

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MICHAEL J. LEVEILLE

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Appeal No. 2000-1862  
Application 08/834,061

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HEARD: March 6, 2002

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Before WARREN, KRATZ and POTEATE, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal*

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 2 through 15 and 34 through 37. Claims 34 through 36 were amended subsequent to the final rejection and allowed by the examiner. Claims 17 through 20, 38 and 39, the other claims pending in the application, have been allowed by the examiner. Thus claims 2 through 15 and 37 remain for consideration on appeal.<sup>1</sup> Claim 37, *exactly as it stands of record*,<sup>2</sup> is illustrative of the claims on appeal:

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<sup>1</sup> We note appellant's explanation of the discrepancy between the claims set forth in the notice of appeal filed April 5, 1999 (Paper 9) and the claims actually on appeal (brief, pages 1-2), and point out that 37 CFR § 1.191 (1997) does not require that the notice identify the rejected claims appealed. Manual of Patent Examining Procedure § 1205(8th ed., August 2001; 1200-3; 7th ed., Rev. 1, Feb. 2000; 1200-3).

37. A calibration medium for an optical instrument, which optical instrument has a spectral light source, said light source capable of emitting light in the far UV range which light travels along a light path and which light comprises at least one wavelength, means for receiving sample within said light path, and a sensor assembly for receiving light and producing a signal, said sensor assembly producing a signal upon receiving light having said wavelength; comprising:

a sol-gel glass monolith, said sol-gel glass monolith capable of assuming a position within said light path, said sol-gel glass monolith having a rare-earth dopant therein said constituents of the sol-gel glass monolith constituents comprising selected so the rare earth-doped sol-gel glass monolith exhibits a transmittance in the far UV range so at least one spectral feature of the rare-earth dopant in the far UV range is discernable and corresponds to a control value to allow the sensor assembly receiving light having a wavelength corresponding to the control value to be calibrated.

The appealed claims, as represented by claim 37, are drawn to a calibration medium for an optical instrument of the type having the components recited in the claim, including a spectral light source capable of emitting light in the “far UV range,” which comprises at least a rare earth-doped sol-gel glass monolith capable of assuming a position within the light path of such an optical instrument, and having constituents comprising at least those selected such that at least one spectral feature of the rare earth dopant in the “far UV range” is discernable and can be used as a control value to calibrate the optical instrument. Appellant characterizes optical instruments having the components recited in the claim as “UV absorbance detectors” (specification, e.g., pages 7 and 28-29).

The references relied on by the examiner are:

X. Orignac et. al. (Orignac) “Fabrication and characterization of sol-gel planar waveguides doped with rare-earth ions,” 69 *Appl. Phys. Lett.*, No. 7, 895-97 (12 August 1996).

W. Xu et al. (Xu) “Effect of curing temperature on green light emission from ER<sup>3+</sup>-doped sol-gel silica glass,” 194 *Journal of Non-crystalline Solids* 235-40 (1996).

The examiner has rejected appealed claims 2 through 15 and under 35 U.S.C. § 102(a) as being anticipated by Orignac.<sup>3</sup> The examiner has also rejected appealed claims 2 through 4, 6,

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<sup>2</sup> Claim 37 was presented in the amendment of September 1, 1998 (Paper No. 4) and has not been amended. Appealed claims 2 through 15, original and as amended, appear on pages 30-32 of the specification. As pointed out by the examiner (answer, page 3), appellant has misnumbered the claims in the appendix to the brief.

<sup>3</sup> The statutory provision cited by the examiner is 35 U.S.C. § 102(e) (1975) which applies where the evidence of anticipation is a United States patent granted on an application filed by another before the claimed invention was made by the applicant, that is, the effective filing date

7, 9 through 15 and 37 under 35 U.S.C. § 102(b) as being anticipated by Xu.

Appellant states in the brief (page 3) that appealed claims 2 through 15 and 37 rejected over Orignac are argued “as a single group with separate arguments being directed to the subject matter of dependent claims 3, 5, 7 and 8,” and that appealed claims 2 through 4, 6, 7, 9 through 15 and 37 rejected over Xu are argued “as a single group with separate arguments directed to the subject matter of dependent claims 3 and 7.” We find separate argument for claims 3, 5 and 7 (brief, pages 5 and 7), but not for claim 8 (brief and reply brief in entirety). Thus, we decide this appeal based on appealed claims 37, 3, 5 and 7. 37 CFR § 1.192(c)(7) (1997).

We affirm.

Rather than reiterate the respective positions advanced by the examiner and appellant, we refer to the examiner’s answer and to appellant’s brief and reply brief for a complete exposition thereof.

#### *Opinion*

In order to consider the examiner’s application of prior art to appealed claims 37, 3, 5 and 7, we must first interpret these claims in light of the written description in appellant’s specification as it would be interpreted by one of ordinary skill in this art, *see In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997) (“[T]he PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.”), without reading into these claims any

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of the application on appeal, and not where the evidence of anticipation is found in a literature reference. A literature reference can be used as evidence of anticipation under 35 U.S.C. § 102(a) (1975) if it is a printed publication by another that has an effective date before the claimed invention was made by the applicant. We are of the opinion that the citation of the wrong provision of § 102 by the examiner is harmless error because appellant’s burden is the same under either § 102(a) or § 102(e), that is, the applicant must either patentably distinguish the claimed invention over the reference or overcome the reference by affidavit or declaration of prior invention under 37 CFR § 1.131 (1996), which reads in pertinent part, “(a)(1) When any claim of an application . . . is rejected under 35 U.S.C. 102(a) or (e) based on a U.S. patent to another or others which is prior art under 35 U.S.C. 102(a) or (e) . . . or on a reference . . . to a

limitation or particular embodiment which is disclosed in the specification. *See In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978). Thus, the terms in the appealed claim must be given their ordinary meaning unless another meaning is intended by appellant as established in the written description of the specification. *See, e.g., Morris, supra; Zletz, supra* (“During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow. When the applicant states the meaning that the claim terms are intended to have, the claims are examined with that meaning, in order to achieve a complete exploration of the applicant’s invention and its relation to the prior art. *See In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (before the application is granted, there is no reason to read into the claim the limitations of the specification.)”).

It is readily apparent from the plain language of appealed claim 37 that the same is directed to a rare earth-doped sol-gel glass monolith *product* that appellant intends “for” use as “[a] calibration medium” for calibration of an optical instrument of the type having the components recited in the preamble of the claim, including a spectral light source capable of emitting light in the “far UV range.” The body of the claim specifies that the rare earth-doped sol-gel glass monolith product must be “*capable of assuming a position within the light path* of such an optical instrument” (emphasis supplied) recited in the preamble of the claim. Such “an optical instrument” is broadly described in the written description of the specification as “[u]ltraviolet (UV) absorbance detectors or detection systems” (e.g., page 1, lines 12-16; page 7, lines 11-16; page 10, lines 7-11) and is not limited to the preferred embodiments disclosed in the specification (e.g., page 14, lines 2-7). Indeed, appellant discloses that

[i]t is within the scope of the instant invention for the above described teachings of the instant invention, including the above described calibration medium, to be used to calibrate any of a number of detectors, detection systems, instruments, [sic] analysis apparatuses. In particular, such detectors, detection systems, instruments, analysis apparatuses that are particularly adapted or configured to sense spectral emissions extending into the far UV range. [Page 28, line 23, to page 29, line 1.]

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printed publication . . . [the applicant] may submit an appropriate oath or declaration to overcome the patent or publication.”

The body of appealed claim 37 further specifies that the rare earth-doped sol-gel glass monolith product may contain “constituents . . . comprising selected” such that it still “exhibits a transmittance in the far UV range so *at least one spectral feature of the rare-earth dopant in the far UV range is discernable and corresponds to a control value to allow* the sensor assembly receiving light having a wavelength corresponding to the control value to be calibrated” in the optical instrument recited in the preamble of the claim (emphasis supplied). Thus, as the claim stands of record, the constituents of the rare earth-doped sol-gel glass monolith product must comprise at least a sol-gel glass doped with a rare earth dopant such that at least one spectral feature of the rare earth dopant in the “far UV range” is discernable and can be used as a control value to calibrate the optical instrument.

The transitional term “comprising” and the further open-ended term “comprising” with respect to the “constituents . . . selected,” opens the claimed product to include any constituent in the sol-gel glass or in the rare-earth dopant which does not interfere with the detection of at least one spectral feature of the rare-earth dopant in the “far UV range” for calibration purposes. *See Exxon Chemical Patents Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995) (“The claimed composition is defined as comprising - meaning containing at least - five specific ingredients.”); *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term ‘comprises’ permits the *inclusion* of other steps, elements, or materials.”).

Thus, the appealed claims encompass any rare earth-doped sol-gel glass monolith products based on different types of sol-gel glass, that contains any amount of a rare-earth dopant which will provide at least one spectral feature in the “far UV range,” and are prepared by any appropriate process (see specification, e.g., page 7, line 20, to page 10, line 6, and page 29, lines 3-6). While the transmittance of the sol-gel glass is not specified in claim 37, the transmittance can range from “about 50% at about 250nm” as specified in appealed claim 7.

The concentration of the rare-earth dopant is also not specified in appealed claim 37. In appealed claim 5, the “concentration . . . is in the range from about 6% to about 10%,” which, as pointed out by the examiner, does not specify the units, e.g., mole % or weight % (answer, pages

6-7). The examiner has analyzed the scope of the rare earth-doped sol-gel glass monolith products encompassed by claim 5 vis-à-vis the teachings of the applied prior art by using both of these units (*id.*). We note in this respect that according to the written description in the specification, the “dopant concentration is adjusted to provide the needed contrast between the far UV spectral feature(s) and the background light . . . for purposes of calibration,” and the range specified in claim 5 is “the quantity of erbium in the calibration medium” in a “particular embodiment” (page 16, lines 11-14). We are of the opinion that, in light of the specification, the examiner’s dual interpretation of claim 5 is a reasonable, conditional interpretation which would avoid piecemeal appellate review as it provides an adequate basis for purposes of resolving prior art issues without unsupported speculative assumptions, and thus, for purposes of this appeal, we adopt the examiner’s interpretation of the “concentration” or “quantity” of the rare-earth dopant in the sol-gel glass monolith product encompassed by appealed claim 5.<sup>4</sup> *Cf. In re Steele*, 305 F.2d 859, 862-63, 134 USPQ 292, 295 (CCPA 1962); *Ex parte Saceman*, 27 USPQ2d 1472, 1474 (Bd. Pat. App. & Int. 1993).

While the rare earth-doped sol-gel glass monolith must have at least one discernable spectral feature in the “far UV range” according to appealed claim 37, it is specified in appealed claim 3 that the product must have “at least one distinct spectral feature in the range of from about 220nm to about 300nm.” Indeed, according to the written description in the specification, the range of possible spectral features can be “a wide range, preferably from about 190nm to about 700nm and more particularly, from about 220nm to about 700nm” (page 8, lines 8-10, and appealed claim 2). It is not clear on this record which part of the emission spectrum appellant intends as the “far UV range” as we do *not* find a definition for this “range” in the written description in the specification, although it would appear to include at least “about 257nm” which is disclosed for erbium as the dopant (e.g., page 4, lines 27; page 8, lines 6-15; page 12, lines 17-22; page 15, line 22, to page 16, line 7; page 16, lines 15-25; page 20, lines 1-3; page 23, lines 4-10). Where we have found a term reflecting the claim term “far UV range” in reference works in the technical literature, there is no consensus definition, only arbitrary definitions that

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<sup>4</sup> However, while we have so considered appealed claim 5, the matter of whether this claim as it stands of record complies with § 112, second paragraph, should be addressed by the examiner

include the ranges “100-200 nm” and “300-200 nm,” with one reference characterizing such spectral ranges as “near-ultraviolet (uv) 200-400 nm,” and it is apparent that “classifications may differ due to the phenomena of interest.”<sup>5</sup>

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upon any further consideration thereof before the examiner subsequent to this appeal.

<sup>5</sup> See, e.g., the following references, copies of which are attached to this decision.

**regions of electromagnetic spectrum (1) (illuminating engineering).** For convenience of reference, the electromagnetic spectrum is arbitrarily divided as follows:

Vacuum ultraviolet  
Extreme ultraviolet 10-100 nm  
Far ultraviolet 100-200 nm  
Middle ultraviolet 200-300 nm  
Near ultraviolet 300-800  
Visible 380-770 nm

. . .

*Note:* The spectral limits indicated above have been chosen as a matter of practical convenience. There is a gradual transition from region to region without sharp delineation. Also, the division of the spectrum is not unique. In various fields of science, the classifications may differ due to the phenomena of interest. Another division of the ultraviolet spectrum often used by photobiologists is given by the International Commission on Illumination (CIE):

UV-A 315 to 400 nm  
UV-B 280 to 315 nm  
UV-C 100 to 280 nm

*The New IEEE Standard Dictionary of Electrical and Electronic Terms*, 1102 (Christopher J. Booth, ed., The Institute of Electrical and Electronics Engineers, Inc., New York. 1993).

**Ultraviolet radiation**

Electromagnetic radiation in the wavelength range 4-400 nanometers. The ultraviolet region begins at the short wavelength (violet) limit of visibility and extends to the wavelength of long x-rays. It is loosely divided into the near (400-300 nm), far (300-200 nm), and extreme (below 200 nm) ultraviolet regions . . . In the extreme ultraviolet, strong absorption of the radiation by air requires the use of evacuated apparatus; hence this region is called the vacuum ultraviolet. . . .

Biological effects of ultraviolet radiation include . . . germicidal action [in the far or 300-200 nm ultraviolet region]. . . .

*McGraw-Hill Encyclopedia of Scientific and Technical Terms*, 7th ed.. page 20 (New York, McGraw-Hill, Inc. 1992).

In this respect, while we find that *The New IEEE Standard Dictionary of Electrical and Electronic Terms* appears to be the closest subject matter to appellant's claimed invention, appears to reflect the disclosure of "Far ultraviolet 100-200 nm" therein is at odds with the disclosure of "a distinguished spectral feature at about 257nm" for erbium dopants, including erbium nitrate (specification, e.g., page 8, lines 12-28; page 16, lines 3-7; page 20, lines 1-3), although we also note the disclosure that the "calibration point deep in the UV, at about 257nm, in the spectral region were [sic, where] a large number of end users operate UV absorbance detectors" (*id.*, page 16, lines 22-26). In order to avoid piecemeal appellate review, we find that, on this record, a reasonable, conditional interpretation of appealed claim 37 based on the specification that is adequate for purposes of resolving prior art issues can be made without unsupported speculative assumptions, and thus, for purposes of this appeal, we interpret the phrase "the far UV range" in appealed claim 37 to include "at least about 257nm."<sup>6</sup> *Cf. Steele, supra; Saceman, supra.*

It would also be readily apparent to one of ordinary skill in this art from the specification that the "at least one spectral feature . . . in the far UV range [that] is discernable," that is, an emission peak or valley (e.g., page 2; page 13, lines 19-20, page 16, lines 6-9, and Fig. 4), can be tailored to the "control value" for calibration of an optical instrument by routine experimentation, or the calibration "control value" for that optical instrument can be set to the "spectral feature" (e.g., pages 4-7; page 10, lines 7-20; page 13, lines 25-26, page 23, lines 11-13, and Fig. 7; page 17, lines 24-27).

Accordingly, we interpret appealed claim 37, and appealed claims 3, 5 and 7 dependent

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"Table 1. Regions of the Electromagnetic Spectrum" summarizes the conventional "energy regions characterized by the different experimental techniques employed and the various nuclear, atomic, and molecular processes that can be studied," which tabular information includes

near ultraviolet (uv) 200-400 nm  
vacuum ultraviolet 10-200 nm

*Kirk-Othmer Encyclopedia of Chemical Technology*, 22, 629-30 (4th ed., New York, John Wiley & Sons, 1996).

<sup>6</sup> While we have so considered appealed claim 37, the matter of whether this claim and claims dependent therein comply with § 112, second paragraph, should be addressed by the examiner upon any further consideration thereof before the examiner subsequent to this appeal.

thereon, to encompass a rare earth-doped sol-gel glass monolith product that is of *any* shape and dimension such that it is *capable* of assuming *any* position *within* the light path of *any* optical instrument which has a spectral light source capable of emitting light in the “far UV range,” for purposes of calibrating that optical instrument by means of a “control value” which corresponds to at least one spectral feature of the rare-earth dopant that is discernable in the “far UV range.”

We have carefully considered our interpretation of appealed claims 37 and 3, 5 and 7 in light of appellant’s arguments. We agree with appellant (reply brief, pages 1-3) that, under the facts of the present case, in view of the claimed invention as a whole, the preamble must be taken with the body of the claim, and thus gives meaning to the claim to the extent that it characterizes the shape and dimension of the claimed rare earth-doped sol-gel monolith product which would permit it to be “*capable* of assuming a position within the light path of such an optical instrument” recited in the preamble of the claim, when used as “[a] calibration medium” for that optical instrument. See *Pitney Bowes Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298,1306, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999) (“The preamble statement that the patent claims a method of or apparatus for ‘producing on a photoreceptor an image of generated shapes made up of spots’ is not merely a statement describing the inventions intended field of use. Instead, that statement is intimately meshed with the ensuing language in the claim.”); *In re Stencel*, 828 F.2d 751, 754-55, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987) (“As a matter of claim draftsmanship, appellant is not barred from describing the driver in terms of the structure imposed upon it by the collar having plastically deformable lobes.”).

However, we cannot agree with the argument that the preamble limits the scope of the claim to rare earth-doped sol-gel monolith products *only* when *in use* as “[a] calibration medium” in “an optical instrument” as specified in appealed claim 37, as such a method or process of use limitation of a claimed product has no place in a product claim. Cf. *In re Wiggins*, 397 F.2d 356, 359 n.4, 158 USPQ 199, 201-02 n.4 (CCPA 1968), and cases cited therein (“[A]ppellant’s discovery of the analgesic properties of ‘O<sub>2</sub>’ and of a composition containing it could properly be claimed only as a method or process of using that compound or composition in accordance with the provisions of 35 U.S.C. 100(b) and 101.”). We do not find that *Pitney Bowes*, *supra*, requires a different result as the claims under consideration there were process claims, not claims to an

article that is “for” or “capable” of use in a particular type of apparatus to perform a method with that apparatus.<sup>7</sup> Cf. *Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 868, 228 USPQ 90, 94 (Fed. Cir. 1985), *overruled on other grounds, Nobelpharma AB v. Implant Innovations*, 141 F.3d 1059, 1068, 46 USPQ2d 1097, 1104 (Fed. Cir. 1998) (The claim language “*adapted* to remain in a liquid, nonpolymerizing state for prolonged periods of time while in contact with air and to polymerize to the solid state in the absence of air and upon contact with metal surfaces . . .” was interpreted by the court “as merely language of intended use, not a claim limitation. [Citation omitted; emphasis supplied.]”); *In re Pearson*, 494 F.2d 1399, 1402-03, 181 USPQ 641, 644 (CCPA 1974) (The claim language “*for* reducing pops and unsound kernels in peanut plants . . . [and] when applied to the foliage of a peanut crop will substantially reduce the formation of pops and unsound kernels” was held by the court to “merely set forth the intended use, or a property inherent in, an otherwise old composition. [Emphasis supplied.]”); *Wiggins*, 397 F.2d at 357-59, 158 USPQ at 200-01 (The independent product claim recited “[a] pharmaceutical preparation in dosage unit form *adapted* for administration to obtain an analgesic effect,” and the court stated that “[w]ere the [reference] to describe or render obvious such a composition, . . . that composition, of course, would not appear to differ in any material manner from the composition of appellant’s claim, no matter to what ultimate use it would be put. [Footnote omitted; emphasis supplied.]”).

In comparing the claimed rare earth-doped sol-gel glass monolith product as encompassed by appealed claims 37, 3, 5 and 7, as we have interpreted these claims above, with the disclosure of Orignac, we find that, as a matter of fact, the examiner has established a *prima facie* case of anticipation under § 102(a) by pointing out where each and every element of the claimed invention, arranged as required by the claim, is described identically in the reference

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<sup>7</sup> Indeed, if the limitation was given effect as limiting the claims to encompassing the described product *only* in the stated use environment of calibrating the specified type of optical instrument, such that the *same* product in another use environment would *not* be encompassed by the appealed claims as appellant argues, then the appealed claims would be substantial duplicates of the method claims which are said by counsel at oral hearing to be of record in continuation application 09/599,231 and have been allowed by the examiner, and would be considered by the examiner on that basis.

with respect to neodymium and erbium doped sol-gel silica glass monolith products, either expressly or under the principles of inherency, in a manner sufficient to have placed a person of ordinary skill in the art in possession of the claimed invention (answer, pages 4 and 5-7). *See generally, In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); *In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). Because the claimed and prior art rare earth-doped sol-gel glass monolith products thus reasonably appear to be identical, appellant now has the burden to prove by effective argument and/or objective evidence that the prior art products do not inherently possess the characteristics of the claimed products. *See Spada, supra; King*, 801 F.2d at 1327, 231 USPQ at 138-39; *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977).

In view of the *prima facie* case of anticipation made out over Orignac, we have again evaluated all of the evidence of anticipation and non-anticipation based on the record as a whole, giving due consideration to the weight of appellant's arguments in the brief and reply brief. *Spada, supra*.

We have carefully considered appellant's arguments that "[a]lthough Orignac . . . may have investigated the spectral properties of sol-gel glass monoliths," the reference does not disclose that the rare earth dopants, and concentrations thereof, were selected in to provide a special spectral feature in the "far UV range" so as to function as a calibration medium in cooperation with the components for an optical instrument recited in the preamble of appealed claim 37 (brief, pages 4-6; reply brief, pages 1-3). However, we are of the opinion that these arguments do not effectively establish that the neodymium and erbium doped sol-gel silica glass monolith products of Orignac do not necessarily or inherently have the characteristics of the claimed rare earth-doped sol-gel silica glass monolith products for two reasons. First, as we determined above, the preamble taken with the body of claim 37 gives meaning to the claim to the extent that the claimed rare earth-doped sol-gel monolith product must be "capable of assuming a position within the light path" of an optical instrument that contains the components stated in the preamble, when used as "[a] calibration medium" for that optical instrument. And, second, the fact that Orignac does not teach that the disclosed sol-gel silica glass monoliths can be used as a calibration medium or select the rare earth dopants on the basis of a special spectral

feature in the “far UV range,” is unavailing because it is not necessary that a reference “teach” the claimed invention, only that the appealed claims “‘read on’ something disclosed in the reference, i.e., all limitations of the claims are found in the reference, or ‘fully met’ by it.” *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983); *cf. Celeritas Technologies Ltd. V. Rockwell International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522 (Fed. Cir. 1998) (“[T]he question whether a reference ‘teaches away’ from the invention is inapplicable to an anticipation analysis.”).

Appellant further states that “[t]here is no mention in the Orignac reference” of the limitation set forth in appealed claims 3, 5 and 7, and apparently in the case of claim 5, that the “dopants must have a concentration many times that found in the materials disclosed in” the reference, without supplying the basis for these contentions (brief, page 5). In response, the examiner explains how each of these limitations are expressly or inherently shown in Orignac (answer, pages 5-7), including the dual interpretation of the phrase “concentration of the rare-earth dopant” in claim 5 which we find to be a reasonable, conditional interpretation of this claim as explained above. In the absence of rebuttal by appellant (reply brief in entirety), we find the examiner’s position to be reasonable on this record. In this respect, we find that among the rare earth-doped sol-gel silica glass monoliths specifically shown in Orignac is the species containing “3 at. %” neodymium illustrated in Orignac FIG. 3. It reasonably appears from Orignac that “~0.36 at. %” of this rare earth element is “1 wt %” when doped on “pure silica sol-gel glasses” (page 896). Thus, on this record, the single species of FIG. 3 appears to be doped with about 9 weight percent of neodymium, which anticipates the limitation of claim 5 as it stands on appeal. *See Titanium Metals Corp. v. Banner*, 778 F.2d 775, 781-83, 227 USPQ 773, 778-79 (Fed. Cir. 1985).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of anticipation found in Orignac with appellant’s countervailing evidence of and argument for no anticipation in fact and find that the claimed invention encompassed by appealed claims 2 through 15 are anticipated as a matter of fact under 35 U.S.C. § 102(a).

Turning now to the ground of rejection based on Xu, we find that, as a matter of fact, the examiner has established a *prima facie* case of anticipation of claims 3, 3 and 7, as we

interpreted these claims above, under § 102(b) by pointing out where each and every element of the claimed invention, arranged as required by the claim, is described identically in the reference with respect to erbium doped sol-gel silica glass monolith products,<sup>8</sup> either expressly or under the principles of inherency, in a manner sufficient to have placed a person of ordinary skill in the art in possession of the claimed invention. (answer, pages 4-5 and 5-7). *See generally, Spada, supra; King*, 801 F.2d at 1326, 231 USPQ at 138. Because the claimed and prior art erbium-doped sol-gel glass monolith products thus reasonably appear to be identical, the burden has shifted to appellant to prove by effective argument and/or objective evidence that the prior art products do not inherently possess the characteristics of the claimed products. *See Spada, supra; King*, 801 F.2d at 1327, 231 USPQ at 138-39; *Best, supra*.

In view of the *prima facie* case of anticipation made out over Xu, we have again evaluated all of the evidence of anticipation and non-anticipation based on the record as a whole, giving due consideration to the weight of appellant's arguments in the brief and reply brief. *Spada, supra*.

The arguments advanced by appellant with respect to the sol-gel silica glass monoliths of the appealed claims and Xu (brief, pages 6-7; reply brief, page 3) are essentially the same arguments advanced with respect to the sol-gel silica glass monoliths of the appealed claims and Orignac, which we considered above. We further note that appellant (reply brief in entirety) has also not responded to the position the examiner advanced in the answer with respect to appellant's arguments concerning Xu (answer, pages 5-6 and 7). Upon carefully considering the record with respect to the examiner's reliance on Xu, we adopt the position we expressed above with respect to the common issues. Specifically, we note that none of the appealed claims involved in this ground of rejection specify the concentration of the rare earth dopant, and the sol-gel silica glass monoliths of Xu are "doped with 1.2 mol% Er(NO<sub>3</sub>)<sub>3</sub>" (e.g., "3. Results," page 236). Appellant merely alleges that the claimed "rare earth dopants must have a concentration many times that found in the materials disclosed in Xu" (brief, page 7), but has not supported this position, which the examiner finds to be incorrect (answer, page 7). We observe that while Xu

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<sup>8</sup> We observe that Xu discloses sol-gel silica glass monoliths and thus suggest that the issue of whether this reference anticipates appealed claim 8 be considered upon any further prosecution of

does not disclose whether that amount of erbium doping of a sol-gel silica glass monolith exhibits a spectral feature in the range from 220nm to about 300nm as required by appealed claim 3, which range would overlap with if not be encompassed by the term “far UV range” in appealed claim 37 as we have interpreted this term above, the reference does disclose spectral features at 525nm, 550nm and 660 nm in Fig. 1(a) (pages 236-37). We find that the “exemplary emission spectrum for erbium doped silica” in specification FIG. 4 (page 13) appears to show similar spectral features in the 500nm to 700nm range as Xu Fig. 1(a), particularly at 521nm (page 16. lines 3-9). We note that appealed claim 3 provides for additional spectral features “to about 700nm.” Thus, on this record, we find that the examiner has reasonably found that the erbium doped sol-gel silica glass monoliths of Xu inherently exhibit a spectral feature in the “far UV range,” thus anticipating the limitations of the appealed claims.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of anticipation found in Xu with appellant’s countervailing evidence of and argument for no anticipation in fact and find that the claimed invention encompassed by appealed claims 2 through 4, 6, 7, 9 through 15 and 37 are anticipated as a matter of fact under 35 U.S.C. § 102(b).

The examiner’s decision is affirmed.

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this appealed claim before the examiner.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

*AFFIRMED*

CHARLES F. WARREN	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
PETER F. KRATZ	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
LINDA R. POTEATE	)	
Administrative Patent Judge	)	

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Anthony J. Janiuk  
Waters Corporation  
34 Maple Street  
Milford, MA 01757