails to describe any example of interrogating a sample for a target
other than a target polynucleotide. (Doc. No. 111 at 4.)

1 the reader that this description limits the scope of the invention.” Pacing Techs., LLC v.
2 Garmin Int’l, Inc., 778 F.3d 1021, 1025 (Fed. Cir. 2015) (internal quotation marks
3 omitted); accord Luminara Worldwide, LLC v. Liown Elecs. Co., 814 F.3d 1343, 1353
4 (Fed. Cir. 2016); Regents of Univ. of Minnesota v. AGA Med. Corp., 717 F.3d 929, 936
5 (Fed. Cir. 2013); see, e.g., Honeywell Int’l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1318
6 (Fed. Cir. 2006) (“[T]he written description uses language that leads us to the conclusion
7 that a fuel filter is the only ‘fuel injection system component’ that the claims cover, and
8 that a fuel filter was not merely discussed as a preferred embodiment. On at least four
9 occasions, the written description refers to the fuel filter as ‘this invention’ or ‘the present
10 invention[.]’”); Nystrom v. TREX Co., 424 F.3d 1136, 1143-45 (Fed. Cir. 2005). Such
11 language constitutes “a clear and unmistakable statement of disavowal,” limiting the
12 claims. Pacing Techs., 778 F.3d at 1025. Accordingly, in light of this language in the
13 specification describing the invention as a whole, Defendants’ proposed claim construction
14 properly includes that the limitation that the claimed “sample” is a material that is analyzed
15 for a target polynucleotide.

16 In response, Plaintiffs argue that the Court should reject Defendants’ proposed
17 construction because a Court should not import limitations from preferred embodiments
18 described in the specification into the claims. (Doc. No. 113 at 9; Doc. No. 123 at 2.) The
19 Court recognizes that “it is improper to read limitations from a preferred embodiment
20 described in the specification—even if it is the only embodiment—into the claims absent
21 a clear indication in the intrinsic record that the patentee intended the claims to be so
22 limited.” Dealertrack, 674 F.3d at 1327. But in the passages at issue, the specification is
23 not merely describing preferred embodiments. Rather, the specification is describing
24 features of the present invention as a whole and explaining that the invention involves
25 detecting and analyzing polynucleotides in a sample. See ’799 Patent at 1:28-30, 1:49-52,
26 1:56-2:3. The Federal Circuit has explained that when the patentee uses language
27 describing features of the invention as a whole, such language constitutes “a clear and
28 unmistakable statement of disavowal,” limiting the claims. Pacing Techs., 778 F.3d at

1 1025; Luminara Worldwide, 814 F.3d at 1353; Regents of Univ. of Minnesota, 717 F.3d
2 at 936. Accordingly, the Court rejects Plaintiffs’ contention that the portions of the
3 specification at issue are merely describing preferred embodiments.³

4 Plaintiffs also argue that an examination of the prosecution history for the ’799
5 patent demonstrates that the Court should reject Defendants’ proposed construction. (Doc.
6 No. 113 at 10; Doc. No. 123 at 1-2.) Plaintiffs note that during the prosecution of the ’799
7 patent, earlier proposed claims contained language claiming a “sample that is suspected of
8 containing a target polynucleotide,” but that language was removed from the claims that
9 ultimately issued. (*Id.* (citing Doc. No. 113-5, Ex. 12).) In 3M Innovative Properties Co.
10 v. Avery Dennison Corp., the Federal Circuit found that “[a] broadening claim amendment
11 made during the prosecution history of the [patent at issue] support[ed] a plain-meaning
12 construction of claim 1 without [the limitation that was removed].” 350 F.3d 1365, 1372
13 (Fed. Cir. 2003); *see also* Aylus Networks, Inc. v. Apple, Inc., No. C-13-4700 EMC, 2015
14 WL 355174, at *11 (N.D. Cal. Jan. 27, 2015) (“In general, if a claim limitation was
15 removed during prosecution, it is improper to read that limitation back into the claim during
16 litigation.”). But 3M is distinguishable from the present case. There is nothing in the 3M
17 decision showing that the patent at issue in that case contained statements in the
18 specification describing the limitation at issue as a feature of the invention as whole.⁴ In
19

20 ³ Plaintiffs also argue that the specification supports their broad construction for this claim term.
21 (Doc. No. 113 at 9.) Specifically, Plaintiffs cite to the following passage in the specification explaining
22 that the claimed “samples” can be “blood, urine, semen, milk, sputum, [and] mucus.” (*Id.* (citing ’799
23 Patent at 8:29-31).) But this statement in the specification is preceded by the following sentence: “The
24 portion of the sample comprising or suspected of comprising the target polynucleotide can be any source
25 of biological material which comprises polynucleotides that can be obtained from a living organism
26 directly or indirectly, including cells, tissue or fluid, and the deposits left by that organism, including
27 viruses, mycoplasma, and fossils.” ’799 Patent at 8:21-26. Thus, the cited portion of the specification
28 actually supports Defendants’ proposed construction, not Plaintiffs’ proposal.

26 ⁴ At the claim construction hearing, Plaintiffs argued that the patent at issue in 3M contained
27 statements in the specification explaining that the limitation at issue was a central feature of the claimed
28 invention. But the citations that Plaintiffs provided to the Court did not actually support this argument.
The limitation at issue in 3M was whether the claimed “multiple embossed patterns” in U.S. Patent No.
5,897,930 must be created “sequentially.” *See* 350 F.3d at 1371. The specification of the ’930 patent

1 contrast, here, despite the fact that the claims were amended during the prosecution history,
2 the specification that issued contains clear statements explaining that the invention as a
3 whole is directed to the detection and analysis of polynucleotides.⁵ The Federal Circuit
4 has held in several cases that such statements in the specification describing the invention
5 as a whole limit the scope of the invention. See Pacing Techs., 778 F.3d at 1025; Luminara
6 Worldwide, 814 F.3d at 1353; Regents of Univ. of Minnesota, 717 F.3d at 936; see also
7 Phillips, 415 F.3d at 1317 (explaining that the prosecution history “often lacks the clarity
8 of the specification and thus is less useful for claim construction purposes”). In addition,
9 the Court notes that the prosecution history is at best ambiguous as to why the amendments
10 at issue were made. Accordingly, the Court rejects Plaintiffs’ reliance on the prosecution
11 history.

12 Finally in support of its proposed construction, Plaintiffs also rely on extrinsic
13 evidence, specifically expert testimony. (Doc. No. 113 at 9.) But “[e]xtrinsic evidence
14 may not be used ‘to contradict claim meaning that is unambiguous in light of the intrinsic
15 evidence.’” Summit 6, 802 F.3d at 1290; see Bell Atl. Network, 262 F.3d at 1269. The
16 specification contains clear language describing the invention as a whole and explaining
17 that the invention is directed to the detection and analysis of polynucleotides. Accordingly,
18 Plaintiffs cannot use extrinsic evidence to contradict this clear disclaimer contained in the
19 specification.

20 In sum, the Court adopts Defendants’ proposed construction for this claim term, and
21

22
23 does not refer to sequentially created patterns as being a feature of the claimed invention in any of the
24 portions of the specification cited by Plaintiffs. See U.S. Patent No. 5,897,930, at 2:16-18, 6:64-7:6.

25 3M is further distinguishable in that the patent at issue in that case contained an embodiment that
26 allowed for the creation of “multiple embossed patterns in a single step.” See ’350 F.3d at 1372. Thus,
27 the patent at issue in 3M expressly disclosed an embodiment that did not include the limitation at issue.
28 In contrast, here, Plaintiffs have failed to identify any embodiment disclosed in the ’799 patent involving
a sample that is targeted for anything other than a target polynucleotide.

⁵ In addition, the Court notes that 3M is pre-Phillips case law that contains citations to Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1201 (Fed. Cir. 2002). See, e.g., 3M, 350 F.3d at 1371.

1 the Court rejects Plaintiffs’ proposed construction. The Court construes the term “a
2 sample” as “a biological material that is analyzed for a target polynucleotide.”

3 ii. “multichromophore system”

4 Plaintiffs propose that the term “multichromophore system” be construed as “a set
5 of multiple chromophores working together in an integrated system, which chromophores
6 may or may not be chemically bound to one another.” (Doc. No. 113 at 8.) Defendants
7 propose that this term be construed as “a polycationic multichromophore.” (Doc. No. 111
8 at 7.) Here, the parties dispute whether the claimed “multichromophore system” is cationic
9 (positively charged). Because the parties dispute the scope of this claim term, the Court
10 must resolve the parties’ dispute. See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318.

11 The Court notes that its analysis of the parties’ dispute as to the proper construction
12 of this claim term is similar to its analysis of the parties’ dispute as to the prior claim term.
13 The Court begins its analysis of the parties’ claim construction dispute by examining the
14 claim language. The claim language in the ’799 patent does not specifically require that
15 the claimed “multichromophore system” be polycationic. For example, claim 1 of the ’799
16 patent claims: “[a] method” involving “contacting a sample with a light harvesting
17 multichromophore system.” ’799 Patent at 21:51-53. The claim language does not state
18 that the multichromophore system is polycationic.

19 In support of their contention that the claimed “multichromophore system” is
20 polycationic, Defendants rely primarily on language in the specification. The ’799 patent’s
21 specification provides: “The multichromophores used in the present invention are
22 polycationic and can interact with a sensor polynucleotide electrostatically.” ’799 Patent
23 at 11:41-43. The specification further provides: “The method of the invention comprises
24 contacting a sample with an aqueous solution comprising at least two components;
25 [including] (a) a light harvesting, polycationic, luminescent multichromophore system . . .
26 .” Id. at 3:18-21; see also id. at 1:59-60 (“A sample suspected of containing the target
27 polynucleotide is contacted with a polycationic multichromophore”), at 6:1-20
28 (“DEFINITIONS . . . Whether modified or unmodified, the sensor polynucleotide is

1 anionic and can interact with the cationic multichromophore in the absence of target
2 polynucleotide.”), at 10:53 (“The Polycationic Multichromophore”), at 12:59-62
3 (“Chromophores useful in the inventions described herein include any substance which can
4 absorb energy from a polycationic multichromophore in an appropriate solution and emit
5 light.”). Here, the specification is describing the invention claimed in the ’799 patent as a
6 whole and provides that the claimed “multichromophore system” is polycationic. The
7 Federal Circuit has explained that “[w]hen a patentee describes the features of the present
8 invention as a whole, he alerts the reader that this description limits the scope of the
9 invention.” Pacing Techs., 778 F.3d at 1025 (internal quotation marks omitted); accord
10 Luminara Worldwide, 814 F.3d at 1353; Regents of Univ. of Minnesota, 717 F.3d at 936.
11 Such language constitutes “a clear and unmistakable statement of disavowal,” limiting the
12 claims. Pacing Techs., 778 F.3d at 1025. Accordingly, in light of this language in the
13 specification describing the invention as a whole, Defendants’ proposed claim construction
14 properly includes that the limitation that the claimed “multichromophore system” is
15 polycationic.

16 In response, Plaintiffs argue that the Court should reject Defendants’ proposed
17 construction because a Court should not import limitations from preferred embodiments
18 described in the specification into the claims. (Doc. No. 113 at 8; Doc. No. 123 at 2.) The
19 Court recognizes that “it is improper to read limitations from a preferred embodiment
20 described in the specification—even if it is the only embodiment—into the claims absent
21 a clear indication in the intrinsic record that the patentee intended the claims to be so
22 limited.” Dealertrack, 674 F.3d at 1327. But in the passages at issue, the specification is
23 not merely describing preferred embodiments. Rather, the specification is describing
24 features of the present invention as a whole and explaining that the multichromophore
25 system claimed in the invention is polycationic. See ’799 Patent at 11:41-43, 3:18-21,
26 1:59-60, 6:1-20, 12:59-62. The Federal Circuit has explained that when the patentee uses
27 language describing features of the invention as a whole, such language constitutes “a clear
28 and unmistakable statement of disavowal,” limiting the claims. Pacing Techs., 778 F.3d at

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3 specification at issue are merely describing preferred embodiments.

4 Plaintiffs also argue that an examination of the prosecution history for the ’799
5 patent demonstrates that the Court should reject Defendants’ proposed construction. (Doc.
6 No. 113 at 9; Doc. No. 123 at 1-2.) Plaintiffs note that during the prosecution of the ’799
7 patent, earlier proposed claims contained language claiming a “polycationic
8 multichromophore,” but the “polycationic” language was removed from the claims that
9 ultimately issued. (*Id.* (citing Doc. No. 113-5, Ex. 12).) In 3M Innovative Properties Co.
10 v. Avery Dennison Corp., the Federal Circuit found that “[a] broadening claim amendment
11 made during the prosecution history of the [patent at issue] support[ed] a plain-meaning
12 construction of claim 1 without [the limitation that was removed].” 350 F.3d at 1372. But
13 3M is distinguishable. There is nothing in the 3M decision showing that the patent at issue
14 in that case contained statements in the specification describing the limitation at issue as a
15 feature of the invention as whole. In contrast, here, despite the fact that the claims were
16 amended during the prosecution history, the specification that issued contains clear
17 statements explaining that the multichromophore system in the invention is polycationic.
18 The Federal Circuit has held in several cases that such statements in the specification
19 describing the invention as a whole limit the scope of the invention. See Pacing Techs.,
20 778 F.3d at 1025; Luminara Worldwide, 814 F.3d at 1353; Regents of Univ. of Minnesota,
21 717 F.3d at 936; see also Phillips, 415 F.3d at 1317 (explaining that the prosecution history
22 “often lacks the clarity of the specification and thus is less useful for claim construction
23 purposes”). In addition, the Court notes that the prosecution history is at best ambiguous
24 as to why the amendments at issue were made. Accordingly, the Court rejects Plaintiffs’
25 reliance on the prosecution history.

26 Finally in support of its proposed claim construction, Plaintiffs also rely on extrinsic
27 evidence, specifically expert testimony. (Doc. No. 113 at 8.) But “[e]xtrinsic evidence
28 may not be used ‘to contradict claim meaning that is unambiguous in light of the intrinsic

evidence.” Summit 6, 802 F.3d at 1290; see Bell Atl. Network, 262 F.3d at 1269. The specification contains clear language describing the invention as a whole and explaining that the claimed multichromophore system is polycationic. Accordingly, Plaintiffs cannot use extrinsic evidence to contradict this clear disclaimer contained in the specification.

In sum, the Court adopts Defendants’ proposed construction for this claim term, and the Court rejects Plaintiffs’ proposed construction for this claim term. The Court construes the term “multichromophore system” as “a polycationic multichromophore.”

iii. “water-soluble conjugated polymer”

Plaintiffs propose that the term “water-soluble conjugated polymer” be construed as “a conjugated polymer that is water soluble at the time the sample is contacted with the light-harvesting multichromophore system in the performance of the method.” (Doc. No. 113 at 10.) Defendants propose that this term be construed as “a cationic conjugated polymer capable of being dissolved in water at the time the multichromophore system is formed.” (Doc. No. 111 at 7.) Here, the parties dispute whether the claimed “water-soluble conjugated polymer” must be water soluble at the time the multichromophore system is formed or at the time the sample is contacted with the multichromophore system. Because the parties dispute the scope of this claim term, the Court must resolve the parties’ dispute. See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318.

A review of the claim language resolves the parties’ dispute as to this claim term. Claim 1 of the ’799 patent is a method claim that includes the step of “contacting a sample with a light harvesting multichromophore system.” ’799 Patent at 21:52-53. This contacting step includes the “water-soluble conjugated polymer” limitation. Id. at 21:55. Thus, under the plain language of the claim 1, the “water-soluble conjugated polymer” must be water soluble at the contacting step. Accordingly, the claim language supports Plaintiffs’ proposed construction.

In support of their contention that the “water-soluble conjugated polymer” must be water soluble at the time the multichromophore system is formed and not at the contacting step, Defendants note that the ’799 patent’s specification provides an example where the

1 multichromophore system is a solid substrate such as a film. (Doc. No. 111 at 10 (citing
2 '799 patent at 15:26-37).) But the specification of the '799 patent further explains that
3 “[t]he methods [of the invention] can be performed on a substrate, as well as in solution,
4 although the solution format is expected to be more rapid due to diffusion issues.” '799
5 Patent at 4:52-54. Claim 1 of the '799 patent claims the solution version of the invention.

6 In sum, the Court adopts Plaintiffs’ proposed construction for this claim term, and
7 the Court rejects Defendants’ proposed construction. The Court construes the term “water-
8 soluble conjugated polymer” as “a conjugated polymer that is water soluble at the time the
9 sample is contacted with the light-harvesting multichromophore system in the performance
10 of the method.”

11 iv. “the polymer can transfer energy from its excited state to the signaling
12 chromophore to provide a greater than 4 fold increase in fluorescence
13 emission from the signaling chromophore than can be achieved by direct
14 excitation of the signaling chromophore in the absence of the polymer”

15 Plaintiffs propose that the claim term “the polymer can transfer energy from its
16 excited state to the signaling chromophore to provide a greater than 4 fold increase in
17 fluorescence emission from the signaling chromophore than can be achieved by direct
18 excitation of the signaling chromophore in the absence of the polymer” be construed as
19 “the ratio of (a) the emission of the signaling chromophore when the polymer is directly
20 excited with light at a wavelength that does not substantially excite the signaling
21 chromophore; to (b) the emission from the signaling chromophore when the signaling
22 chromophore is directly excited with light at a wavelength that does not substantially excite
23 the conjugated polymer is from 4 to about 25.” (Doc. No. 113 at 11.) Defendants propose
24 that this claim term be construed as “the polymer can transfer energy from its excited state
25 to the signaling chromophore to provide an increase in fluorescence emission from the
26 signaling chromophore of more than 4 fold, with no upper limit, than can be achieved by
27 direct excitation of the signaling chromophore without the polymer present.” (Doc. No.
28 111 at 10.)

1 The parties' dispute regarding the proper construction of this claim term is two-part.
2 First, the parties dispute the proper scope of the phrase "greater than 4 fold increase."
3 Second, the parties dispute the proper scope of the phrase "in the absence of the polymer."
4 Because the parties dispute the scope of this claim term, the Court must resolve the parties'
5 dispute. See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318. The Court addresses
6 each of the parties' two disputes in turn below.

7 With respect to the phrase "greater than 4 fold increase," the parties dispute whether
8 this phrase contains an upper limit. Plaintiffs assert that the phrase has an inherent upper
9 limit of about 25. (Doc. No. 113 at 13.) In contrast, Defendants assert that the phrase has
10 no upper limit. (Doc. No. 111 at 11.)

11 The Court begins its analysis of the parties' dispute regarding the phrase "greater
12 than 4 fold increase" by examining the claim language. Claim 1 of '799 patent provides
13 that: "the polymer can transfer energy from its excited state to the signaling chromophore
14 to provide a greater than 4 fold increase in fluorescence emission." '799 Patent at 21:56-
15 59. The claim language of claim 1 of the '799 patent requires that the claimed polymer is
16 able to transfer energy to the signaling chromophore to provide a greater than 4 fold
17 increase in fluorescence emission. The claim language places no upper limit on the
18 increase in fluorescence emission. The claim language merely requires that the increase
19 be at least greater than 4 fold. Further, the Court notes that the Federal Circuit has held
20 that "[o]pen-ended claims are not inherently improper." Andersen Corp. v. Fiber
21 Composites, LLC, 474 F.3d 1361, 1376 (Fed. Cir. 2007) (quoting Scripps Clinic &
22 Research Found. v. Genentech, Inc., 927 F.2d 1565, 1572 (Fed. Cir. 1991)). Accordingly,
23 the claim language supports Defendants' proposed construction, not Plaintiffs' proposal.

24 In support of their assertion that the phrase "greater than 4 fold increase" has an
25 inherent upper limit of about 25, Plaintiffs rely on Federal Circuit case law holding that
26 open-ended claims have inherent upper limits. In Andersen Corp. v. Fiber Composites,
27 LLC, the Federal Circuit explained that open-ended claims are permissible, and "they may
28 be supported if there is an inherent, albeit not precisely known, upper limit and the

1 specification enables one of skill in the art to approach that limit. Andersen Corp. v. Fiber
2 Composites, LLC, 474 F.3d 1361, 1376–77 (Fed. Cir. 2007). Plaintiffs assert that the
3 evidence in the record shows that at the time of the invention a person of ordinary skill in
4 the art would understand that the phrase “greater than 4 fold increase” had an inherent
5 upper limit of about 25. (Doc. No. 113 at 13-15 (citing Doc. No. 97-3, Swager CC Decl.
6 ¶ 50).) But the problem with Plaintiffs’ argument is that Plaintiffs have failed to provide
7 the Court with any authority holding that the inherent upper limit of an open-ended claim
8 term must be limited to what was known in the art at the time of the invention and would
9 not include changes to that upper limit in the future. In the absence of such authority, the
10 Court declines to adopt Plaintiffs’ proposed inherent upper limit of about 25. In addition,
11 the Court notes that Plaintiffs’ evidence does not actually support its proposal of an upper
12 limit of “about 25.” The prior art reference, which Plaintiffs primarily rely on, refers to an
13 increase of “>25 times more intense than that obtained by direct . . . excitation.” (Doc. No.
14 113-6, Ex. 16 at 437.) Thus, the prior art reference discloses an increase of greater than 25
15 fold, not an increase of about 25 fold.

16 With respect to the phrase “in the absence of the polymer,” the parties dispute
17 whether the phrase “in the absence of the polymer” requires that the polymer is not
18 physically present in order for the comparison to be made. The parties’ dispute can be
19 resolved by an examination of the claim language. Claim 1 of the ’799 patent requires that
20 the 4 fold increase in fluorescence emission that occurs when the polymer transfers energy
21 to the signaling chromophore is compared to what is achieved “by direct excitation of the
22 signaling chromophore in the absence of the polymer.” ’799 Patent at 21:56-62. The word
23 “absence” generally means “failure to be present – opposed to presence.” WEBSTER’S
24 THIRD NEW INTERNATIONAL DICTIONARY 6 (1981); see Phillips, 415 F.3d at 1314
25 (explaining that “general purpose dictionaries” can be helpful in understanding the “the
26 widely accepted meaning of commonly understood words”); id. at 1324 (“[A] judge who
27 encounters a claim term while reading a patent might consult a general purpose or
28 specialized dictionary to begin to understand the meaning of the term, before reviewing the

remainder of the patent to determine how the patentee has used the term.”). Thus, the plain language of the claims in the ’799 patent supports Defendants’ proposed construction.

Defendants’ proposed construction is further supported by the specification. The ’799 patent’s specification similarly states: “Integrated fluorescence emission at this ratio was~ 4 fold greater than that of the directly excited (480 nm) probe in the absence of polymer 1.”⁶ ’799 Patent at 18:15-18; see also id. at 19:1-3. Accordingly, both the claim language and the specification of the ’799 patent support Defendants’ proposed construction with respect to the phrase “in absence of the polymer.”

In sum, the Court adopts Defendants’ proposed construction for this claim term, and the Court rejects Plaintiffs’ proposed construction for this claim term. The Court construes the term “the polymer can transfer energy from its excited state to the signaling chromophore to provide a greater than 4 fold increase in fluorescence emission from the signaling chromophore than can be achieved by direct excitation of the signaling chromophore in the absence of the polymer” as “the polymer can transfer energy from its excited state to the signaling chromophore to provide an increase in fluorescence emission from the signaling chromophore of more than 4 fold than can be achieved by direct excitation of the signaling chromophore without the polymer present.”⁷

v. “polymer”

Plaintiffs propose that the term “polymer” be construed as “a chemical compound made up of many repeated subunits.” (Doc. No. 113 at 15.) Defendants propose that the

⁶ Plaintiffs argue that the specification provides an example where the where the emission quantity was measured with the polymer still present in the solution. (Doc. No. 113 at 12 (citing ’799 Patent at 18:63-19:1).) Plaintiffs are incorrect. In the cited passage, the specification goes on to state in the next sentence that: “Direct excitation of the signaling Oligo-C* (480 nm), in the absence of polymer 1, only provided an approximate 4 fold sensitization of the intercalated EB.” ’799 Patent at 19:1-3. Thus, in this example, the relevant measurement was also made in absence of the polymer.

⁷ The Court slightly alters Defendants’ proposed construction to delete the phrase “no upper limit.” Further, the Court notes that at this time the Court is merely construing the disputed claim terms from the ’799 patent as is proper at the Markman stage of an action for patent infringement. The Court’s decision at claim construction should in no way be interpreted as resolving any potential disputes the parties may have regarding enablement or written description issues.

1 term be construed as “a molecule with two or more monomeric repeat units.” (Doc. No.
2 111 at 14.) Here, the parties dispute whether the claimed “polymer” can include as few as
3 two repeat units. Because the parties dispute the scope of this claim term, the Court must
4 resolve the parties’ dispute. See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318.

5 The Court begin its analysis of the parties’ dispute by examining the claim language.
6 A review of the claim language does not resolve the parties’ dispute. For example, claim
7 1 of the ’799 patent claims a method that utilizes, among other components, “a water-
8 soluble conjugated polymer.” ’799 Patent at 21:55. The claim language does not describe
9 the size of the polymer.

10 A review of the specification resolves the parties’ dispute. The specification of the
11 ’799 patent provides in describing a preferred embodiment:

12 The particular size of this polymer is not critical, so long as it is able to absorb
13 light and transfer energy to signaling chromophores brought into proximity.
14 Typical values of “n” fall within the range of two to about 100,000.

15 ’799 Patent at 11:61-65. Here, the specification describes a preferred embodiment where
16 the polymer may include as few as two repeat units. Defendants’ proposed construction
17 includes this preferred embodiment; Plaintiffs’ proposed construction excludes this
18 preferred embodiment. “[A] construction which excludes [a] preferred embodiment is
19 ‘rarely, if ever correct.’” PPC Broadband, Inc. v. Corning Optical Commc’ns RF, LLC,
20 815 F.3d 747, 755 (Fed. Cir. 2016); accord Adams Respiratory Therapeutics, 616 F.3d at
21 1290.

22 In support of its proposed construction, Plaintiffs attempt to rely on extrinsic
23 evidence, specifically the definition of “polymer” provided in an Organic Chemistry
24 textbook. (Doc. No. 113 at 15 (citing Doc. No. 113-7, Ex. 17).) But “[e]xtrinsic evidence
25 may not be used ‘to contradict claim meaning that is unambiguous in light of the intrinsic
26 evidence.’” Summit 6, 802 F.3d at 1290; see Bell Atl. Network, 262 F.3d at 1269. The
27 specification of the ’799 patent discloses that the polymer can include as few as two repeat
28 units. See ’799 Patent at 11:61-65. Plaintiffs may not attempt to rely on extrinsic evidence

1 to contradict this disclosure in the specification.

2 In sum, the Court adopts Defendants' proposed construction for this term, and the
3 Court rejects Plaintiffs' proposed construction. The Court construes the term "polymer"
4 as "a molecule with two or more monomeric repeat units."

5 B. The '673 Patent and the '113 Patent

6 The '673 patent is entitled "Aggregation Sensor and Solutions and Kits Comprising
7 the Same," and '113 patent is entitled "Methods and Compositions for Assaying a Sample
8 for an Aggregant." U.S. Patent No. 8,110,673, at (54) (filed Feb. 7, 2012); U.S. Patent No.
9 8,835,113, at (54) (filed Sept. 16, 2014). The '673 Patent and the '113 Patent share a
10 common specification, and the inventions disclosed in the two patents are both related to
11 "aggregation sensor useful for the detection and analysis of aggregants in a sample, and
12 methods, articles and compositions relating to such a sensor." '673 Patent at 1:26-28; '113
13 Patent at 1:32-34.

14 In explaining the background of the invention, the specification for the '673 patent
15 provides:

16 Methods for the detection of biomolecules such as nucleic acids are highly
17 significant not only in identifying specific targets, but also in understanding
18 their basic function. . . .

19 Conjugated polymers have proven useful as light gathering molecules in a
20 variety of settings. Conjugated polymers soluble in polar media have proven
21 particularly useful. Water-soluble conjugated polymers such as cationic
22 conjugated polymers (CCPs) have been used in bioassays to improve
23 detection sensitivity and provide new routes of selectivity in analyzing
24 biomolecules.

25 There is a continuing need in the art for methods of detecting and analyzing
26 particular biomolecules in a sample, and for compositions and articles of
27 manufacture useful in such methods. There is a need in the art for novel CCPs,
28 for methods of making and using them, and for compositions and articles of
manufacture comprising such compounds.

'673 Patent at 1:39-61.

1 Claim 1 of the '673 patent claims:

2 1. An aggregation sensor soluble in a polar medium comprising:

3 (a) a conjugated polymer comprising

4 a plurality of first optically active units forming a conjugated
5 system, having a first absorption wavelength at which the first
6 optically active units absorbs light to form an excited state, and

7 a plurality of solubilizing functionalities; and

8 (b) one or more second optically active units that can receive energy
9 from the excited state of the first optically active unit;

10 said aggregation sensor comprising at least three first optically active
11 units per second optically active unit;

12 wherein the second optically active unit is grafted to the conjugated
13 polymer.

14 '673 Patent at 37:46-60.

15 Claim 1 of the '113 patent claims:

16 1. A method of assaying a sample for an aggregant, the method comprising:

17 (a) combining the sample with an aggregation sensor comprising

18 (i) a polymer comprising a plurality of first optically active units
19 forming a conjugated system, having a first absorption
20 wavelength at which the first optically active units absorb light
21 to form an excited state that can emit light of a first emission
22 wavelength, and a plurality of solubilizing functionalities; and

23 (ii) one or more second optically active units that can receive
24 energy from the excited state of the first optically active unit;

25 wherein said aggregation sensor comprises at least three first
26 optically active units per second optically active unit and the
27 second optically active unit is grafted to the conjugated system;

28 (b) contacting the sample with light of the first absorption wavelength;

1 and

2 (c) detecting the optical properties of the aggregation sensor to assay
3 the sample for the aggregant.

4 '113 Patent at 37:36-57.

5 i. “aggregation sensor”

6 Plaintiffs propose that the term “aggregation sensor” be construed as “a sensor that
7 has the structural features described in the remainder of the claims.” (Doc. No. 113 at 17.)
8 Defendants propose that this term be construed as “a sensor for detecting a relative increase
9 in the concentration of the second optically active subunit(s) in a particular volume that
10 increases the ability to transfer energy from an excited first optically active unit(s) to a
11 second optically active unit.” (Doc. No. 111 at 16.) Here, the parties dispute whether the
12 term “aggregation sensor” is a limitation. Because the parties dispute the scope of this
13 claim term, the Court must resolve the parties’ dispute. See O2 Micro, 521 F.3d at 1361;
14 Eon, 815 F.3d at 1318.

15 The claim term “aggregation sensor” is contained within the preamble of
16 independent claim 1 of the '673 patent and independent claim 1 of the '113 patent. '673
17 Patent at 37:45; '113 Patent at 37:38. The Federal Circuit has explained that “[g]enerally,
18 the preamble does not limit the claims.” Georgetown Rail Equip. Co. v. Holland L.P., 867
19 F.3d 1229, 1236 (Fed. Cir. 2017) (quoting Allen Eng’g Corp. v. Bartell Indus., Inc., 299
20 F.3d 1336, 1346 (Fed. Cir. 2002)). “However, a preamble may be limiting if: ‘it recites
21 essential structure or steps’; claims ‘depend[] on a particular disputed preamble phrase for
22 antecedent basis’; the preamble ‘is essential to understand limitations or terms in the claim
23 body’; the preamble ‘recit[es] additional structure or steps underscored as important by the
24 specification’; or there was ‘clear reliance on the preamble during prosecution to
25 distinguish the claimed invention from the prior art.’” Id. (quoting Catalina Mktg. Int’l,
26 Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002)). “The reverse is also
27 true. A preamble is not a claim limitation if the claim body ‘defines a structurally complete
28

1 invention . . . and uses the preamble only to state a purpose or intended use for the
2 invention.” Id. (quoting Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997)). “Whether
3 to treat a preamble as a limitation is a determination resolved only on review of the entire
4 . . . patent to gain an understanding of what the inventors actually invented and intended to
5 encompass by the claim.” Id. (quoting Catalina Mktg., 289 F.3d at 808).

6 Here, even assuming the term “aggregation sensor” is contained within the preamble
7 of independent claim 1 of the ’673 patent and independent claim 1 of the ’113 patent,⁸ the
8 term “aggregation sensor” is a claim limitation under Federal Circuit precedent for two
9 reasons. First, the bodies of the two claims depend on the term “aggregation sensor” for
10 antecedent basis. Both independent claim 1 of the ’673 patent and independent claim 1 of
11 the ’113 patent claim in the body of their claim language: “[wherein] said aggregation
12 sensor compris[es] at least three first optically active units” ’673 Patent at 37:57-58;
13 ’113 Patent at 37:49-50. Because the claims depend on the term “aggregation sensor” for
14 antecedent basis, the term “aggregation sensor” should be construed as a limitation. See
15 Georgetown Rail, 867 F.3d at 1236; Catalina Mktg., 289 F.3d at 808.

16 Second, the term “aggregation sensor” is essential to understanding the limitations
17 in the claim body and is underscored as important by the specification. The specification
18 for the ’673 patent provides: “This invention relates to an aggregation sensor useful for the
19 detection and analysis of aggregants in a sample, and methods, articles and compositions
20 relating to such a sensor.” ’673 Patent at 1:26-28; accord ’113 Patent at 1:32-34. Here,
21 the specification explains that the invention itself is an “aggregation sensor.” Statements
22 in the specification describing the invention as a whole limit the scope of the invention.
23 See Pacing Techs., 778 F.3d at 1025; Luminara Worldwide, 814 F.3d at 1353; Regents of
24 Univ. of Minnesota, 717 F.3d at 936. Further, the specification provides an express
25 definition for the term “aggregation.” The specification provides:

26 Definitions

27
28 ⁸ The Court notes that the term “aggregation sensor” actually appears to be in the body of claim 1
of the ’113 patent. See ’113 Patent at 37:38-39.

1
2 In describing the present invention, the following terms will be employed, and
3 are intended to be defined as indicated below.

4 The term “aggregation” and the like refer to a relative increase in the
5 concentration of the second optically active subunit(s) of an aggregation
6 sensor within a particular volume, which may be a localized region of a larger
7 volume. The term encompasses any form of accumulation, compaction,
8 condensing, etc., that increases the ability to transfer energy from an excited
9 first optically active unit(s) to a second optically active unit, including without
10 limitation alteration(s) of the conformation of a single aggregation sensor, the
11 bringing together of different aggregation sensors, or both.

12 ‘673 Patent at 4:48-61; accord ‘113 Patent at 4:48-61. “When a patentee explicitly defines
13 a claim term in the patent specification, the patentee’s definition controls.” Martek
14 Biosciences Corp. v. Nutrinova, Inc., 579 F.3d 1363, 1380 (Fed. Cir. 2009); see Phillips,
15 415 F.3d at 1321 (“[T]he specification ‘acts as a dictionary when it expressly defines terms
16 used in the claims’”). Thus, the specifications of the ‘673 patent and the ‘113 patent
17 not only underscore how the term “aggregation sensor” is central to the invention, the
18 specifications also provide an explicit definition for the term “aggregation.” Thus, the
19 specification also strongly supports the conclusion that the term “aggregation sensor” is a
20 limitation.⁹ See Georgetown Rail, 867 F.3d at 1236; Catalina Mktg., 289 F.3d at 808.

21 Plaintiffs argued at the claim construction hearing that if the Court determines that
22 the term “aggregation sensor” is indeed a limitation, then the term should be given the
23 meaning for the term set forth in the ‘673 patent’s specification, rather than the meaning
24 proposed by Defendants. The Court agrees with Plaintiffs. The specification of the ‘673
25 patent provides: “The Aggregation Sensor. An aggregation sensor is provided that allows
26 for the detection and analysis of an aggregant.” ‘673 Patent at 10:8-10; id. at 1:26-28
27 (“This invention relates to an aggregation sensor useful for the detection and analysis of
28

⁹ Indeed, it would be strange for the patentee to provide such a detailed definition for the term
“aggregation” in the specification, but then have the term carry no meaning within the claims themselves.

1 aggregants in a sample.”). The Court adopts this description of the term “aggregation
2 sensor” for its construction of the term “aggregation sensor.” Nevertheless, the Court also
3 agrees with Defendants that the Court should also construe the term “aggregation” by itself
4 and give the term “aggregation” the meaning set forth in the express definition for the term
5 provided in the specification. ’673 Patent at 4:48-61; ’113 Patent at 4:48-61; see Martek
6 Biosciences., 579 F.3d at 1380.

7 In sum, the Court rejects Plaintiffs’ proposed construction for this term, and the
8 Court adopts in part Defendants’ proposed construction. The Court construes the term
9 “aggregation sensor” as “a sensor for the detection and analysis of an aggregant.” In
10 addition, the Court construes the term “aggregation” as “a relative increase in the
11 concentration of the second optically active subunit(s) of an aggregation sensor within a
12 particular volume, which may be a localized region of a larger volume. The term
13 encompasses any form of accumulation, compaction, condensing, etc., that increases the
14 ability to transfer energy from an excited first optically active unit(s) to a second optically
15 active unit, including without limitation alteration(s) of the conformation of a single
16 aggregation sensor, the bringing together of different aggregation sensors, or both.”

17 ii. “the second optically active unit is grafted to the conjugated polymer”

18 Plaintiffs propose that the term “the second optically active unit is grafted to the
19 conjugated polymer” be construed as “the second optically active unit is attached to the
20 polymer, but is not a part of the polymer chain.” (Doc. No. 113 at 19.) Defendants propose
21 that the term “second optically active unit” be construed as “repeat units in a polymer chain
22 that can receive energy from the excited state of the first optically active unit.” (Doc. No.
23 111 at 19.) Defendants also propose that the term “grafted to” be construed as “the second
24 optically active unit is covalently attached as a polymeric side chain to a polymeric
25 backbone.” (Id.)

26 The parties’ dispute regarding the proper construction of this claim term is two-part.
27 First, the parties dispute the proper scope of the phrase “second optically active unit.”
28 Second, the parties dispute the proper scope of the phrase “grafted to.” Because the parties

1 dispute the scope of this claim term, the Court must resolve the parties' dispute. See O2
2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318. The Court addresses each of the parties'
3 two disputes in turn below.

4 With respect to the phrase "second optically active unit," the parties dispute whether
5 the "second optically active unit" must be repeat units in a polymer chain. The Court
6 begins its analysis of the parties' dispute by examining the claim language. Claim 1 of the
7 '673 patent provides that the "second optically active unit" is capable of receiving energy
8 from the excited state of the first optically active unit and that the "second optically active
9 unit" is grafted to the conjugated polymer. '673 Patent at 37:54-56, 37:59-60. The claim
10 language does not state that the "second optically active unit" must be repeat units in a
11 polymer chain. Accordingly, a review of the claim language does not resolve the parties'
12 dispute.

13 Defendants' proposed construction is supported by the specification. The
14 specification of the '673 patent states: "Water-soluble conjugated polymers are of
15 particular interest for this purpose because their molecular structure allows for collective
16 response and, therefore, optical amplification of fluorescent signals. The large number of
17 optically active units along the polymer chain increases the probability of light absorption,
18 relative to small molecule counterparts." '673 Patent at 2:33-39 (footnotes omitted); see
19 also id. at 2:50-54. Here, the specification describes the optically active units as being
20 units along a polymer chain. Defendants have also provided the Court with extrinsic
21 evidence showing that their proposed construction is also consistent with the plain meaning
22 of the term "unit" in polymer chemistry. (Doc. No. 97-4, Burgess CC Decl. ¶¶ 60-61, Ex.
23 B.)

24 Plaintiffs argue that the Court should decline to adopt Defendants' proposed
25 construction because the specification describes a preferred embodiment where the
26 "second optically active unit" is a fluorophore, not a polymer. The Court disagrees.
27 Plaintiffs rely on the following passage from the '673 patent's specification: "In some
28 embodiments the polymer can amplify the signal from a fluorophore to which it can

1 transfer energy upon excitation.” ’673 Patent at 12:45-47. But, here, the specification is
2 not referring to a fluorophore as a “second optically active unit.” Elsewhere in the
3 specification, the specification explains that the “second optically active unit” may transfer
4 energy to a fluorophore, and refers to the fluorophore as an optically active molecule, not an
5 optically active unit. See id. at 3:4-7 (“The second optically active units . . . may be used
6 to transfer energy to a subsequent fluorophore, series of fluorophores, or quencher.”); 3:18-
7 20 (“Those second optically active units may transfer energy to a subsequent optically
8 active molecule, which is exemplified as a fluorophore, but can be a quencher.”). Thus,
9 Plaintiffs’ cited portion of the specification when combined with these other passages
10 actually supports Defendants’ proposed construction, not Plaintiffs’ proposal. In these
11 passages, the specification explains that in some embodiments, the second optically active
12 units, the polymer, may transfer energy to a subsequent optically active molecule, a
13 fluorophore. Indeed, this specific embodiment is claimed in the ’673 patent. Claim 6 of
14 the ’673 patent claims: “The aggregation sensor of claim 1, wherein the one or more second
15 optically active units are used to transfer energy to a subsequent fluorophore, series of
16 fluorophores, or quencher.”¹⁰ Id. at 38:51-54; see also ’113 Patent at 38:45-47.
17 Accordingly, the Court adopts Defendants’ contention that the claimed “second optically
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19 ¹⁰ At the claim construction hearing, Plaintiffs cited to two additional passages contained within the
20 ’673 patent’s specification in an attempt to support their claim construction position. First, Plaintiffs cited
21 to the following passage: “Desirably, the polymer is of a length and comprises a sufficient amount of
22 repeat units contributing a first absorption wavelength so that upon excitation it transmits sufficient energy
23 to a second or subsequent optically active species (for example another repeat unit contributing a lower
24 energy absorption or a fluorophore)” ’673 Patent at 12:45-52. But this portion of the specification
25 actually supports Defendants’ proposed construction, not Plaintiffs’ proposal. Here, the specification
26 expressly distinguishes a “unit” from “a fluorophore.” Id. at 12:51-52.

27 Second, Plaintiffs cited to the following passage: “For use in an aggregation sensor, a second
28 optically active species having or contributing an even lower bandgap absorption is used to receive energy
from such a first optically active species, and may be a repeat unit contributing a lower energy absorption
to the polymer.” ’673 Patent at 11:55-59. This passage does not help Plaintiffs. Here, the specification
refers to an “optically active species” and states that the “second optically active species” “may be a repeat
unit.” But the actual claims at issue use the term “second optically active unit,” not “second optically
active species.” See, e.g., id. at 37:59.

1 active unit[s]” are unit(s) in a polymer chain.¹¹

2 Turning to the parties’ dispute over the phrase “grafted to,” the Court notes that a
3 review of the intrinsic record does not resolve the parties’ dispute. The claim language
4 does not explain what is meant by the term “grafted to,” see ’673 patent at 37:59-60, and
5 the phrase “grafted to” does not appear anywhere in the specification. See generally id. at
6 1:26-35:32. In support of their proposed constructions, the parties rely on competing expert
7 testimony and competing dictionary definitions. (Doc. No. 113 at 19-20 (citing Doc. No.
8 97-3, Swager CC Decl. ¶¶ 76, 80; Doc. No. 113-7, Ex. 18); Doc. No. 111 at 20-21 (citing
9 Doc. No. 97-4, Burgess CC Decl. ¶¶ 65-66, Ex. C).) The Court agrees with Plaintiffs that
10 Defendants’ proposed construction is unduly restrictive. Accordingly, the Court adopts
11 Plaintiffs’ contention that “grafted to” means “attached to.”

12 In sum, the Court adopts in part Plaintiffs’ proposed construction for these terms,
13 and the Court adopts in part Defendants’ proposed construction as modified for these terms.
14 The Court construes the term “second optically active unit” as “unit(s) in a polymer chain
15 that can receive energy from the excited state of the first optically active unit.” In addition,
16 the Court construes the term “grafted to” as “attached to.”

17 iii. “the [conjugated] polymer comprises a sufficient amount of repeat units
18 to provide a [two/three/four/five]-fold or greater increase in emission from an
19 optically active species to which it can transfer energy”

20 Plaintiffs propose that the term “the [conjugated] polymer comprises a sufficient
21 amount of repeat units to provide a [two/three/four/five]-fold or greater increase in
22 emission from an optically active species to which it can transfer energy” be construed as
23

24 ¹¹ The Court agrees with Plaintiffs that Defendants’ proposed construction should be modified to
25 remove the phrase “repeat units.” Such a modification is proper under the doctrine of claim differentiation
26 because dependent claim 23 of the ’113 patent claims: “The method of claim 1, wherein the aggregation
27 sensor contains one second optically active unit.” ’113 Patent at 40:10-11. Accordingly, the Court
28 removes the phrase “repeat units,” and replaces it with the word “unit(s).” See Eli Lilly & Co. v. Teva
Parenteral Medicines, Inc., 845 F.3d 1357, 1371 (Fed. Cir. 2017) (“The doctrine of claim differentiation .
... presumes that dependent claims are ‘of narrower scope than the independent claims from which they
depend.’”).

1 “the ratio of (a) the observed fluorescence intensity from a signaling chromophore (such
2 as the second optically active unit) when the repeat units in the polymer are directly excited;
3 to (b) the observed fluorescence intensity from the signaling chromophore when the
4 signaling chromophore in the system is directly excited. This ratio is from 2 to an inherent
5 limit of about 25.” (Doc. No. 113 at 20.) Defendants propose that this claim term be
6 construed as “the (conjugated) polymer comprises a sufficient amount of repeat units to
7 provide an increase in emission that is two-fold, three-fold, four-fold, five-fold, or more
8 with no upper limit, from an optically active species to which it can transfer energy, than
9 can be achieved by direct excitation of the second optically active unit(s) without the
10 polymer present.” (Doc. No. 111 at 22.)

11 The Court notes that the parties’ dispute over this claim term is similar to their
12 dispute over the term: “the polymer can transfer energy from its excited state to the
13 signaling chromophore to provide a greater than 4 fold increase in fluorescence emission
14 from the signaling chromophore than can be achieved by direct excitation of the signaling
15 chromophore in the absence of the polymer” contained in the ’799 patent. As with that
16 term, the parties’ dispute regarding the proper construction of this claim term is two-part.
17 First, the parties dispute the proper scope of the phrase “[two/three/four/five]-fold or
18 greater increase.” Second, the parties dispute whether this claim term requires that the
19 relevant measurement must be made without the polymer physically present. Because the
20 parties dispute the scope of this claim term, the Court must resolve the parties’ dispute.
21 See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318. The Court addresses each of the
22 two disputes in turn below.

23 With respect to the phrase “[two/three/four/five]-fold or greater increase,” the parties
24 dispute whether this phrase contains an upper limit. Plaintiffs assert that the phrase has an
25 inherent upper limit of about 25. (Doc. No. 113 at 20-21.) In contrast, Defendants assert
26 that the phrase has no upper limit. (Doc. No. 111 at 22.) In support of their respective
27 positions, both parties rely on the arguments they made in support of their proposed
28 constructions for the similar term in the ’799 patent. (Doc. No. 113 at 20-21; Doc. No. 111

1 at 22-23.) Following the Court’s reasoning with respect to the ’799 patent, the Court
2 accepts Defendants’ contentions regarding the phrase “[two/three/four/five]-fold or greater
3 increase,” and the Court rejects Plaintiffs’ contentions.

4 The claim language states that the polymer comprises a sufficient amount of repeat
5 units to provide a “[two/three/four/five]-fold or greater increase” in fluorescence emission.
6 ’673 Patent at 37:61-65; ’113 Patent at 37:62-38:44. The claim language places no upper
7 limit on the increase in fluorescence emission. Accordingly, the claim language supports
8 Defendants’ proposed construction, not Plaintiffs’ proposal.

9 Further, in support of their assertion that the phrase “greater than 4 fold increase”
10 has an inherent upper limit of about 25, Plaintiffs rely on Federal Circuit case law holding
11 that open-ended claims have inherent upper limits and evidence purportedly showing that
12 at the time of the invention a PHOSITA would understand that the phrase
13 “[two/three/four/five]-fold or greater increase” would have had an inherent upper limit of
14 about 25. (Doc. No. 113 at 20-21.) But the problem with Plaintiffs’ argument is that
15 Plaintiffs have failed to provide the Court with any authority holding that the inherent upper
16 limit of an open-ended claim term must be limited to what was known in the art at the time
17 of the invention and would not include changes to that upper limit in the future. In the
18 absence of such authority, the Court declines to adopt Plaintiffs’ proposed inherent upper
19 limit of about 25. In addition, Plaintiffs’ proffered evidence does not actually support
20 Plaintiffs’ contention that there should be an upper of limit of about 25. (See Doc. No.
21 113-6, Ex. 16 at 437.)

22 Turning to the issue of whether the measurement must be made without the polymer
23 present, the Court notes that unlike with the ’799 patent, the relevant claims of the ’673
24 patent and the ’113 patent do not include any language stating that the measurement is
25 made in absence of the polymer. See ’673 Patent at 37:61-65; ’113 Patent at 37:62-38:44.
26 Thus, the claim language of the ’673 patent and the ’113 patent does not support this
27 portion of Defendants’ proposed construction. In support of their contention that the
28 Court’s construction for this term should still require that the measurement is made without

1 the polymer present, Defendants cite to the following passage in the specification:

2 Desirably, the polymer is of a length and comprises a sufficient amount of
3 repeat units contributing a first absorption wavelength so that upon excitation
4 it transmits sufficient energy to a second or subsequent optically active species
5 (for example another repeat unit contributing a lower energy absorption or a
6 fluorophore) so as to achieve a 50% or greater increase in light emission from
7 the fluorophore than can be achieved by direct excitation of the fluorophore
8 in the absence of polymer. . . . The polymer can desirably be of a length and
comprise a sufficient amount of a repeat units of interest to provide a two-
fold, three-fold, four-fold, five-fold, or greater increase in emission from an
optically active species to which it can transfer energy.

9 '673 Patent at 12:47-67. But, here, the specification is describing preferred embodiments.
10 See id. at 12:45 (“In some embodiments . . .”). “[I]t is improper to read limitations from
11 a preferred embodiment described in the specification—even if it is the only
12 embodiment—into the claims absent a clear indication in the intrinsic record that the
13 patentee intended the claims to be so limited.” Dealertrack, 674 F.3d at 1327. Here, there
14 is no such clear indication that the patentee intended the claims to limited in manner
15 proposed by Defendants. Accordingly, the Court declines to adopt the portion of
16 Defendants’ proposed construction requiring that the measurement be made without the
17 polymer present.

18 In sum, the Court adopts Defendants’ proposed construction for this term in part,
19 and the Court rejects Plaintiffs’ proposed construction. The Court construes the term “the
20 [conjugated] polymer comprises a sufficient amount of repeat units to provide a
21 [two/three/four/five]-fold or greater increase in emission from an optically active species
22 to which it can transfer energy” be construed as “the (conjugated) polymer comprises a
23 sufficient amount of repeat units to provide an increase in emission that is two-fold, three-
24 fold, four-fold, five-fold, or more from an optically active species to which it can transfer
25 energy.”

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1 iv. “plurality of solubilizing functionalities”

2 Plaintiffs propose that the term “plurality of solubilizing functionalities” be
3 construed as “chemical functional groups that, taken together, render the polymer soluble
4 in a polar medium.” (Doc. No. 113 at 21.) Defendants propose that this term be construed
5 at “two or more chemical functional groups that increase polymer solubility in polar
6 media.” (Doc. No. 111 at 23.) Here, the parties dispute whether the claimed “plurality of
7 solubilizing functionalities” renders the polymer soluble in a polar medium or simply
8 increases the polymer’s solubility. Because the parties dispute the scope of this claim term,
9 the Court must resolve the parties’ dispute. See O2 Micro, 521 F.3d at 1361; Eon, 815
10 F.3d at 1318.

11 Both parties rely on the specification of the ’673 patent to support their position.
12 The specification provides: “The [conjugated polymer] contains a sufficient density of
13 solubilizing functionalities to render the overall polymer soluble in a polar medium.” ’673
14 Patent at 13:42-44. The specification further provides: “The [conjugated polymer]s
15 comprise polar groups as solubilizing functionalities linked to polymer subunits to increase
16 polymer solubility in polar media.” Id. at 13:63-66. Plaintiffs argue that the first passage
17 supports their proposed construction, (Doc. No. 113 at 21), while Defendants argue that
18 the second supports their proposed construction. (Doc. No. 111 at 23.) Plaintiffs argue
19 that the Court should adopt Plaintiffs’ proposed construction because it is based on the
20 specification’s initial description of the solubilizing functionalities, rather than a later
21 statement that simply provides further detail as to the solubilizing functionalities. (Doc.
22 No. 123 at 9.) The Court agrees with Plaintiffs.

23 As a result, the Court adopts Plaintiffs’ proposed construction for this term, and the
24 Court rejects Defendants’ proposed construction. The Court construes the term “plurality
25 of solubilizing functionalities” as “chemical functional groups that, taken together, render
26 the polymer soluble in a polar medium.”

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1 v. “polymer”

2 Plaintiffs propose that the term “polymer” be construed as “a molecule with many
3 monomeric repeat units.” (Doc. No. 113 at 22.) Defendants propose that this term be
4 construed as “a molecule with two or more monomeric repeat units.” (Doc. No. 111 at 23.)
5 Here, the parties again dispute whether the term “polymer” can include as few as two repeat
6 units. Because the parties dispute the scope of this claim term, the Court must resolve the
7 parties’ dispute. See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318.

8 The Court begins its analysis of the parties’ dispute by examining the claim
9 language. A review of the claim language does not resolve the parties’ dispute. For
10 example, claim 1 of the ’673 patent claims “[a]n aggregation sensor” including “a
11 conjugated polymer.” ’673 Patent at 37:46-48. The claim language does not describe the
12 size of the polymer.

13 A review of the specification resolves the parties dispute. The specification of the
14 ’673 patent provides in describing a preferred embodiment:

15 The particular size of the polymer is not critical, so long as it is able to absorb
16 light in the relevant region. In some embodiments, the polymer (which
17 includes oligomers) also desirably is able to transfer energy to a fluorophore.
 . . . An oligomer has at least two repeats of a chromophoric unit

18 ’673 Patent at 13:5-13. Here, the specification describes a preferred embodiment where
19 the polymer may be an oligomer and may include as few as two repeat units. Defendants’
20 proposed construction includes this preferred embodiment; Plaintiffs’ proposed
21 construction excludes this preferred embodiment. “[A] construction which excludes the
22 preferred embodiment is ‘rarely, if ever correct.’” PPC Broadband, 815 F.3d at 755; accord
23 Adams Respiratory Therapeutics, 616 F.3d at 1290.

24 In sum, the Court adopts Defendants’ proposed construction for this term, and the
25 Court rejects Plaintiffs’ proposed construction. The Court construes the term “polymer”
26 as “a molecule with two or more monomeric repeat units.”

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1 vi. “optical properties”

2 Plaintiffs propose that the term “optical properties” be construed as “a property
3 relating to the absorption or emission of light from a system, such as the fluorescence
4 spectrum or fluorescence intensity of a system.” (Doc. No. 113 at 23.) Defendants propose
5 that this term be construed a “one of the effects of a substance or medium on light or other
6 electromagnetic radiation passing through it.” (Doc. No. 111 at 24.) Because the parties
7 dispute the scope of this claim term, the Court must resolve the parties’ dispute. See O2
8 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318.

9 Plaintiffs’ proposed construction is supported by the claim language of the ’113
10 patent. Dependant claim 9 of the ’113 patent claims a method “wherein detecting the
11 optical properties of the aggregation sensor comprises detecting if the aggregation sensor
12 emits decreased light at the first emission wavelength.” ’113 Patent at 38:49-52. Further,
13 dependent claim 10 claims a method wherein “detecting the optical properties of the
14 aggregation sensor comprises detecting light emission at the second emission wavelength.”
15 Id. at 38:57-59. The claim language in these two claims shows that the term “optical
16 properties” is related to the emission of light from the system. Thus, the claim language
17 supports Plaintiffs’ proposed construction, not Defendants’ proposal.

18 In support of their proposed construction, Defendants only rely on extrinsic
19 evidence, specifically dictionary definitions. (Doc. No. 111 at 24 (citing Doc. No. 97-4,
20 Burgess CC Decl. ¶ 73).) Defendants have failed to provide any support in the intrinsic
21 record for their proposed construction. Accordingly, the Court declines to adopt
22 Defendants’ proposed construction for this claim term.

23 In sum, the Court adopts Plaintiffs’ proposed construction for this term, and the
24 Court rejects Defendants’ proposed construction. The Court construes the term “optical
25 properties” as “a property relating to the absorption or emission of light from a system,
26 such as the fluorescence spectrum or fluorescence intensity of a system.”

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1 vii. “aggregant”

2 Plaintiffs propose that the term “aggregant” be construed as “a target biomolecule
3 such as a nucleic acid, a peptide, a protein or a polysaccharide.” (Doc. No. 113 at 24.)
4 Defendants propose that this term be construed as “a material that promotes aggregation.”
5 (Doc. No. 111 at 24.) Because the parties dispute the scope of this claim term, the Court
6 must resolve the parties’ dispute. See O2 Micro, 521 F.3d at 1361; Eon, 815 F.3d at 1318.

7 Both parties rely on passages in the ’673 patent’s specification to support their
8 respective proposed claim constructions. Defendants rely on the following passages in
9 support of their contention that the term “aggregant” is a material that promotes
10 aggregation. The specification of the ’673 patent provides: “In the presence of an
11 aggregant, the sensor becomes aggregated, and energy is transferred to the second optically
12 active units.” ’673 Patent at 3:1-3. The specification further provides: “In principle, the
13 sample can be any material suspected of containing an aggregant capable of causing
14 aggregation of the aggregation sensor.” Id. at 17:61-63. Thus, the specification supports
15 Defendants’ proposed construction that an “aggregant” is a material that promotes or
16 causes aggregation. Defendants have also provided the Court with extrinsic evidence, a
17 dictionary definition, showing that their proposed construction is consistent with the
18 ordinary meaning of the term “aggregant.” (Doc. No. 112-7, McPherson Decl. Ex. G.)

19 In support of their contention that the claimed aggregant is a target biomolecule,
20 Plaintiffs rely on the following passage from the specification: “An aggregant to be
21 assayed may be a target biomolecule (e.g., a polysaccharide, a polynucleotide, a peptide, a
22 protein, etc.).” ’673 Patent at 15:56-58. But, here, the specification uses permissive
23 language in explaining that the aggregant “may be a target biomolecule.” Id. The
24 specification does not instruct that the aggregant must be a target biomolecule.
25 Accordingly, the Court declines to adopt Plaintiffs’ proposed construction for this term.

26 As a result, the Court adopts Defendants’ proposed construction as modified for this
27 term, and the Court rejects Plaintiffs’ proposed construction. The Court construes the term
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1 “aggregant” as “a material capable of causing aggregation.”¹²

2 viii. “second solvent”

3 Plaintiffs propose that the term “second solvent” be construed as “a liquid other than
4 the solvent of claim 15 that can mix with the solvent of claim 15.” (Doc. No. 113 at 25.)
5 Defendants propose that this term be construed as “a liquid other than the solvent of claim
6 15 that dissolves a substance to form a solution.” (Doc. No. 111 at 25.) Here, the parties
7 dispute whether the claimed “second solvent” must dissolve a substance to form a solution
8 or merely mix with the first solvent of claim 15. Because the parties dispute the scope of
9 this claim term, the Court must resolve the parties’ dispute. See O2 Micro, 521 F.3d at
10 1361; Eon, 815 F.3d at 1318.

11 In support of their proposed construction, Defendants rely on extrinsic evidence,
12 specifically dictionary definitions for the term “solvent.” (Doc. No. 111 at 25 (citing Doc.
13 No. 97-4, Burgess CC Decl. ¶ 76, Exs. J, K).) Defendants argue that their proposed
14 construction is correct because, under those dictionary definitions, the fundamental
15 property of a solvent is that it is capable of dissolving another substance. (Id.) In response,
16 Plaintiffs concede that the fundamental property of a solvent is that it can dissolve another
17 substance. (Doc. No. 123 at 10.) Accordingly, the Court adopts Defendants’ proposed
18 construction. But the Court modifies Defendants’ proposed construction to now include
19 the phrase “capable of dissolving another substance” to better match the definitions
20 provided by Defendants’ in support of their proposed construction. (See Doc. No. 97-4,
21 Burgess CC Decl. ¶ 76; Doc. No. 97-11, Ex. K.)

22 In sum, the Court adopts Defendants’ proposed construction as modified for this
23 term, and the Court rejects Plaintiffs’ proposed construction. The Court construes the term
24 “second solvent” as “a liquid other than the solvent of claim 15 that is capable of dissolving
25 another substance.”

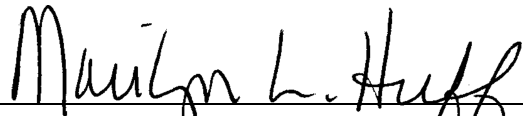
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28 ¹² The Court slightly alters Defendants’ proposed construction to better match the actual language
in the specification.

1 **Conclusion**

2 For the reasons above, the Court adopts the constructions set forth above.

3 **IT IS SO ORDERED.**

4 DATED: March 26, 2018

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6 MARILYN L. HUFF, District Judge
7 UNITED STATES DISTRICT COURT
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