IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

OSRAM GMBH and OSRAM OPTO SEMICONDUCTORS GMBH	)	
Plaintiffs.	)	C.A. No. 06-710-SLR
v.	)	**JURY TRIAL DEMANDED**
CITIZEN WATCH CO., LTD. CITIZEN ELECTRONICS CO., LTD. And CECOL, INC.	)	
Defendants.	)	

ANSWERS AND COUNTERCLAIMS
OF CITIZEN ELECTRONICS CO., LTD. AND CECOL, INC,
TO PLAINTIFFS' FIRST SUPPLEMENTAL COMPLAINT

Defendants Citizen Electronics Co., Ltd. (hereinafter "CE"), and Cecol, Inc. (collectively, "Citizen"), by and through the undersigned attorneys, hereby respond to the similarly numbered paragraphs within the First Supplemental Complaint of Osram GmbH and Osram Opto Semiconductors GmbH (collectively, "Osram").

I. ANSWERS TO COMPLAINT

NATURE OF THE ACTION

1. Citizen admits this is a civil action asserting patent infringement arising under the patent laws of the United States, Title 35, United States Code, and that Osram seeks damages, injunctive relief and other relief in connection thereto. Citizen denies the remaining allegations.

PARTIES

2. Admitted.

3. Admitted.

4. Admitted.

5. Admitted.

6. Admitted.

JURISDICTION AND VENUE

7. Admitted that this court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a). Otherwise denied.

8. Admitted that Cecol, Inc. is a Delaware corporation, otherwise denied. CE reserves the right to transfer this case if and when its pending appeal of its declaratory judgment action to the Court of Appeal for the Federal Circuit is resolved.

9. Admitted that this Court has personal jurisdiction over Cecol, Inc., by virtue of Cecol, Inc. being a Delaware corporation. Admitted that CE is the parent corporation of Cecol, Inc., and that Citizen Watch Co., Ltd. is the parent corporation of CE. Citizen denies all remaining allegations.

10. Admitted that CE filed two declaratory judgment actions against Osram, and that both of its actions have been dismissed. Admitted that in January 2005 CE filed its first declaratory judgment action, seeking a declaration that several Osram patents were invalid and/or not infringed. Admitted that Osram successfully moved the trial court to dismiss CE's first declaratory judgment action for lack of subject matter jurisdiction. Admitted that on July 29, 2005, the trial court issued its final order dismissing CE's first declaratory judgment action, and that CE filed a second declaratory judgment action against Osram a few days later. Otherwise denied.

11. Admitted that the trial court dismissed CE's second declaratory judgment action. Otherwise denied. An appeal of the decision from CE's second suit is pending.

12. Citizen denies all allegations.

PATENTS-IN-SUIT

13. Admit to the title of the '259 patent, the purported inventors listed thereon, and issue date, and that what appears to be a true copy of the '259 patent is attached to the complaint as Exhibit A.

14. Admit to the title of the '301 patent, the purported inventors listed thereon, and issue date, and that what appears to be a true copy of the '301 patent is attached to the complaint as Exhibit B.

15. Admit to the title of the '780 patent, the purported inventors listed thereon, and issue date, and that what appears to be a true copy of the '780 patent is attached to the complaint as Exhibit C.

16. Admit to the title of the '247 patent, the purported inventors listed thereon, and issue date, and that what appears to be a true copy of the '247 patent is attached to the complaint as Exhibit D.

17. Admit to the title of the '500 patent, the purported inventors listed thereon, and issue date, and that what appears to be a true copy of the '500 patent is attached to the complaint as Exhibit E.

18. Admit to the title of the '162 patent, the purported inventors listed thereon, and issue date, and that what appears to be a true copy of the '162 patent is attached to the complaint as Exhibit F.

19. Admit to the title of the '283 patent, the purported inventors listed thereon, and issue date, and that what appears to be a true copy of the '283 patent is attached to the complaint as Exhibit G.

20. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 20, and therefore denies them.

COUNT I – ALLEGED INFRINGEMENT OF THE '259 PATENT

21. Citizen incorporates by reference its responses to each of the foregoing paragraphs 1-20.

22. Denied.

23. Denied.

24. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 24, because the statement is indefinite as to any timeframe or the basis for and meaning of the term "actual knowledge." Therefore, denied.

25. Denied.

26. Denied.

27. Denied.

COUNT II – ALLEGED INFRINGEMENT OF THE '301 PATENT

28. Citizen incorporates by reference its responses to each of the foregoing paragraphs 1-20.

29. Denied.

30. Denied.

31. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 31, because the statement is indefinite as to any timeframe or the basis for and meaning of the term "actual knowledge." Therefore, denied.

32. Denied.

33. Denied.

34. Denied.

COUNT III – ALLEGED INFRINGEMENT OF THE '780 PATENT

35. Citizen incorporates by reference its responses to each of the foregoing paragraphs 1-20.

36. Denied.

37. Denied.

38. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 38, because the statement is indefinite as to any timeframe or the basis for and meaning of the term "actual knowledge." Therefore, denied.

39. Denied.

40. Denied.

41. Denied.

COUNT IV – ALLEGED INFRINGEMENT OF THE '247 PATENT

42. Citizen incorporates by reference its responses to each of the foregoing paragraphs 1-20.

43. Denied.

44. Denied.

45. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 45, because the statement is indefinite as to any timeframe or the basis for and meaning of the term "actual knowledge." Therefore, denied.

46. Denied.

47. Denied.

48. Denied.

COUNT V – ALLEGED INFRINGEMENT OF THE '500 PATENT

49. Citizen incorporates by reference its responses to each of the foregoing paragraphs 1-20.

50. Denied.

51. Denied.

52. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 52, because the statement is indefinite as to any timeframe or the basis for and meaning of the term "actual knowledge." Therefore, denied.

53. Denied.

54. Denied.

55. Denied.

COUNT VI – ALLEGED INFRINGEMENT OF THE '162 PATENT

56. Citizen incorporates by reference its responses to each of the foregoing paragraphs 1-20.

57. Denied.

58. Denied.

59. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 59, because the statement is indefinite as to any timeframe or the basis for and meaning of the term "actual knowledge." Therefore, denied.

60. Denied.

61. Denied.

62. Denied.

COUNT VII – ALLEGED INFRINGEMENT OF THE '283 PATENT

63. Citizen incorporates by reference its responses to each of the foregoing paragraphs 1-20.

64. Denied.

65. Denied.

66. Citizen lacks information sufficient to form a belief as to the truth of the allegations set forth in paragraph 66, because the statement is indefinite as to any timeframe or the basis for and meaning of the term "actual knowledge." Therefore, denied.

67. Denied.

68. Denied.

69. Denied.

II. DEFENSES TO OSRAM'S COMPLAINT

1. The claims of the '259 patent, '301 patent, '780 patent, '247 patent, '500 patent, and '162 patent and '283 patent (collectively, the "patents-in-suit") are invalid for failure to meet the requirements of the United States patent laws, 35 U.S.C. §§ 101 et seq., including, but not limited to §§ 102, 103, and 112.
2. Neither Citizen nor Citizen's white light LED products or processes infringe, contribute to the infringement of, or induce the infringement of any valid and enforceable claim of the patents-in-suit.
3. Osram's claim for damages, if any, against Citizen is statutorily limited by 35 U.S.C. § 286 and/or § 287.
4. Prosecution history estoppel bars Osram's assertion of any interpretation of any of the claims of the patents-in-suit that would cover any of Citizen's white light LEDs.

Inequitable Conduct

5. Under 37 C.F.R. § 1.56, all individuals associated with the preparation, filing, and prosecution of a patent application have an uncompromising duty of candor and good faith in dealing with the PTO. That duty requires such individuals, *inter alia*, to disclose to the PTO all information known by them to be material to patentability.
6. Among those individuals subject to this "duty of disclosure" are the inventors named in a patent application, attorneys, agents, and any others associated or substantively involved with preparing and prosecuting the patent application (hereinafter collectively referred to as "Osram").

7. The duty of candor before the PTO, in particular, 37 CFR 1.56(b)(2) requires applicants to disclose any information that "refutes, or is inconsistent with, a position the applicant takes...."

8. The patents-in-suit can be divided into two families. Each family has a common "parent" application or patent, to which younger members of that family can trace their lineage.

9. One family can be characterized as the "particle size patents," due to the presence of a particle size distribution limitation in each claim of the '301, '247, '259, and '780 patents (hereinafter, "the particle size patents"). U.S. Patent No. 6,066,861 is the "parent" patent of these "particle size patents."

10. The other family can be characterized as the "conversion" patents due to the presence in the claims of the '500, '162, and '283 patents of an element that converts primary radiation emitted by a semiconductor component (hereinafter, the "conversion patents"). U.S. Patent No. 7,078,732 is the "parent" patent to these "conversion patents."

11. The conversion patents and particle size patents are unenforceable because Osram made misleading statements and withheld material information or did not bring material information to the attention of the patent examiner. This inequitable conduct was pervasive throughout both patent families, and includes conduct during prosecution not only of the conversion patents, but also other patents in the same conversion family that are not asserted by Osram in this action. These additional omissions and commissions in the non-asserted patents reinforce the inequitable conduct in the patents-in-suit, and confirm that Osram fraudulently

procured their patents through multiple patterns of intentional misconduct, and not isolated incidents or mistakes.

A. Inequitable Conduct Regarding the '162, '500 and '283 Conversion Patents

Osram Failed to Properly Disclose an Adverse Interference Judgment that Prohibited its Entitlement to the Conversion Patents

12. Osram initiated an interference dispute with Nichia Corporation (hereafter, "Nichia"), and subsequently received an adverse judgment that precluded Osram from obtaining the same claims or claims of obvious scope to those lost in the interference. However, Osram did just that, and prosecuted claims as if it had won, rather than lost the interference. Indeed, although Osram was required to bring the existence and materiality of this interference to the attention of those members of the U.S. Patent and Trademark Office ("PTO") examining Osram's conversion patents, Osram failed to do either, or it did so in a manner that mischaracterized and misled patent examiners to believe that Osram was entitled to the patents. But for Osram's fraudulent actions, the conversion patents-in-suit, i.e., the '500, '283, and '162 patents, would not have issued in their present form.

Background Regarding the Osram-Nichia Interference

13. On April 9, 2001, Osram filed application 09/828,727 ("the '727 application"). This '727 application relates to applications that matured into Osram's '500, '162, and '283 conversion patents in that all of them were "sibling" applications to each other, since all of them claim priority to the same parent application, namely no. 09/221,789. This parent application matured into the "parent" patent, U.S. 7,078,732.

14. Simultaneously with its April 9, 2001 filing of the '727 application, Osram requested the PTO to initiate an interference proceeding between Osram's '727 application and U.S. Patent No. 6,069,440, which had issued on May 30, 2000 to Nichia (hereafter, "Nichia's '440 patent").

15. An interference proceeding before the PTO determines which party first invented an invention, so that only one patent exists or will exist for any given invention, and that only one entity owns that particular invention. In this case, Nichia's '440 patent had already claimed the subject matter claimed in Osram's '727 application.

16. On page 2 of its April 9, 2001 request for interference, Osram argued that claims 34 and 40 of its '727 application were claims defining the subject matter of the interference with Nichia's '440 patent.

17. Claim 40 of Osram's '727 application recited:

> 40. A light emitting device comprising:
>
> a light emitting component capable of emitting blue light, and
> a coating member covering said light emitting component and
> containing a phosphor capable of absorbing a part of blue light emitted by said light emitting component and emitting light of wavelength different from that of the absorbed light,
> wherein the color of said phosphor is yellow and
> said coating member contains light diffusing particles.

18. Claim 34 of Osram's '727 application was identical to claim 40, except instead of reciting that its "phosphor is yellow and said coating member contains light diffusing particles," it stated that its "phosphor is yellow and said coating member is colored opal by containing a dispersant."

19. Claim 34 directly copied, and therefore was identical to claim 1 of Nichia's '440 patent.

20. On pages 3 and 7 of its April 9, 2001, request for interference, Osram indicated that the "coating member" mentioned in claim 34 and 40 of the '727 application corresponded to "luminescence conversion elements" both in the form of an encapsulation and conversion layer.

21. All claims corresponding to the subject matter of the interference included the use of diffusers (referred to alternatively as "dispersants") within the coating layer/luminescence converting element.

22. On page 2 of its April 9, 2001 request for interference, Osram stated that claims 3-8 of Nichia's '440 patent, including claim 5 that recites the use of a silicon resin, "would be obvious in light of the respective independent claims on which they depend."

23. On June 28, 2002, the PTO declared an interference (no. 104,846) between Osram's '727 application and Nichia's '440 patent. It defined the "count," i.e., subject-matter of the interference to be either of claims 34 and 40 of Osram's '727 application, or claim 1 of Nichia's '440 patent, and it defined all claims within Osram's '727 application to correspond to, or fall within the subject matter of the interference.

24. On or around June 24, 2002, Osram issued a press release stating "[A] patent dispute that Osram Opto Semiconductor GmbH and Nichia Corporation had been conducting in Japan, the United States, and Europe was resolved with the signing of a patent cross-licensing agreement....The matter in question is the basic technology for the industrial manufacture of light emitting diodes (LEDs) and

lasers made from GN/InGaN-based semiconductors and also the use of phosphor converters to generate white light in particular."

25. On or around June 25, 2002, Nichia issued a press release announcing that Osram and Nichia were entering a patent cross-license agreement and that this "agreement resolves all pending patent disputes between Nichia and Osram…."

26. On August 9, 2002, instead of filing its list of preliminary motions in the interference, Osram filed a document stating "that [it] is not planning to file preliminary motions, inasmuch as the parties are planning to settle this interference."

27. In a document dated December 5, 2002, Osram filed a request for adverse judgment to be entered against Osram, upon the grounds that it was abandoning the interference contest. That is, Osram filed a paper voluntarily surrendering the interference.

28. Osram's request for adverse judgment was granted December 16, 2002. The judgment of the U.S. Board of Patent Appeals and Interferences stated:

> ORDERED that judgment on priority as to Count 1… is awarded against [Osram].
>
> FURTHER ORDERED that [Osram] is not entitled to a patent containing claims 34-45 (corresponding to Count 1 respectively) of application 09/828,727, filed April 9, 2001.
>
> …
>
> FURTHER ORDERED that if there is a settlement agreement, attention is directed to 35 U.S.C. § 135(c) and 37 CFR §1.661.
>
> (Emphasis added).

29. Due to the Judgment dated December 16, 2002, Nichia retained its '440 patent, and Osram was not entitled to a patent on any of its claims in its '727 application or claims corresponding (i.e., obvious) to claim 1 of Nichia's '440 patent.

30. Furthermore, as stated in the U.S. Patent Office's Manual of Patent Examining Procedure in section 2308.03, Osram, as "a losing party, is barred on the merits from seeking a claim that would have been anticipated or rendered obvious by the subject matter of the lost count." When the interference was declared, it defined all of Osram's claims within the '727 application as corresponding to the subject matter of the interference. Therefore, Osram was not entitled to any claim in any patent that would have been anticipated or rendered obvious by any of the claims in its '727 application (all of which corresponded to the lost count in the interference).

The Interference that Osram Lost is Material to the '500 Patent, and Yet Osram Never Disclosed it to the U.S. Patent Office

31. On December 6, 2000, Osram filed the application that matured into the '500 patent.

32. Osram's '500 patent contains claims very similar to, and, indeed, are anticipated by or obvious over the subject matter of Osram's '727 application that was lost in the interference. For example, just like the claims in Osram's '727 lost interference application, claim 3 of the '500 patent covers a light emitting device that emits blue light, with a luminescence conversion layer containing light diffusing particles and phosphor that converts only part of the light emitted from the semiconductor into radiation of a different wavelength.

33. Importantly, pages 3 and 7 of Osram's April 9, 2001 request for interference stated that the luminescence conversion layer or encapsulation described in their '727 interference application (which is identical to the luminescence conversion layer or encapsulation described in the '500 patent, due to the fact that the '727

and '500 patent are related) is the "coating member" recited in the '727 application's claims. That is, Osram admitted that the luminescence conversion layer or encapsulation of the type described in the '500 patent is identical to the "coating member" in the '727 application's claims that Osram lost in the interference. Since Osram is not entitled to patent claims that are anticipated or obvious in view of Osram's claims from its lost '727 interference application, the interference highly material to the '500 patent.

34. The prosecution of claims reciting diffusers or light diffusing particles in the '500 Patent further demonstrates the materiality of the interference proceedings and Osram's inequitable conduct in withholding this highly material information from the examiner.

35. The '500 patent claims 3 and 4 were allowed by the PTO Examiner due to the recitation that the resin layer or encapsulation includes "light-diffusing particles." In the application that matured into the '500 patent, Osram initially attempted to obtain broader patent claims. However, the Examiner rejected all of the original claims, except for dependent application claims 13, 25, and 26. As to these dependent claims, the Examiner indicated that they would be allowable if they were rewritten in independent form. Dependent application claims 25 and 26 read as follows (emphasis added):

> 25. The semiconductor component according to claim 1, wherein said luminescence conversion element includes ***light-diffusing particles***.
>
> 26. The semiconductor component according to claim 1, which comprises a transparent encapsulation with ***light-diffusing particles***.

36. Thus, the Examiner did not consider the subject matter of independent claim 1 allowable, but did consider the subject matter of claims 25 and 26 patentable, due to the recitation of light-diffusing particles. Osram then rewrote application claims 25 and 26 in independent form, and they became claims 3 and 4 of the '500 patent.

37. However, Osram failed to inform the PTO Examiner that through the PTO interference dispute with Nichia that Osram lost, Osram knew that Nichia already had its '440 patent with claims directed to light-diffusing particles.

38. Conversely, Osram failed to inform the PTO Examiner that Osram's '727 application, which was lost in the interference, likewise had claims directed to light diffusing particles, and that the interference judgment prohibited Osram from obtaining claims that are obvious to or anticipated by the '727 application claims lost in the interference.

39. By requesting the claims that ultimately issued in the '500 Patent, Osram was "recapturing" subject matter in the '500 patent that Osram had lost in its interference with Nichia.

40. The interference is further relevant and material to Osram's '500 patent through the '500 patent's claim 5, which recites that the luminescence conversion element includes a specific resin (silicone).

41. On page 2 of Osram's Request for Interference, Osram conceded that the use of silicone was obvious. In particular, Osram requested that the independent claims involved in the interference should be considered as the "count" (i.e., the subject

matter of the interference dispute), while the dependent claims of the Nichia patent and corresponding claims by Osram were considered to be "obvious":

> Applicants [i.e., Osram] identify claims 1-8 [of Nichia's USP 6,069,440] as corresponding to the proposed count. Independent claims 1, 2 correspond exactly to the proposed count. The remaining claims correspond substantially to the proposed count because they describe subject matter that would be obvious in light of the respective independent claims on which they depend.

42. Dependent claim 5 of Nichia's '440 patent recited the use of silicone:

> 5. A light emitting device according to claim 2; wherein said molding member are made of the material selected from the group consisting of epoxy resin, urea resin and ***silicone resin***.
> (Emphasis added).

43. Yet, in proceedings before the Examiner in the '500 patent, Osram repeatedly argued that its claims were patentable *by virtue of the recitation of silicone as the particular resin of the luminescence conversion element*. Indeed, with respect to many references initially relied upon by the Examiner to reject the '500 patent's claims, the use of silicone for the conversion element was the only distinction pointed to by Osram.

44. For example, on page 18 of its response dated April 17, 2003, after the '500 patent's claims were initially rejected, Osram argued to the PTO Examiner:

> Stevenson shows a GaN semiconductor and mentions using phosphors to change the frequency of light, but does not describe how the phosphors would be employed and [Stevenson] ***does not disclose*** a luminescence conversion layer or encapsulation ***of silicone*** as required by claims 1 and 52, respectively.
>
> Tadatsu JP 5152609 has gallium nitride semiconductor (with emitting peaks of 430 nm and 370 nm) and a dome-

> shaped molded resin encapsulation with a fluorescent dye 5 or pigment dispersed in the resin. ***Tadatsu thus does not disclose*** a luminescence conversion layer or encapsulation of ***silicone*** as required by claims 1 and 72, respectively. (Emphasis added).

45. Immediately after submission of the arguments above, the Examiner allowed the application that became the '500 patent, and application claim 52 (which Osram distinguished based upon the use of silicone) became claim 5 of the '500 patent.

46. Accordingly, the materiality of Osram's interference with Nichia is irrefutable, given Osram's additional admission during the interference that the use of silicone was obvious, which directly contradicts the opposite argument by Osram during the '500 patent's prosecution that the use of silicone rendered the examined claims patentable.

47. In addition to the use of silicone, the '500 patent's claim 5 also specifies a particular type of luminescent material (or phosphor), which is met by a YAG (or yttrium aluminum garnet) fluorescent material.

48. Osram also acknowledged that the use of a YAG phosphor was obvious in its interference dispute with Nichia. Specifically, Osram conceded that the dependent claims of Nichia's '440 patent were obvious, and dependent claim 7 is directed to particular types of phosphors, including garnet fluorescent materials (a YAG phosphor is a type of garnet fluorescent material):

> 7. A light emitting device according to claim 2; wherein said light emitting component has a nitride compound semiconductor and said phosphor contains a ***garnet fluorescent material*** comprising 1) at least one element selected from the group consisting of ***Y***, Lu, Se, La, Gd and Sm, and 2) at least one element selected from the group consisting of ***Al***, Ga and In. (Emphasis added).

49. Despite the high materiality of the interference to the claims to the '500 patent, including, but not limited to:

a) the fact that the lost interference prohibited Osram from prosecuting claims of equal or obvious scope to its '727 applications' claims (or the count) lost in the interference, including *inter alia*, the use of diffusers or dispersants;

b) Osram's statements regarding the obvious use of Silicone or YAG phosphors during the interference and its contrary statements made during prosecution of the '500 patent to gain allowance of the claims; and

c) Osram's admission during its request for interference that the subject matter of the interference would include luminescence conversion elements in the form of both encapsulations and layers,

Osram failed to bring to the examiner's attention in any way during the '500 prosecution the existence, subject matter, or relevance of Osram's interference with Nichia, including, *inter alia*, the contrary positions Osram had taken during the interference or the subject matter of the interference for which Osram was barred from obtaining a patent. Indeed, Osram obtained claims in the '500 patent based on subject matter clearly within that barred by the interference, including diffusers (or dispersants) and the use of silicone.

50. Osram had more than ample time and adequate opportunity to bring the Osram-Nichia interference to the Patent Examiner's attention during the prosecution of the '500 patent. The application that matured into the '500 patent was filed December 6, 2000, and issued as a patent on November 2, 2004, more than 22 months after the December 16, 2002 judgment that concluded the Osram-Nichia interference.

51. Within the 22 months after the December 16, 2002 judgment that concluded the interference, Osram filed three separate sets of Information Disclosure Statements on June 5, 2003, July 3, 2003, and January 15, 2004,with the examiner of the application that matured into the '500 patent. Although these disclosures identified various references, no mention was made of the Osram-Nichia interference, the contradictory positions Osram had taken during the interference, or the subject matter that was barred to Osram as a result of losing the interference.

52. Further, the same individual who served as lead counsel for Osram during the Osram-Nichia interference also represented Osram throughout the prosecution of the '500 patent. These facts establish that Osram knew of the materiality of the interference, and intentionally failed to call it to the Examiner's attention in an effort to mislead the Patent Office into issuing the '500 patent. Indeed, the interference and other disputes between Osram and Nichia were of such a high profile to Osram that upon resolution of its disputes, Osram issued a press release to announce their resolution. Yet, Osram misled the examiner during prosecution

of the '500 patent by withholding highly material information concerning the interference.

53. Osram knew that it was not entitled to a patent on the subject matter of the interference – subject matter that Osram recaptured in the '500 patent. By recapturing this subject matter, Osram accomplished exactly what the interference was structured to avoid; namely, both Nichia and Osram possessing patents with overlapping subject matter, such that a company (e.g., CE) would need to obtain license agreements from both Nichia and Osram for the same white light emitting LED technology.

54. Through its press release dated October 5, 2004, Osram appreciates its position of requiring licenses from the public, even when the public has already licensed white LED technology from Nichia:

> However, [the Managing Director of Osram Opto] also pointed out that in view of the patent exchange agreement between Osram and Nichia, companies that have received a license from Nichia are not automatically entitled to use Osram patents.

The Interference that Osram Lost is Also Material to Osram's Other Conversion Patents, and Yet Osram did not Properly Bring Highly Material Information Relating to the Interference to the PTO's Attention during Prosecution

55. On November 2, 2004, Osram filed application number 10/979,778 which matured into the '283 patent.

56. Each of the claims in the '283 patent require at least one luminescence conversion layer applied directly to a semiconductor. Furthermore, claim 34 of the '283 patent requires the conversion layer to be made of silicone.

57. Page 3 of Osram's April 9, 2001 request for interference stated that the luminescence conversion layer described in their '727 interference application

(which is identical to the luminescence conversion layer described in the '283 patent, due to the fact that the '727 application and '283 patent are related) is the "coating member" recited in the '727 application's claims. That is, Osram admitted that the luminescence conversion layer of the type described in the '283 patent is identical to the "coating member" in the '727 application's claims that Osram lost in the interference. Since Osram is not entitled to patent claims that are anticipated or obvious in view of the lost count or Osram's claims from its 727 interference application, the interference is highly material to the '283 patent.

58. On page 2 of Osram's Request for Interference, Osram conceded that the use of silicone was obvious. In particular, Osram requested that the independent claims involved in the interference were considered as the "count" (i.e., the subject matter of the interference dispute), while the dependent claims of the Nichia patent and corresponding claims by Osram were considered to be "obvious":

> Applicants [i.e., Osram] identify claims 1-8 [of Nichia's USP 6,069,440] as corresponding to the proposed count. Independent claims 1, 2 correspond exactly to the proposed count. The remaining claims correspond substantially to the proposed count because they describe subject matter that would be obvious in light of the respective independent claims on which they depend.

59. Dependent claim 5 in the interference recited the use of silicone:

> 5. A light emitting device according to claim 2; wherein said molding member are made of the material selected from the group consisting of epoxy resin, urea resin and ***silicone resin***.
> (Emphasis added).

60. During prosecution of the '283 patent, Osram did not provide any suggestion to the PTO regarding the existence of its lost interference with Nichia, until

September 12, 2005, nearly 33 months after the December 16, 2002, judgment terminated the interference against Osram.

61. When Osram did barely mention the interference to the PTO, Osram did so in a manner that did not bring highly material information relating to the PTO's attention.

62. Instead, Osram barely provided a passing reference to the interference within a list of many other applications in a PTO submission dated September 12, 2005. Moreover, the September 12, 2005 submission discussed other subjects and cited numerous documents (some 62) to the PTO. However, nowhere did Osram disclose highly material information relating to the interference including, *inter alia*, the subject matter that was barred to Osram as a result of losing the interference. Pages 2-3 of Osram's September 12, 2005 submission merely mention in passing:

> Finally, we note that there are a number of applications related to the present application. Specifically, the present application claims priority to U.S. patent application serial number 09/731,220, now issued as U.S. Patent No. 6,812,500, and U.S. Patent Application Serial No. 09/221,789, filed December 28, 1998 (hereinafter "the original application"). Furthermore, the following applications claim priority to the original application: U.S. patent serial number 09/731,452, now issued as U.S. Patent No.6,576,930 (i.e., the '930 patent), U.S. patent application serial number 09/828,727, now abandoned following a decision by the Board of Patent Appeals and Interferences; U.S. patent application 11/080,786, now published as U.S. Patent Publication No. 2005-0161694, and U.S. patent application serial number 11/150,916.

63. In this paragraph which Osram indicates is simply to recite related applications, Osram lists "U.S. patent application serial number 09/828,727, now abandoned following a decision of the Board of Patent Appeals and Interferences." This is incomplete, misleading, and fails to bring highly material information to the

attention of the examiner. Osram's characterization does not even explicitly state that Osram lost the interference. Instead, Osram's statement is sufficiently vague to imply that Osram's '727 application may have gone abandoned during *ex parte* patent prosecution after Osram won the interference. Moreover, this vague passing reference clearly failed to inform the examiner of the subject matter that was barred to Osram as a result of the interference.

64. Osram knew that it lost the interference and that the abandonment of the '727 application was highly material because Osram could not obtain claims that are anticipated by or obvious in view of the claims or count lost in the interference. Furthermore, as a result of the interference, another party, in this case, Nichia, had been awarded the subject matter of the interference. The mere passing reference to the interference in the middle of a paragraph listing a series of other applications is insufficient to bring this highly material information to the examiner's attention. This recitation supports an inference that Osram intentionally misled the PTO and that the '283 patent is therefore unenforceable due to inequitable conduct.

65. On March 15, 2005 Osram filed application number 11/080,786 which matured into the '162 patent.

66. Page 3 of Osram's April 9, 2001 request for interference stated that the luminescence conversion layer and the luminescence encapsulation described in their '727 interference application (which is identical to the luminescence conversion layer described in the '162 patent, due to the fact that the '727 application and '162 patent are related) are the "coating member" recited in the

'727 application's claims. That is, Osram admitted that the luminescence conversion layer of the type described in the '162 patent is identical to the "coating member" in the '727 application's claims that Osram lost in the interference. Since Osram is not entitled to patent claims that are anticipated or obvious in view of the lost count or Osram's claims from its 727 interference application, the interference is highly material to the '162 patent.

67. During prosecution of the '162 patent, Osram did not provide any suggestion to the PTO regarding the existence of its lost interference with Nichia, until September 12, 2005, nearly 33 months after the December 16, 2002 judgment terminated the interference against Osram. In Osram's fourth Information Disclosure Statement ("IDS"), a reference to the interference was buried in the seventh paragraph of the IDS.

68. When Osram did barely mention the interference to the PTO, Osram did so in a manner that did not bring highly material information relating to the PTO's attention.

69. Instead, Osram barely provided a passing reference to the interference within a list of many other applications in a PTO submission dated September 12, 2005. Moreover, the September 12, 2005 submission discussed other subjects and cited numerous documents (some 62) to the PTO. However, nowhere did Osram disclose highly material information relating to the interference including, *inter alia*, the subject matter that was barred to Osram as a result of losing the interference. Pages 2-3 of Osram's September 12, 2005 submission merely mention in passing:

> Finally, we note that there are a number of applications related to the present application. Specifically, the present application claims priority to U.S. Patent Application Serial No. 09/221,789, filed December 28, 1998 (hereinafter "the original application"), and the following applications claim priority to the original application: U.S. patent application serial number 731,220, now issued as U.S. Patent No. 6,812,500, and U.S. Patent Application Serial No. 09/221,789, filed December 28, 1998 (hereinafter "the original application"). Furthermore, the following applications claim priority to the original application: U.S. patent serial number 09/731,452, now issued as U.S. Patent No.6,576,930 (i.e., the '930 patent), U.S. patent application serial number 09/828,727, now abandoned following a decision by the Board of Patent Appeals and Interferences; U.S. patent application 10/979,778, now published 080,786, now published as U.S. Patent Publication No. 2005-0127385, and U.S. patent application serial number 11/150,916.

70. But in this paragraph, which Osram indicates is simply to recite related applications, Osram lists "U.S. patent application serial number 09/828,727, now abandoned following a decision of the Board of Patent Appeals and Interferences." This is incomplete, misleading, and fails to bring highly material information to the attention of the examiner. Osram's characterization does not even explicitly state that Osram lost the interference. Instead, Osram's statement is sufficiently vague to imply that Osram's '727 application may have gone abandoned during *ex parte* patent prosecution after Osram won the interference. Moreover, this vague passing reference clearly failed to inform the examiner of the subject matter that was barred to Osram as a result of the interference.

71. Osram knew that it lost the interference and that the abandonment of the '727 interference application was highly material because Osram could not obtain claims that are anticipated by or obvious in view of its claims or count lost in the interference. Furthermore, as a result of the interference, another party, in this case, Nichia, had been awarded the subject matter of the interference.

72. The mere passing reference to the interference in the middle of a paragraph listing a series of other applications is insufficient to bring the highly material information to a patent examiner's attention. This recitation supports an inference that Osram intentionally misled the PTO and that the '162 patent is therefore unenforceable due to inequitable conduct.

Osram Failed to File The Settlement Agreement that related to the Termination of the Osram-Nichia Interference

73. As stated in the December 16, 2002, judgment terminating the interference, 35 U.S.C.135(c) requires the filing of any settlement agreement made in connection with the termination of the interference. Failure to file such an agreement can render the settlement agreement unenforceable, and also render unenforceable any involved patents or patents maturing from applications that were involved in an interference.

74. 35 U.S.C. 135(c) was enacted to prevent anticompetitive agreements under the protective cover of patent interference proceedings.

75. 35 U.S.C. 135(c) states:

> Any agreement or understanding between parties to an interference, including any collateral agreements referred to therein, made in connection with or in contemplation of the termination of the interference, shall be in writing and a true copy thereof filed in the Patent and Trademark Office before the termination of the interference....Failure to file the copy of such agreement or understanding shall render permanently unenforceable such agreement or understanding and any patent of such parties involved in the interference or any patent subsequently issued on any application of such parties so involved. (Emphasis added.)

76. The *per se* unenforceability of patents and agreements that automatically accompanies the failure to file understandings or agreements made in connection with the termination of an interference underscores the high degree of materiality of information relating to interferences.

77. Despite the reminder within the final judgment to file all agreements and understandings relating to the termination of the interference, Osram did not file any such agreement or understanding.

78. The failure of Osram to file its settlement agreement relating to the termination of its interference proceeding, as required by 35 U.S.C. 135(c), represents an additional act within Osram's pattern of misconduct in deceiving the Patent Office on matters relating to its interference with Nichia.

Osram Mischaracterized or Failed to Cite Material Information relating to the ITC Proceedings and the '930 Patent

79. On or around May 6, 2004, Osram filed a complaint before the International Trade Commission (hereinafter, "ITC") requesting the exclusion from entry into the United States of white LEDs and products incorporating white LEDs that are manufactured, imported, or sold by three corporations (not including Citizen).

80. Osram asserted its U.S. Patent No. 6,576,930 ('the '930 patent) in the ITC litigation. The conversion element in the '930 patent is formed with a number of paths that have "a substantially equal path length."

81. During the '930 patent's prosecution, the examiner issued a rejection citing Japanese patent 5-152609 to Tadatsu ("Tadatsu") which teaches emission of multiple wavelengths with phosphor conversion to enable white light emission.

Osram distinguished its application from Tadatsu because, according to Osram, Tadatsu discloses a dome-shaped molded resin encapsulation where the resin is taller than it is wide "such that there is a longer path for the light through the resin upward than to the sides. Tadatsu thus does not teach substantially equal thickness, as required by claims 1 and 54." Thus, Osram surrendered the encapsulation embodiment and limited its conversion element to one having "substantially equal thickness."

82. In the ITC action, Osram argued that the "path length" limitation of the '930 patent meant that the device produces homogenous white light, and it therefore covered conversion elements in the form of an encapsulation as well as those in the form of an equal thickness layer. The ITC rejected Osram's assertion that the '930 patent covered encapsulations, since encapsulations were disclosed in the prior art. The ITC construed the "equal path length" limitation in the '930 claims to mean a luminescence conversion element of uniform thickness, just as Osram had argued during prosecution of the '930 patent.

83. Statements above regarding the ITC decision and statements concerning the '930 patent's prosecution history are relevant and material to the '500, '162, and '283 conversion patents because those statements show that the only way Osram distinguished the prior art Tadatsu reference was to limit its conversion element to one having "substantially equal thickness." When Osram dropped this limitation from its conversion patents, it was material to call these earlier statements regarding the Tadatsu reference to an examiner's attention, since the '930 patent's limitation was the only reason Osram overcame the prior art.

84. Nonetheless, Osram completely failed to disclose the ITC litigation in connection with the '500 patent. PTO rules require applicants to disclose when the subject matter for which a patent is being sought is or has been involved in a litigation. See, MPEP § 2001.06(c). Osram's failure to disclose the ITC litigation, which was pending during the prosecution of the '500 patent constitutes inequitable conduct.

85. In connection with the '283 patent, Osram disclosed the ITC litigation involving the '930 patent in its September 12, 2005 IDS. However, the disclosure only discussed the fact that the ITC had declined to hold the '930 patent invalid. Osram did not disclose that the ITC rejected Osram's argument that the '930 covered encapsulations, instead construing the "equal path length" limitation in the '930 claims to mean a luminescence conversion element of uniform thickness. The ITC came to this conclusion because encapsulation was disclosed in the prior art. The ITC's finding is information that "refutes, or is inconsistent with, a position the applicant [took]…." Osram's failure to call the PTO's attention to the ITC's finding violated its duty of candor and constitutes inequitable conduct.

86. These above-recited acts and omissions render the '283 patent unenforceable.

87. During prosecution of the '162 patent, Osram did disclose Tadatsu, the reference that caused Osram to limit the conversion element to substantially equal thickness, during prosecution of the '930 patent. However, this Tadatsu reference was not disclosed until the second IDS among a total of over 400 references cited during prosecution. Osram made no attempt to draw the examiner's attention to the relevance of the Tadatsu patent. Prosecution of the '162 patent proceeded as if

Osram had surrendered no subject matter during the '930 patent prosecution. By failing to disclose this information, Osram violated 37 CFR 1.56(b)(2) which required, at all relevant times, an applicant to disclose any information that "refutes, or is inconsistent with, a position the applicant [took]…."

88. During prosecution of the '162 patent, Osram disclosed the ITC litigation involving the '930 patent in its September 12, 2005 IDS. However, the disclosure only discussed the fact that the ITC had declined to hold the '930 patent invalid. Osram did not disclose that the ITC rejected Osram's argument that the '930 covered conversion elements in the form of an encapsulation, instead construing the "equal path length" limitation in the '930 claims to mean a luminescence conversion element of uniform thickness. The ITC came to this conclusion because encapsulation was disclosed in the prior art. The ITC's finding is information that "refutes, or is inconsistent with, a position the applicant [took]…" Osram's failure to discuss the finding violated its duty of candor.

89. During prosecution of the '500, '283, and '162 patents, Osram failed to bring highly material information to the attention of the PTO, including the relevance of Tadatsu and other prior art, and the fact that during prosecution of the '930 patent the only reason Osram distinguished over prior art was the equal path length limitation that was not present in claims being pursued in applications for the '500, '283, and '162 patents. Further, Osram did not disclose that this limitation was also a basis the ITC relied upon to uphold the validity of the '930 patent. In addition, Osram knew of the importance of this limitation, because this limitation was also the reason the ITC found no infringement of the '930 patent. However,

in the related applications, Osram did not include the equal path length limitations in all claim limitations and Osram obtained the '500, '283 and '162 patents while withholding or misleading the examiner as to highly material information concerning the '930 patent, the ITC proceedings, and the prior art.

Osram Mischaracterized or Failed to Cite its "Demand for Trial"

90. On March 3, 2000 Osram filed a "Demand for Trial" in the Japanese Patent Office seeking a trial to invalidate Japanese patent no. 2927279 on the basis of, *inter alia*, obviousness. Japanese patent 2927279 claimed, generally, an LED with a light-emitting gallium nitride semiconductor chip in a mount-lead cup, an inner lead connected with the chip by an electrically conductive wire, coated with a transparent resin of fluorescent material which emits light when hit by light from the LED chip, and a mold member covering the coating member, LED chip, and conductive wire. Osram's Demand for Trial laid out detailed arguments, with prior art, as to what subject matter was obvious and why.

91. The subject matter that Osram argued was obvious in Japanese patent 2927279 included the same subject matter that Osram pursued during prosecution of its US conversion patents. For example, each of Osram's conversion patents has claims regarding the use of diffuser particles in their conversion element. However, in the Demand for Trial submitted by Osram in its dispute with Nichia, Osram acknowledged:

> Claim 2 recites the feature that the mold member is shaped to have a lens effect and ***contains a diffusing member*** . . . [the prior art] discloses the feature of using a polycarbonate transparent resin as the resin for the cylindrical body 3 and mixing a ***light diffusing agent*** 7 . . . ***The Invention***

> ***according to Claim 2, therefore is known from [the prior art] . . .***

at pp. 30-31. (Emphasis added).

92. The '500 patent claims 3 and 4 were allowed by the PTO Examiner due to the recitation that the resin layer or encapsulation includes "light-diffusing particles." In the application that matured into the '500 patent, Osram initially attempted to obtain broader patent claims. However, the Examiner rejected all of the original claims, except for dependent application claims 13, 25, and 26. As to these dependent claims, the Examiner indicated that they would be allowable if they were rewritten in independent form. Dependent application claims 25 and 26 read as follows (emphasis added):

> 25. The semiconductor component according to claim 1, wherein said luminescence conversion element includes ***light-diffusing particles***.
>
> 26. The semiconductor component according to claim 1, which comprises a transparent encapsulation with ***light-diffusing particles***.

93. Thus, the Examiner did not consider the subject matter of independent claim 1 allowable, but did consider the subject matter of claims 25 and 26 patentable, due to the recitation of light-diffusing particles. Osram then rewrote application claims 25 and 26 in independent form, and they became claims 3 and 4 of the '500 patent.

94. However, Osram failed to inform the PTO Examiner that in its Demand for Trial, Osram had taken the position that the use of light diffusing agents in connection with a conversion element was known and disclosed in the prior art.

95. Similarly, Osram's conversion patents have claims to the use of a YAG phosphor. Within its Demand for Trial, Osram stated:

> It is generally known to convert the emission from the LED chip to different wavelengths by the fluorescent material in the mold resin. It is also common knowledge to a skilled person that the fluorescent material includes the fluorescent pigment formed by inorganic material and/or organic material and the fluorescent dye consisting of organic material, as recognized in A-18, page 18, line 10 to last line of page 9. The fluorescent material is also well-known which uses the wavelength emitted by the light source as the excitation light. It is a matter of design for a person skilled in the art to use the known inorganic fluorescent material as the material for the fluorescent material. ***The feature of using the yttrium aluminum garnet [YAG] fluorescent material is well-known in the art*** (See A-19, page 2).
> pp. 28 (Emphasis added).

96. Despite the related subject matter, during prosecution of the '500 patent, Osram identified the existence and purpose behind its Demand for Trial, but did not specifically cite to the materiality of this document, or explain its relevance within the sea of some 400+ references cited during the '500 patent's prosecution:

> The assignee of this application [Osram] filed a Demand for Trial in Japan seeking to invalidate Japanese Patent No. 2927279 on March 3, 2000. That Japanese patent claims priority from three of the five Japanese applications just noted and includes claims that are directed to a light emitting diode including a fluorescent material having the general formula $(RE_{1-x}\ Sm_x)_3(Al_yGa\ 1\text{-}y)O_{12}$:Ce. (See claim language at pages 2-5 of the Demand for Trial.) In that Demand for Trial, it is asserted that the Japanese Patent No. 2927279 is invalid under Japanese law on the basis of prior art and other reasons.

97. In the '162 patent and the '283 patent, Osram did not even explain its Demand for Trial at all, and merely listed it together with the more than 400 other references in an Information Disclosure Statement.

98. Given the high materiality of Osram's Demand for Trial, and Osram's failure to properly bring the Demand for Trial and Osram's contradictory statements therein to the examiner's attention, intent to deceive the patent Office can be inferred. Moreover, the egregiousness of Osram's conduct concerning Osram's own statements in the Demand for Trial is particularly apparent when considered in conjunction with Osram's other acts of misleading statements or failure to disclose highly material information, such as Osram's conduct with regard to the interference.

Osram Failed to call the PTO's Attention to the Materiality of the Prior Art That Caused Osram's to remove all References in its European Patent to Conversion Elements in a Form other than a Constant Thickness Layer

99. Osram prosecuted patent EP 0907969, the European equivalent to the '930 patent, before the European Patent Office. During prosecution of the European patent in early 2003, the examiner informed Osram that the only difference between the application and reference JP 8-7614 (hereinafter, the "Shimizu reference") was "the constant layer thickness of the luminescence-converting layer." In response, Osram restricted its claim to require a conversion element in the form of a uniform thickness layer. Based on the EPO's requirements, Osram was required to delete the unclaimed subject matter, which included all drawing figures with a conversion element in the form of an encapsulation, retaining only those drawings with a conversion element in the form of an equal or uniform thickness layer. This European rejection and citation of the Shimizu reference put Osram on notice that this reference is highly material to any claim that could cover more than a uniform thickness conversion layer.

100. Although Osram did cite the Shimizu reference in an IDS submitted in each of the '500, '162, and '283 patents, Osram failed to bring to the PTO examiner's attention highly material information concerning the Shimizu reference. The European Office action rejection based on the Shimizu reference is information that "refutes, or is inconsistent with, a position the applicant [took]...."

101. Osram's failure to apprise the examiner of the importance of this reference, and to submit the reference merely as one among several hundred references, violated Osram's duty of candor.

Osram Falsely Claimed Priority With the '162 Patent

102. The '162 patent application claims priority to German Applications Serial Nos. 196 25 622.4, ("DE '622") filed June 26, 1996 and 196 38 667.5 ("DE 667") filed September 20, 1996. DE '622 discloses a wavelength conversion element having a "luminescent dye" dispersed in epoxy resin. DE '622 repeatedly refers to the luminescent dye as an organic dye. Thus, the concept of using an inorganic luminescent dye is supported only by the later DE '667 document. Likewise, the disclosure in the '162 patent of encapsulating luminescent material with mutual different refractive indices is not supported by the DE '622 priority document. Rather, as with the inorganic luminescent materials, this disclosure is only found in the DE '667 priority application. Osram has therefore incorrectly claimed priority with regard to the '162 patent.

103. Upon information and belief, Osram was aware that the '162 patent could not claim priority, in all respects, to DE '622, and its recurring efforts to

incorrectly claim priority provide an inference of intent to mislead the U.S. Patent Office.

104. These acts and omissions, together with Osram's other misconduct cited above, render the '162 patent unenforceable.

Osram's Non-asserted Conversion Patents contain similar Prosecution Records that confirm the Pattern of Misconduct Perpetrated by Osram on the Patent Office

105. U.S. Patent no. 7,078,732 ("the '732 patent) is the "parent" patent in the United States to the '500, '162, and '283 patents-in-suit and the other conversion patents discussed below.

106. During the prosecution leading to the '732 patent, Osram did not make any mention of the interference between Osram and Nichia until September 12, 2005 – 2 ½ years after the interference judgment and as part of the sixth IDS filed in the '732 patent's prosecution after the conclusion of the interference. Like in the '162 and '283 prosecution histories, the reference to the interference was a fleeting reference buried in the list of applications cited as relating to the present application. The IDS mentioning the interference was filed a mere 10 days prior to the issuance of a Notice of Allowance.

107. Osram's incomplete and misleading disclosure further evidences Osram's patent of misconduct and intent to deceive the patent office.

B. Unenforceability of the '301, '247, '259, and '780 Particle Size Patents

108. The '301 patent is unenforceable because the inventors and/or Osram, or others acting for or on their behalf, violated their duty of disclosure to the PTO during the prosecution of the '301 patent by misrepresenting a material fact in

stating that Osram's German priority document DE 19638667 supported claim limitations regarding particle size distributions, when in fact the German priority document offered no such support.

109. On page 4 of its response dated February 12, 2001, Osram amended all claims in the '301 patent to require that "luminous substance pigments have grain sizes $\leq$ 20 μm and a mean grain diameter d50 $\leq$ 5 μm." Osram further stated, "The sole reference cited for disclosure of this feature was the PCT publication for the above-captioned application [co-pending application 09/650,932]. Inasmuch as the Examiner should now agree that applicant is entitled to the earlier filing, that publication cannot be considered as prior art, and the claims are patentable."

110. Osram's German priority document DE 19638667 in fact does not support a limitation requiring grain sizes $\leq$ 20 μm and a mean grain diameter d50 $\leq$ 5 μm, because the only reference to particle size in the priority document refers to grain sizes of 4μm – 13 μm.

111. On information and belief the inventors and/or Osram, or others acting for or on their behalf, knew that the misrepresentations regarding the alleged support in DE 19638667 for the claimed particle size distribution were incorrect, and that such statements were material to the prosecution of the '301 patent.

112. The high materiality of the misrepresentation is confirmed by the fact that the examined had rejected the application prior to the misrepresentation, and then allowed the application that matured into the '301 patent following the misrepresentation.

113. Despite the high materiality of the misstatements regarding support in the German priority document, no one having the duty of disclosure – i.e., the inventors, its attorneys, and any other individual substantively involved in prosecuting the application that matured into the '301 patent and associated with the inventor or assignee – disclosed or corrected this material misstatement to the PTO during prosecution of the '301 patent.

114. The misstatement to the PTO, in view of the fact that on information and belief, the inventors, and/or others having a duty to disclose were aware of the misstatement and its materiality to one or more of the claims during the prosecution of the '301 patent, demonstrates an intent to mislead and deceive the PTO in obtaining the '301 patent.

115. The making of and failure to correct this material misstatement with deceptive intent renders the '301 patent unenforceable due to inequitable conduct before the PTO.

116. For the same reasons as stated above, Osram further perpetuated this misrepresentation in the '247, '259, and '780 patents, upon information and belief, by continuing to assert, with deceptive intent, that each of the '247, '259, and '780 were entitled to the benefit of the German priority document D19638667.

117. The making of and failure to correct these material misstatement with deceptive intent likewise renders the '247, '259, and '780 patents unenforceable due to inequitable conduct before the PTO.

118. For all of the reasons set forth above, each of the patents in suit is unenforceable, due to inequitable conduct. Osram's intent to deceive the PTO is

evidenced in all of the patents in suit not only by the high materiality of the various misrepresentations, but also by the repeated pattern of Osram's conduct in misleading, misinforming, or simply hiding material facts from the PTO.

119. Moreover, intent to deceive the PTO in connection with the patents in suit is further evidenced by the fact that Osram regards the prosecution of the patent rights in the white LED field to be of immense commercial importance and a matter of high profile. It is therefore highly unlikely that the misrepresentations and failure to inform the PTO of material facts were mere administrative or unintentional oversights. The commercial importance of this technology to Osram is evidenced by:

a. Osram's numerous patent conflicts with Nichia, both in interferences before the PTO, and in various opposition proceedings throughout the world;

b. The various license negotiations, litigations, and ITC proceedings that Osram has commenced against its opponents;

c. The press releases issued by Osram reporting on its licensing and litigation developments; and

d. Osram's comprehensive patent efforts in the United States and worldwide, as evidenced by the fact that Osram has filed at least fifteen U.S. applications within just the particle size and conversion families.

III. EXCEPTIONAL CASE

This is an exceptional case under 35 U.S.C. § 285 and, as such, Citizen is entitled to recover from Osram the attorneys fees and costs incurred by Citizen in connection with this action.

IV. COUNTERCLAIMS BY CITIZEN ELECTRONICS, LTD. AND CECOL, INC.

Counterclaim-Plaintiffs Citizen Electronics Company, Ltd. ("CE") and Cecol, Inc. ("Cecol"), (collectively, "Citizen") by and through the undersigned attorneys, bring these counterclaims against counterclaim-defendants OSRAM GmbH and OSRAM Opto Semiconductors GmbH (collectively "OSRAM") as follows:

PARTIES

1. CE is a Japanese company having a principal place of business at 1-23-1 Kamikurechi, Fujiyoshida-shi, Yamanashi-ken 403-0001, Japan.

2. Cecol is a Delaware corporation with its principal place of business at 951 North Plum Grove Road, Suite D, Schaumburg, IL 60173.

3. On information and belief, OSRAM GmbH is a German company with a principal place of business at Hellabrunner Strasse 1, 81543 Munich, Germany.

4. On information and belief, OSRAM Opto Semiconductors GmbH is a German company with a principal place of business at Wernerwerkstrasse 2, 93049 Regensburg Germany, and it is a subsidiary of OSRAM GmbH.

NATURE OF THE COUNTERCLAIMS

5. These are counterclaims for declaratory judgment that neither Citizen nor Citizen's white light LED products or processes infringe, contribute to the infringement

of, or induce the infringement of Osram's intellectual property rights in the patents-in-suit and that such intellectual property rights are invalid and unenforceable due to inequitable conduct.

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331, 1338, 2201, and 2202. Venue is proper in this judicial district under 28 U.S.C. § 1391(c). CE reserves the right to transfer this case if and when its pending appeal of its declaratory judgment action to the Court of Appeal for the Federal Circuit is resolved.

7. This court has personal jurisdiction over counterclaim-defendants.

BACKGROUND

8. CE and Cecol have imported, offered for sale, and/or sold white light emitting diodes (LEDs) in the United States, and CE and Cecol continue to import, offer for sale, and sell white light emitting diodes in the United States.

9. Commencing in 2003, OSRAM asserted to CE that its white LEDs imported, offered for sale, and sold in the United States infringe several of the patents-in-suit. Throughout 2003, CE and OSRAM exchanged correspondence and discussed the alleged infringement of the patents-in-suit, but the parties reached no agreement.

10. OSRAM's January 28, 2003, letter to CE stated that "Citizen manufactures, markets, and sells white LED products . . . which makes use of our Particle Size Patents" and that OSRAM further believes "that your products . . . are offered for sale, sold, and used in countries where our Particle Size Patents are in force."

11. On or around March 14, 2005, OSRAM filed a patent infringement action against CE and CE's German distributor, before the Düsseldorf Regional Court in Germany.

12. OSRAM's German complaint asserts that CE's white LEDs infringe OSRAM's European Patent no. EP 0862794, and OSRAM's German utility model nos. DE-GM 297 24 847, DE-GM 297 24 382, and DE-GM 297 24 848.

13. Each of the patent documents asserted by OSRAM in its German complaint against CE is a member of the same family of international patent documents that includes the instant patents-in-suit. That is, all of the patents-in-suit are U.S. counterparts of patents upon which Osram brought suit against CE in Germany, and all these U.S. and German patents claim an origin to the same German applications.

14. On November 27, 2006, Osram filed its action in this court against CE and Cecol, asserting infringement of the patents-in-suit, due to the making, using, offering to sell, and/or selling by CE or Cecol of white light emitting LEDs.

15. OSRAM's actions and the facts recited above create a true case and controversy between CE/Cecol and Osram as to the patents-in-suit.

COUNTERCLAIM COUNT I
Non-Infringement of the Patents-in-suit

16. CE/Cecol repeat the allegations of counterclaim paragraphs 1 through 15, and defense paragraphs 1-119, as if fully set forth herein.

17. There is an actual case or controversy as to infringement of the patents-in-suit. CE's/Cecol's white light emitting LED products and processes do not and would not infringe, contribute to the infringement of, or induce the infringement of any valid and enforceable claim of the patents-in-suit.

COUNTERCLAIM COUNT II
Invalidity of the Patents-in-suit

18. CE/Cecol repeat the allegations of counterclaim paragraphs 1 through 15, and defense paragraphs 1-119, as if fully set forth herein.

19. There is an actual case or controversy as to the validity of claims in each of the patents-in-suit. Claims within each of the patents-in-suit are invalid for failure to satisfy one or more of the requirements of 35 U.S.C. §§ 101, et seq., including, but not limited to §§ 102, 103, and 112.

COUNTERCLAIM COUNT III
Unenforceability of the Patents-in-suit

20. CE/Cecol repeat the allegations of counterclaim paragraphs 1 through 15, and defense paragraphs 1-119, as if fully set forth herein.

21. There is an actual case or controversy as to the enforceability of the patents-in-suit. The '301, '247, '259, '780, '500, '162, and '283 patents are unenforceable due to inequitable conduct.

PRAYER FOR RELIEF

WHEREFORE, Citizen respectfully requests that the Court enter judgment:

a. Declaring that Plaintiffs take nothing in this Action;

b. Dismissing Plaintiffs' claims in their entirety and with prejudice;

c. Declaring that Plaintiff's patents-in-suit are invalid;

d. Declaring that CE's/Cecol's white light emitting LED products and processes do not and would not infringe, contribute to the

infringement of, or induce the infringement of any valid and enforceable claim of the patents-in-suit;

e. Declaring that the patents-in-suit are unenforceable, due to Osram's inequitable conduct;

f. Declaring this case "exceptional" under 35 U.S.C. §285 and awarding Citizen its attorneys' fees, costs, and expenses incurred in this action, and

g. Such other relief as the Court deems just and proper.

JURY DEMAND

Citizen demands a trial by jury on all issues so triable.

Respectfully submitted,

POTTER ANDERSON & CORROON LLP

By: */s/ David E. Moore*
Richard L. Horwitz (#2246)
David E. Moore (#3983)
1313 N Market Street, 6th Floor
P.O. Box 951
Wilmington, DE 19899
Tel: (302) 984-6000
Fax: (302) 658-1192
rhorwitz@potteranderson.com
dmoore@potteranderson.com

Attorneys for Defendants
Citizen Electronics Co., Ltd., and Cecol, Inc.

OF COUNSEL:

Richard D. Kelly
Steven P. Weihrouch
Daniel Pereira
Alexander E. Gasser
OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
1940 Duke Street
Alexandria, VA 22314
Tel: (703) 413-3000
Fax: (703) 413-2220

Dated: February 26, 2007

779975 / 31008

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CERTIFICATE OF SERVICE

I, David E. Moore, hereby certify that on February 26, 2007, the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification to the registered attorney(s) of record that the document has been filed and is available for viewing and downloading:

William J. Marsden, Jr.
Fish & Richardson P.C.
919 N. Market Street, Ste. 1100
P.O. Box 1114
Wilmington, DE 19801

I hereby certify that on February 26, 2007, I have Electronically Mailed the documents to the following:

Alan D. Smith
Charles H. Sanders
Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
smith@fr.com
Sanders@fr.com

/s/ David E. Moore
Richard L. Horwitz
David E. Moore
Potter Anderson & Corroon LLP
Hercules Plaza – Sixth Floor
1313 North Market Street
P.O. Box 951
Wilmington, DE 19899-0951
(302) 984-6000
rhorwitz@potteranderson.com
dmoore@potteranderson.com

776067 / 31008