

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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THERMO FISHER SCIENTIFIC INC.,  
Petitioner,

v.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,  
Patent Owner.

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Case IPR2018-01347  
Patent 9,085,799 B2

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Before ERICA A. FRANKLIN, JAMES A. WORTH, and KRISTI L. R.  
SAWERT, *Administrative Patent Judges*.

SAWERT, *Administrative Patent Judge*.

DECISION  
Denying Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

Thermo Fisher Scientific Inc. (“Petitioner”) filed a Petition for an *inter partes* review of claims 1, 3, 4, 6, and 7 of U.S. Patent No. 9,085,799 B2 (“the ’799 patent,” Ex. 1001). Paper 2 (“Pet.”). The Regents of the University of California (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a). We may not institute an *inter partes* review “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Applying those standards, and upon consideration of the information presented in the Petition and the Preliminary Response, we determine that Petitioner has not demonstrated a reasonable likelihood of success in proving that at least one claim of the ’799 patent is unpatentable. Accordingly, we do not institute an *inter partes* review of the challenged claims (1, 3, 4, 6, and 7) of the ’799 patent.

### A. Related Proceedings

Petitioner and Patent Owner identify *The Regents of the University of California v. Affymetrix, Inc.*, Case No. 3:17-cv-01394 (CASD) (“the district court litigation”), as a related matter under 37 C.F.R. § 42.8(b)(2). Pet. 53–54. Patent Owner states that the district court litigation involves the ’799 patent. Paper 5, 1. Petitioner also petitioned for an *inter partes* review of U.S. Patent No. RE46,817 (“the ’817 reissue patent”). Pet. 54. The Board denied institution on December 3, 2018. *See Thermo Fisher Scientific Inc.*

*v. The Regents of the University of California*, Case IPR2018-01156 (PTAB Dec. 3, 2018) (Paper 10). The '799 patent and the '817 reissue patent share the same written description, and claim priority to the same priority documents. Paper 5, 1; Prelim. Resp. 40. Patent Owner identifies the following proceedings as related matters: IPR2018-01367, IPR2018-01368, IPR2018-01369, and IPR2018-01370. Paper 3, 1–2. Those related matters, involving the same parties and related patents, are at the pre-institution phase.

*B. The '799 patent*

The '799 patent relates to a method for detecting and analyzing polynucleotides in a sample, using a FRET (fluorescence resonance energy transfer)-based light-harvesting multichromophore system. Ex. 1001, Abstract. The system is made up of at least two components: “(a) a cationic multichromophore, and (b) a ‘sensor polynucleotide’ (Oligo-C\*) comprising an anionic polynucleotide conjugated to a signaling chromophore.” *Id.* at 4:14–17. The '799 patent states that “the optical amplification provided by a water soluble multichromophore[,] such as a conjugated polymer[,] can be used to detect polynucleotide hybridization to a sensor polynucleotide.” *Id.* at 4:18–21. According to the '799 patent, the system is “useful for any assay in which a sample can be interrogated regarding a target polynucleotide. Typical assays involve determining the presence of a target polynucleotide in the sample or its relative amount.” *Id.* at 4:37–39.

The '799 patent states that light-harvesting multichromophore systems are “efficient light absorbers by virtue of the multiple chromophores they comprise,” and can “efficiently transfer energy to nearby luminescent

species,” called “signaling chromophores.” *Id.* at 10:54–56, 11:1–3. The ’799 patent states that “[t]he multichromophores used in the present invention are polycationic and can interact with a sensor polynucleotide electrostatically.” *Id.* at 11:41–43.

In a preferred embodiment, the multichromophore is a conjugated polymer. *Id.* at 11:55–56. Conjugated polymers are “characterized by a delocalized electronic structure and can be used as highly responsive optical reporters for chemical and biological targets.” *Id.* at 11:20–22. The ’799 patent states that “the backbone” of the conjugated polymer “contains a large number of conjugated segments in close proximity,” and thus, is efficient for FRET. *Id.* at 11:24–28.

The sensor polynucleotide is an anionic polynucleotide complementary to the target polynucleotide to be assayed. *Id.* at 12:47–49. The ’799 patent states that it may be conjugated to a signaling chromophore using any chemical method known in the art. *Id.* at 12:52–54. Signaling chromophores “include any substance which can absorb energy from a polycationic multichromophore in an appropriate solution and emit light,” such as fluorophores. *Id.* at 12:59–62.

The ’799 patent states that “[a]ny instrument that provides a wavelength that can excite the polycationic multichromophore and is shorter than the emission wavelength(s) to be detected can be used for excitation.” *Id.* at 16:24–27. Similarly, the light emitted from the signaling chromophore “can be detected through any suitable device or technique.” *Id.* at 16:34–36. The ’799 patent states that “many suitable approaches are known in the art” for detecting the emitted light.” *Id.* at 16:36–37.

### C. Challenged Claims

Petitioner challenges claims 1, 3, 4, 6, and 7 of the '799 patent.

Pet. 13. Claim 1 is the only independent claim, and provides:

1. A method comprising:

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

i) a signaling chromophore; and

ii) a water-soluble conjugated polymer comprising a delocalized electronic structure, wherein 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;

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

(b) detecting whether light is emitted from the signaling chromophore.

Ex. 1001, 21:50–65.

### D. Asserted Ground of Unpatentability

Petitioner challenges the patentability of claims 1, 3, 4, 6, and 7 of the '799 patent on the following ground:

Claims	Basis	Reference
1, 3, 4, 6, and 7	35 U.S.C. § 102(b)	Bazan <sup>1</sup>

Pet. 13–14. Petitioner also relies on the Declaration of Kirk S. Schanze, Ph.D. (Ex. 1002). *Id.* at 3. Patent Owner disputes that Petitioner's asserted ground presents a proper unpatentability challenge for an *inter partes*

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<sup>1</sup> Guillermo C. Bazan et al., U.S. Patent Application Publication No. US 2004/0142344 A1 (July 22, 2004) ("Bazan," Ex. 1026).

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