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Paper 8
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KINGBRIGHT ELECTRONICS CO. LTD., KINGBRIGHT CORP.,
SUNLED CORP., KINGBRIGHT CO. LLC, SUNLED CO. LLC, and
SUNSCREEN CO. LTD.,
Petitioner,

v.

CREE, INC.,
Patent Owner.

Case IPR2015-00748
Patent 8,766,298 B2

Before KEVIN F. TURNER, BENJAMIN D. M. WOOD, and
ROBERT J. WEINSCHENK, *Administrative Patent Judges*.

WEINSCHENK, *Administrative Patent Judge*.

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

I. INTRODUCTION

Kingbright Electronics Co. Ltd., Kingbright Corp., SunLED Corp., Kingbright Co. LLC, SunLED Co. LLC, and Sunscreen Co. Ltd. (collectively, “Petitioner”) filed a Petition (Paper 3, “Pet.”) requesting an *inter partes* review of claims 1–17 of U.S. Patent No. 8,766,298 B2 (Ex. 1001, “the ’298 patent”). Cree, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”) to the Petition. We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

For the reasons set forth below, Petitioner does *not* demonstrate a reasonable likelihood of prevailing in showing the unpatentability of claims 1–17 of the ’298 patent. Accordingly, the Petition is denied, and no trial is instituted.

A. *Related Proceedings*

The parties indicate that the ’298 patent is at issue in the following district court cases: *Cree, Inc. v. Kingbright Electronics Co., Ltd.*, No. 14-cv-621 (W.D. Wis.); *Cree, Inc. v. Harvatek Corp.*, No. 14-cv-620 (W.D. Wis.); *Cree, Inc. v. Honeywell International Inc.*, No. 14-cv-737 (W.D. Wis.); and *Cree, Inc. v. Feit Electric Co., Inc.*, No. 15-cv-22 (W.D. Wis.). Pet. 1; Paper 6, 2. Patent Owner indicates that the ’298 patent also is at issue in the following International Trade Commission (“ITC”) investigation: *In re Light-Emitting Diode Products and Components Thereof*, Inv. No. 337-TA-3051. Paper 6, 2. Petitioner indicates that the ’298 patent claims

priority to U.S. Patent No. 7,910,938 B2, which is the subject of the petition for *inter partes* review in IPR2015-00747. Pet. 1.

B. *The '298 Patent*

The '298 patent relates to an encapsulating material for a light emitting diode (“LED”). Ex. 1001, col. 1, ll. 13–16. According to the '298 patent, when a conventional concave meniscus is used to encapsulate a side view surface mount LED, the concave shape becomes a disadvantage because it may reduce flux and color uniformity. *Id.* at col. 2, ll. 35–39. The '298 patent describes a surface mount LED package that differs from the conventional surface mount LED package discussed above because it includes a very slight convex or concave meniscus that is maintained within about 50 microns of the top surface of the LED package. *Id.* at col. 4, ll. 31–34. The '298 patent explains that a meniscus with this 50-micron dimension provides better uniformity than a conventional meniscus. *Id.*

C. *Illustrative Claim*

Claim 1 is independent and is reproduced below.

1. A light emitting diode (LED) package, comprising:
 - an LED with a Lambertian or near Lambertian emission pattern;
 - a package recess having reflective surfaces, said LED mounted in said package recess;
 - an encapsulant in said package recess and covering said LED, a top surface of said encapsulant including a curved meniscus that is within about 50 microns of a top surface of said package; and
 - a phosphor in said encapsulant, wherein said phosphor is proximate said LED.

Id. at col. 5, ll. 49–59.

D. *Evidence of Record*

Petitioner relies on alleged Applicant Admitted Prior Art (“AAPA”) and the following references (*see* Pet. 2–6):

Reference	Exhibit No.
U.S. Patent No. 5,998,925 (“Shimizu”)	Ex. 1003
U.S. Publication No. 2003/0008431 A1 (“Matsubara”)	Ex. 1004
U.S. Patent No. 6,610,563 B1 (“Waitl”)	Ex. 1005
U.S. Publication No. 2004/0046242 A1 (“Asakawa”)	Ex. 1006
JP Publication No. 2001-301230 (“Uemura”)	Ex. 1007
U.S. Publication No. 2006/0157828 A1 (“Sorg”)	Ex. 1008

E. *Asserted Grounds of Unpatentability*

Petitioner asserts that the challenged claims are unpatentable on the following grounds (*see* Pet. 10):

Claim(s)	Basis	Reference(s)
1, 3–6, 8, 9, 11–14, and 17	35 U.S.C. § 103(a)	AAPA
1–10 and 12–17	35 U.S.C. § 103(a)	Asakawa
1–17	35 U.S.C. § 103(a)	AAPA or Asakawa in view of Sorg, Matsubara, Uemura, Shimizu, Waitl, or Asakawa

II. ANALYSIS

A. *Claim Construction*

The claims of an unexpired patent are interpreted using the broadest reasonable interpretation in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, No. 2014-1301, 2015 WL 4097949, at *7–8 (Fed. Cir. July 8, 2015). On this record and for purposes of this decision, we determine that no claim terms require express construction.

B. *Asserted Grounds of Unpatentability*

1. *50-Micron Limitation*

Independent claim 1 recites “a top surface of said encapsulant including a curved meniscus that is within about 50 microns of a top surface of said package” (Ex. 1001, col. 5, ll. 55–57), independent claim 8 recites “said encapsulant having an encapsulant curved top surface with a highest or lowest portion that is within 50 microns of a package top surface” (*id.* at col. 6, ll. 13–15), independent claim 16 recites “a top surface of said encapsulant including a domed meniscus that is within about 50 microns of a top surface of said package” (*id.* at col. 6, ll. 42–44), and independent claim 17 recites “said encapsulant having a curved top surface with a highest or lowest portion that is within 50 microns of a package top surface” (*id.* at col. 6, ll. 57–59). We refer to the above limitations in the challenged independent claims collectively as the “50-micron limitation.”

Petitioner argues that the 50-micron limitation “effectively removes [an] innate physical property of fluid encapsulants from the public domain” and, thus, cannot preserve the validity of the challenged claims. Pet. 12 n.3. Petitioner’s argument is not persuasive. Petitioner does not provide a specific explanation or identify specific evidence showing that a fluid encapsulant innately forms a meniscus or dome with a top surface that is within about 50 microns of a top surface of an LED package. *Id.* Further, the ’298 patent indicates that conventional encapsulants do *not* form a meniscus or dome with a top surface that is within about 50 microns of a top surface of an LED package. Ex. 1001, col. 3, ll. 39–44, col. 4, ll. 25–34. As such, we are not persuaded that the 50-micron limitation represents an innate physical property of fluid encapsulants.

Petitioner also argues that the “specification uses the terms ‘very slight,’ ‘moderate(ly),’ or ‘modest’ dome interchangeably when referring to a domed meniscus of 50 microns or less.” Pet. 11, n.2 (citing Ex. 1001, col. 4, ll. 29–34, 60–63, col. 5, ll. 14–17). Petitioner contends that, as a result, prior art that shows a very slight, moderate, or modest meniscus teaches the 50-micron limitation. Pet. 11. We are not persuaded, however, that the ’298 patent creates an equivalence between the descriptors “very slight,” “moderate,” or “modest,” and the specific measurement of the 50-micron limitation. Thus, we are not persuaded that the disclosure of a very slight, moderate, or modest meniscus in the prior art teaches or suggests the 50-micron limitation.

2. *Obviousness of Claims 1, 3–6, 8, 9, 11–14, and 17 over AAPA*

Petitioner argues that claims 1, 3–6, 8, 9, 11–14, and 17 would have been obvious over AAPA. Pet. 10. We have reviewed Petitioner’s assertions and supporting evidence, and, for the reasons discussed below, Petitioner does *not* demonstrate a reasonable likelihood of prevailing in showing that claims 1, 3–6, 8, 9, 11–14, and 17 would have been obvious over AAPA.

Petitioner argues that Figure 1 of the ’298 patent is AAPA, and Figure 3 of the ’298 patent is an LED package that meets the 50-micron limitation. Pet. 15–16. According to Petitioner, the top surfaces of the encapsulants in Figures 1 and 3 “are identical in curvature and maximum departure from the top surface of the package.” *Id.* Petitioner argues that, as a result, Figure 1 of the ’298 patent teaches the 50-micron limitation of the challenged claims. *Id.* Patent Owner responds that Figures 1 and 3 of the ’298 patent are not drawn to scale and, thus, cannot be used for a dimensional comparison.

Prelim. Resp. 10–12, 24–25. Patent Owner also argues that the '298 patent indicates that the meniscus in Figure 1 is different than the meniscus in Figure 3. *Id.* at 25.

We agree with Patent Owner that Petitioner has not shown sufficiently that AAPA teaches the 50-micron limitation. Petitioner does not identify any teaching in the '298 patent that the top surface of the meniscus in Figure 1 is within about 50 microns of the top surface of the LED package. Pet. 15–16. Further, Petitioner's comparison of Figure 1 to Figure 3 is not persuasive because Petitioner does not provide a specific explanation or identify specific evidence showing that Figures 1 and 3 are drawn to scale.¹ *Id.*; see *Nystrom v. Trex Co.*, 424 F.3d 1136, 1149 (Fed. Cir. 2005) (“[U]nstated assumptions in prior art patent drawings cannot be the basis for challenging the validity of claims reciting specific dimensions not disclosed directly in such prior art.”). Petitioner's comparison of Figure 1 to Figure 3 also is not persuasive because the '298 patent expressly distinguishes the meniscus in Figure 1 from the meniscus in Figure 3. Specifically, the '298 patent states that Figure 1 shows a conventional LED package with a meniscus that reduces uniformity (Ex. 1001, col. 3, ll. 39–44), whereas Figure 3 shows an LED package with a meniscus that is maintained within about 50 microns of the top surface of the package so that it improves uniformity (*id.* at col. 4, ll. 25–34). For the foregoing reasons, Petitioner does *not* demonstrate a reasonable likelihood of prevailing in showing that the 50-micron limitation of the challenged claims would have been obvious over AAPA.

¹ Patent Owner, on the other hand, provides a specific explanation indicating that Figure 3 is *not* drawn to scale. Prelim. Resp. 10–12.

3. *Obviousness of Claims 1–10 and 12–17 over Asakawa*

Petitioner argues that claims 1–10 and 12–17 would have been obvious over Asakawa. Pet. 10. We have reviewed Petitioner’s assertions and supporting evidence, and, for the reasons discussed below, Petitioner does *not* demonstrate a reasonable likelihood of prevailing in showing that claims 1–10 and 12–17 would have been obvious over Asakawa.

Petitioner argues that Figure 2B of Asakawa shows a meniscus that is substantially similar to the meniscus in AAPA. Pet. 20–21. We agree with Patent Owner that Petitioner has not shown sufficiently that Asakawa teaches the 50-micron limitation. Prelim. Resp. 28. Petitioner does not identify any teaching in Asakawa that the top surface of the meniscus in Figure 2B is within about 50 microns of the top surface of the LED package. Pet. 20–21. Further, Petitioner’s comparison of Figure 2B of Asakawa to AAPA is not persuasive because Petitioner does not provide a specific explanation or identify specific evidence showing that Figure 2B of Asakawa is drawn to scale. *Id.*; see *Nystrom*, 424 F.3d at 1149. Petitioner’s comparison of Figure 2B of Asakawa to AAPA also is not persuasive because, as discussed above, Petitioner has not shown sufficiently that the meniscus in AAPA teaches the 50-micron limitation. *See supra* Section II.B.2. For the foregoing reasons, Petitioner does *not* demonstrate a reasonable likelihood of prevailing in showing that the 50-micron limitation of the challenged claims would have been obvious over Asakawa.

4. *Obviousness of Claims 1–17 over AAPA or Asakawa in view of Sorg, Matsubara, Uemura, Shimizu, Waitl or Asakawa*

Petitioner argues that claims 1–17 would have been obvious over AAPA or Asakawa in view of Sorg, Matsubara, Uemura, Shimizu, Waitl, or

Asakawa. Pet. 10. We have reviewed Petitioner's assertions and supporting evidence, and, for the reasons discussed below, Petitioner does *not* demonstrate a reasonable likelihood of prevailing in showing that claims 1–17 would have been obvious over AAPA or Asakawa in view of Sorg, Matsubara, Uemura, Shimizu, Waitl, or Asakawa.

Petitioner argues that Figure 4A of Sorg shows a slight or very slight meniscus and, thus, teaches the 50-micron limitation. Pet. 17. We agree with Patent Owner that Petitioner has not shown sufficiently that Sorg teaches the 50-micron limitation. Prelim. Resp. 26. Petitioner does not identify any teaching in Sorg that the top surface of the meniscus in Figure 4A is within about 50 microns of the top surface of the LED package. Pet. 17. Further, Petitioner's characterization of the meniscus in Figure 4A of Sorg as slight or very slight is not persuasive because Petitioner does not provide a specific explanation or identify specific evidence showing that Figure 4A of Sorg is drawn to scale. *Id.*; see *Nystrom*, 424 F.3d at 1149.

Petitioner argues that Figures 7A–7D of Matsubara show a moderate or modest dome and, thus, teach the 50-micron limitation. Pet. 17–18. We agree with Patent Owner that Petitioner has not shown sufficiently that Matsubara teaches the 50-micron limitation. Prelim. Resp. 26–27. Petitioner does not identify any teaching in Matsubara that the top surface of the dome in Figures 7A–7D is within about 50 microns of the top surface of the LED package. Pet. 17–18. Further, Petitioner's characterization of the dome in Figures 7A–7D of Matsubara as moderate or modest is not persuasive because Petitioner does not provide a specific explanation or identify specific evidence showing that Figures 7A–7D of Matsubara are drawn to scale. *Id.*; see *Nystrom*, 424 F.3d at 1149.

Petitioner argues that Figure 2 of Uemura shows a moderate or modest dome and, thus, teaches the 50-micron limitation. Pet. 19–20. We agree with Patent Owner that Petitioner has not shown sufficiently that Uemura teaches the 50-micron limitation. Prelim. Resp. 28. Petitioner does not identify any teaching in Uemura that the top surface of the dome in Figure 2 is within about 50 microns of the top surface of the LED package. Pet. 19–20. Further, Petitioner’s characterization of the dome in Figure 2 of Uemura as moderate or modest is not persuasive because Petitioner does not provide a specific explanation or identify specific evidence showing that Figure 2 of Uemura is drawn to scale. *Id.*; see *Nystrom*, 424 F.3d at 1149.

Petitioner argues that Figure 2B of Waitl shows a meniscus that is substantially similar to the meniscus in AAPA. Pet. 21–22. We agree with Patent Owner that Petitioner has not shown sufficiently that Waitl teaches the 50-micron limitation. Prelim. Resp. 29–30. Petitioner does not identify any teaching in Waitl that the top surface of the meniscus in Figure 2B is within about 50 microns of the top surface of the LED package. Pet. 21–22. Further, Petitioner’s comparison of Figure 2B of Waitl to AAPA is not persuasive because Petitioner does not provide a specific explanation or identify specific evidence showing that Figure 2B of Waitl is drawn to scale. *Id.*; see *Nystrom*, 424 F.3d at 1149. Petitioner’s comparison of Figure 2B of Waitl to AAPA also is not persuasive because, as discussed above, Petitioner has not shown sufficiently that the meniscus in AAPA teaches the 50-micron limitation. *See supra* Section II.B.2.

For the foregoing reasons, Petitioner does *not* demonstrate a reasonable likelihood of prevailing in showing that the 50-micron limitation

of the challenged claims would have been obvious over AAPA or Asakawa in view of Sorg, Matsubara, Uemura, Shimizu, Waitl, or Asakawa.

III. CONCLUSION

Petitioner does *not* demonstrate a reasonable likelihood of prevailing on its challenge to the patentability of claims 1–17 of the '298 patent as unpatentable under 35 U.S.C. § 103.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied, and no trial is instituted.

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