

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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JIAWEI TECHNOLOGY (HK) LTD., JIAWEI TECHNOLOGY (USA) LTD., SHENZHEN JIAWEI PHOTOVOLTAIC LIGHTING CO., LTD., ATICO INTERNATIONAL (ASIA) LTD., ATICO INTERNATIONAL USA, INC., CHIEN LUEN INDUSTRIES CO., LTD., INC. (CHIEN LUEN FLORIDA), CHIEN LUEN INDUSTRIES CO., LTD., INC. (CHIEN LUEN CHINA), COLEMAN CABLE, LLC, NATURE'S MARK, RITE AID CORP., SMART SOLAR, INC., and TEST RITE PRODUCTS CORP.,  
Petitioner,

v.

SIMON NICHOLAS RICHMOND,  
Patent Owner.

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Case IPR2014-00938  
Patent 7,429,827 B2

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Before WILLIAM V. SAINDON, JUSTIN T. ARBES, and  
BARRY L. GROSSMAN, *Administrative Patent Judges*.

SAINDON, *Administrative Patent Judge*.

DECISION

Final Written Decision  
35 U.S.C. § 318(a); 37 C.F.R. § 42.73

Granting Motion to Seal  
37 C.F.R. § 42.55

Denying-in-Part and Dismissing-in-Part Motions to Exclude  
37 C.F.R. § 42.64(c)

## I. BACKGROUND

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. With respect to the grounds asserted in this trial, we have considered the papers submitted by the parties and the evidence cited therein. For the reasons discussed below, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 24–30 and 35 of U.S. Patent No. 7,429,827 B2 (Ex. 1001, “the ’827 patent”) is unpatentable. In addition, we deny-in-part and dismiss-in-part Petitioner’s and Patent Owner’s Motions to Exclude Evidence, and we grant Petitioner’s Motion to Seal.

### A. Procedural History

Petitioner filed a revised Petition to institute an *inter partes* review (Paper 13, “Pet.”) of claims 24–35 of the ’827 patent on June 30, 2014. Pet. 1. Patent Owner filed a Preliminary Response. Paper 19 (“Prelim. Resp.”). We instituted an *inter partes* review of claims 24–30 and 35 of the ’827 patent on December 16, 2014. Paper 20 (“Dec. on Inst.”). Patent Owner then filed his Response to Petitioner’s Petition (Paper 34, “PO Resp.”), to which Petitioner filed its Reply (Paper 50, “Pet. Reply”). An oral hearing was held on September 21, 2015. Paper 68 (“Tr.”).

Patent Owner alleged that Petitioner failed to list all real parties in interest, and we authorized the parties to brief the issue. Paper 37 (Motion to Terminate); Paper 44 (Opposition); Paper 47 (Reply). We denied Patent Owner’s Motion to Terminate. Paper 57.

There are several outstanding motions decided herein. Patent Owner filed a Motion to Exclude Evidence. Paper 54 (“PO Mot. Excl.”); *see also* Paper 62 (Petitioner’s Opposition, “Pet. Opp. PO Mot. Excl.”); Paper 64 (Patent Owner’s Reply, “PO Reply PO Mot. Excl.”). Likewise, Petitioner filed a Motion to Exclude Evidence. Paper 56 (“Pet Mot. Excl.”); *see also* Paper 59 (Patent Owner’s Opposition, “PO Opp. Pet. Mot. Excl.”); Paper 63 (Petitioner’s Reply, “Pet. Reply Pet. Mot. Excl.”). Lastly, Petitioner filed a Motion to Seal. Paper 43 (“Pet. Mot. Seal”). Patent Owner did not file an opposition to Petitioner’s Motion to Seal.

### *B. Related Matters*

Petitioner states that Patent Owner has asserted a number of lawsuits against the Petitioner companies alleging infringement of the ’827 patent. Paper 18, 3–4; Paper 17, 3. Petitioner and Patent Owner also are involved in other *inter partes* reviews: IPR2014-00935 (Patent 8,089,370 B2) (instituted), IPR2014-00937 (U.S. Patent No. 8,362,700 B2, “the ’700 patent”) (denied), and IPR2014-00936 (U.S. Patent No. 7,196,477, “the ’477 patent”) (instituted). Pet. 5; Paper 17, 2. The ’700 patent is a continuation-in-part of the ’827 patent, which is a continuation-in-part of the ’477 patent.

### *C. The ’827 Patent*

The ’827 patent describes a solar powered light that produces light of varying color. Ex. 1001, 1:11–13. According to the ’827 patent, producing light of a varying color is known, and solar powered “garden lights” are known. *Id.* at 1:17–25. The claimed invention “overcome[s] or substantially ameliorate[s] at least one of the . . . disadvantages” of the prior

art, which includes “difficulty in adjusting the various lighting functions” and “not producing a uniform desired colour.” *Id.* at 1:26–35.

*D. Exemplary Claims*

Of the claims in this trial, claims 24, 27, and 35 are independent.

Claim 24 is reproduced below.

- 24. A lighting device to produce light of varying colour, said device comprising:
  - a lens generally enclosing a chamber;
  - a circuit including:
    - at least two lamps of different colours to produce a desired colour, the lamps being mounted to direct light into said chamber;
    - connections for at least one rechargeable battery to power the circuit;
    - a solar cell mounted on a surface so as to be exposed to light and operatively associated with the connections to charge the battery;
    - a light sub-circuit having an integrated circuit for controlling said lamps to produce lighting effects, and a selection switch, said selection switch being connected to said integrated circuit and operable to select a desired lighting effect; and
  - a volatile memory retained for a period of time and associated with said integrated circuit, said memory causing operation of said circuit to produce said lighting effects.

*E. Prior Art and Asserted Grounds*

The following grounds were instituted:

| References                                                                        | Basis under 35 U.S.C. | Claims In Trial           |
|-----------------------------------------------------------------------------------|-----------------------|---------------------------|
| Chliwnyj, <sup>1</sup> Wu, <sup>2</sup> Pu, <sup>3</sup> and Dowling <sup>4</sup> | § 103                 | 24–26                     |
| Chliwnyj and Wu                                                                   | § 103                 | 27–29 and 35 <sup>5</sup> |
| Chliwnyj, Wu, and Lau <sup>6</sup>                                                | § 103                 | 30                        |

II. MOTIONS

*A. Petitioner’s Motion to Seal*

Petitioner moves to seal Exhibits 1016 and 1029, portions of Exhibits 1019 and 1040–42, as well as portions of its Opposition to Patent Owner’s Motion to Terminate (Paper 44) and Exhibit 1044. Pet. Mot. Seal 2. Petitioner proposes entry of the Default Protective Order. *Id.* at 5; *see Office Trial Practice Guide*, 77 Fed. Reg. 48,769–71 (Aug. 14, 2012). Petitioner has provided redacted versions of Exhibits 1019, 1040–1042, and 1044. Pet. Mot. Seal 2.

The Exhibits generally relate to an internal corporate resolution, listings of financial account numbers, and invoices for attorney fees. *See* Pet. Mot. Seal 3–4. The redacted versions of these documents, upon which

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<sup>1</sup> U.S. Patent No. 5,924,784, issued July 20, 1999 (Ex. 1005).

<sup>2</sup> U.S. Patent Application Publication No. US 2003/0201874 A1, published Oct. 30, 2003, filed Apr. 24, 2002 (Ex. 1006).

<sup>3</sup> Chinese Patent Publication No. CN 2522722Y, published Nov. 27, 2002 (Ex. 1008) (certified translation).

<sup>4</sup> U.S. Patent No. 7,064,498 B2, issued June 20, 2006, filed Mar. 13, 2001 (Ex. 1010).

<sup>5</sup> We denied review of claims 31–34. Dec. on Inst. 16–17.

<sup>6</sup> U.S. Patent No. 6,431,719 B1, issued Aug. 13, 2002 (Ex. 1011).

we relied in our denial of Patent Owner's Motion to Terminate (Paper 57), sufficiently disclose the basis for our decision, so there is little public interest in making the non-redacted versions publicly available.

Accordingly, Petitioner has shown good cause for sealing Exhibits 1016 and 1029, and portions of Exhibits 1019, 1040–42, and 1044. We do not seal Paper 44 because it was filed publicly, which we deem a withdrawal of the Motion as to this paper.

The parties are reminded that confidential information that is subject to a protective order ordinarily becomes public 45 days after final judgment in a trial. *Office Patent Trial Practice Guide*, 77 Fed. Reg. at 48,761. After final judgment in a trial, a party may file a motion to expunge confidential information from the record prior to the information becoming public. *See* 37 C.F.R. § 42.56.

*B. Patent Owner's Motion to Exclude  
Evidence*

Patent Owner first argues that portions of Exhibits 1047 and the entirety of 1048–1063 should be excluded because they are “exhibits that could reasonably have been, but were not, included in an earlier filing.” PO Mot. Excl. 2–3. Patent Owner's argument is that, essentially, because it was possible that these documents could have been filed earlier, they cannot later be filed. *See id.* at 1–4. We reject such a literal reading of 37 C.F.R. § 42.23(b). We have reviewed the arguments in Petitioner's Reply and Petitioner's citations therein to Exhibits 1047–1063, and are persuaded that Petitioner presents arguments and evidence that are properly responsive to Patent Owner's arguments and evidence. We find this to be a proper use of Reply exhibits and deny Patent Owner's Motion on this basis.

Patent Owner then argues that paragraphs 26 and 27 of Exhibit 1047 should be excluded “because they include hearsay statements and [Petitioner’s declarant, Peter W. Shackle, Ph.D.,] offers factual observations without laying a proper foundation or otherwise demonstrating personal knowledge of the recited facts.” PO Mot. Excl. 4. Patent Owner argues Exhibits 1048–1057 should also be excluded for similar reasons. *Id.* at 5. Exhibits 1048–1057 are profiles obtained from websites such as LinkedIn and are offered to show the educational background of various inventors. *See* Ex. 1047 ¶¶ 26–27. Because we do not rely on Exhibits 1047–1063, we dismiss this aspect of the motion as moot.

Patent Owner then argues that Exhibits 1058–1060, which contain dictionary definitions of the word “varying,” should be excluded under Federal Rules of Evidence 401 and 403 “because they lack any probative value” and “are unduly prejudicial to Patent Owner.” PO Mot. Excl. 5–6. Given that the term “varying” appears in the claims and that Patent Owner argues a construction for the term in his Response (PO Resp. 15–19), these definitions have probative value. Further, Patent Owner has not offered a cogent explanation as to how these dictionary definitions are unduly prejudicial. We do not exclude Exhibits 1058–1060.

Patent Owner argues that various excerpts of the testimony of his declarant, Alfred Ducharme, Ph.D., should be excluded from Exhibit 1046. PO Mot. Excl. 6–8. Reviewing Patent Owner’s explanation, it appears that he is simply arguing that Dr. Ducharme’s testimony should not be treated as standing for the notions upon which Petitioner argues. *See, e.g., id.* at 7 (“Petitioner cited the above excerpt as support for [a position]. Not only do the cited excerpts offer no support for that characterization, but the

testimony . . . is inadmissible because the question . . . is ambiguous, argumentative, and misleading.”). We will make our own judgments as to what extent, if any, Dr. Ducharme’s testimony supports Petitioner’s positions and to what extent the answer given is based on an unclear or ambiguous question, to the extent we rely on that testimony at any point in our analysis below. Accordingly, we do not exclude the testimony.

In view of the above, we deny-in-part and dismiss-in-part Patent Owner’s Motion to Exclude.

### *C. Petitioner’s Motion to Exclude*

Petitioner first moves to exclude Exhibits 2042, 2050, 2052, 2054, and 2062. Pet. Mot. Excl. 2–3. This evidence was provided in support of Patent Owner’s Motion to Terminate, which we denied on August 21, 2015 (Paper 57). This evidence was not considered and the Motion was denied. We dismiss Petitioner’s Motion as to these Exhibits as moot.

Petitioner next moves to exclude portions of Dr. Shackle’s testimony in Exhibits 2022 and 2023 as confusing, misleading, and/or irrelevant. Pet. Mot. Excl. 4–7. We decline to exclude this evidence. This panel acts as both the gatekeeper of evidence and as the weigher of evidence. Rather than excluding evidence that is allegedly confusing, misleading, and/or irrelevant, we will simply not rely on it or give it little weight, as appropriate, in our analysis. Accordingly, we deny-in-part and dismiss-in-part Petitioner’s Motion to Exclude.

### *D. Patent Owner’s Motion for Observation*

Patent Owner filed a Motion for Observation (Paper 55) on the cross-examination of Dr. Shackle, which took place after Petitioner filed its

Reply. Petitioner filed a Response (Paper 60). We have considered Patent Owner's observations and Petitioner's responses in rendering our decision.

### III. PATENTABILITY ANALYSIS

#### *A. The Level of Ordinary Skill in the Art*

The parties differ significantly in their positions as to the level of ordinary skill in the art for the '827 patent. We have reviewed the arguments of Patent Owner (PO Resp. 3–14) and Petitioner (Pet. 7; Pet. Reply 2–7).

In general, Patent Owner seeks to define the person of ordinary skill in the art as a person having little if any technical skill. PO Resp. 8. According to Patent Owner, this person is focused on the “physical ornament[al]” design of the products, but not the “relatively unsophisticated electrical circuits.” *Id.* at 5–6; *see also id.* at 6 (characterizing a person of ordinary skill in the art as having “limited mechanical and electrical skills” and “only know[ing] the basics of electrical components and circuits that are commonly used in solar garden lights”). To that end, a person of ordinary skill in the art, according to Patent Owner, only has “the ability to recognize how a pre-designed circuit may operate and the ability to combine such a circuit into a pre-designed solar garden light . . . making only simplistic changes to the exterior aesthetic of the product.” *Id.* at 4.

Petitioner argues that a person of ordinary skill in the art has technical knowledge, such as an electrical engineering background or equivalent experience. Pet. 7. In its Reply, Petitioner points out that patent specifications are addressed to a person of ordinary skill in the art, and that Patent Owner's proposed person of ordinary skill in the art would seemingly

be unable to understand the '827 patent (particularly the circuit diagram in Figure 9) and the art of record. Pet. Reply 3–4.

In determining the level of ordinary skill in the art, a court may consider various factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir.1986)). The prior art itself is often the best guide as to the level of skill in the art. *Id.*; *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

The '827 patent, Chliwnyj, Wu, Lau, and Pu include circuit diagrams. The parties seem to be in agreement that a person of ordinary skill in the art would be capable of reading the diagrams and understanding what function(s) they perform, at least at some level. PO Resp. 4 (a person of ordinary skill in the art has “the ability to recognize how a pre-designed circuit may operate”); Pet. Reply 3 (a person of ordinary skill in the art “would [have been] able to understand the patent’s descriptions and drawings”). Patent Owner’s position, however, seems to be that although a person of ordinary skill in the art would recognize what these circuits do, he or she would be unable to make any modifications to those circuits and would only be capable of taking them whole cloth and inserting them into another device. Patent Owner would seemingly limit the person of ordinary skill in the art to ornamental design changes only. We reject the notion that a person of ordinary skill in the art would only be capable of making ornamental design variations. Under Patent Owner’s proposed level of skill,

any functional modification would be beyond the level of ordinary skill in the art and render the modified device patentable (so long as it was not anticipated); this proposed level of skill is so low it eviscerates the notion of obviousness.

Instead, upon review of the record before us, we find that a person of ordinary skill in the art is able to comprehend what is being shown in the prior art *and* has some ordinary level of creativity with respect to their modification. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (“A person of ordinary skill is also a person of ordinary creativity, not an automaton”). We agree with Petitioner that a person of ordinary skill in the art at the time of the ’827 patent<sup>7</sup> would have had a graduate degree in electrical or electronics engineering or physics with experience in circuit design, or a bachelor’s degree in electrical or electronics engineering or physics with at least two years industrial experience and experience in circuit design, and apply that level of skill for purposes of this Decision. *See* Ex. 1002 ¶ 36.

*B. Dr. Shackle is Qualified to Testify to the  
Level of Ordinary Skill in the Art*

Patent Owner argues that Petitioner’s declarant, Dr. Shackle, is not qualified to testify as to the level of ordinary skill in the art. PO Resp. 14–15. Patent Owner argues that, for example, he “has never supervised engineers in the design of solar lights.” *Id.* at 14. Patent Owner argues we should give his declarant, Dr. Ducharme, more weight because Dr.

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<sup>7</sup> The application issuing as the ’827 patent was filed in April 2005 and is a continuation-in-part of the application, filed in February 2004 and claiming the benefit of a foreign application filed in December 2003, that issued as the ’477 patent.

Ducharme is allegedly better qualified. *Id.* We weigh competing testimony of witnesses on an observation-by-observation basis, based on the witness’s skills and experience, as well as the reasoning and evidence they offer with respect to that particular observation. Further, we are not persuaded that Dr. Shackle would not have been a person of ordinary skill in the art at the time of the invention simply for not being a supervisor of engineers designing solar lights. Instead, we find that Dr. Shackle has ample experience in the field of lighting devices to testify in this proceeding. *See* Ex. 1002 ¶¶ 3–5; Ex. 1047 ¶¶ 30–41; *see also* Pet. Reply 7–8 (persuasively arguing why Dr. Shackle is qualified to testify).

### C. Claim Construction

We interpret the claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1276 (Fed. Cir. 2015). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

We construed the terms “desired colour”<sup>8</sup> and “varying colour” in our Decision on Institution as follows:

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<sup>8</sup> The written description of the ’827 patent generally, but not always, uses the British spelling, “colour.” *See* Ex. 1001, Abstract, claims 28, 31, 32, 35 (spelling “color”). We use the word “color” unless quoting the claim language.

“desired color”: a color that is desired by the user or intended by the designer;

“varying colour”: a perceptible changing of color over time.  
Dec. on Inst. 6–9.

The term “desired colour” is not at issue in this Decision; we do not perceive any reason or evidence that now compels any deviation from that prior interpretation. Patent Owner proposes a construction of “lamp” (PO Resp. 19) but we do not construe this term because it is unnecessary to the outcome of this proceeding. We thus turn to Patent Owner’s proposed constructions of “varying colour” and “switch being accessible by a user.”

1. “*varying colour*”

Patent Owner disagrees with our prior construction of “varying colour.” PO Resp. 15–19. Patent Owner argues that the term should be construed as “color that changes over time by varying the intensity of one or more of the lamps with time.” *Id.* at 16.

In our Decision on Institution, we did not adopt Petitioner’s or Patent Owner’s proposed constructions of this term because we determined that both proposed constructions focused too much on how the varying color was created rather than what was varying color. Dec. on Inst. 6–9. Or, to put it another way, we determined that the claims required a particular observable phenomenon (varying color) from a particular structure (a circuit having at least two lamps) but did not limit the manner in which the structures were operated to achieve that result. As we stated then, we declined to incorporate any particular way to create varying color because the specification of the ’827 patent does not so limit the term. *Id.* at 7–8. For

that reason, we construed “varying colour” as “a perceptible changing of color over time.” *Id.* at 8.

Patent Owner argues that we should construe the term the same as it was construed in a district court action, but Patent Owner offers no explanation as to why.<sup>9</sup> See PO Resp. 16. Patent Owner previously argued that we should *not* adopt the district court’s construction, but rather a modified version thereof, because that construction “is not binding on Patent Owner because it was *based upon a stipulation* by the parties in [that] case.” Prelim. Resp. 22 n.14 (emphasis added).<sup>10</sup> In either event, district court claim construction standards are different from ours and, although it is often helpful to consider a district court’s analysis and construction of a term, the decision is less helpful here because the parties to that action stipulated to the term’s meaning. Nevertheless, we have considered the evidence before us regarding the term’s interpretation in the district court proceeding. See n. 9.

Patent Owner then sets forth a number of bullet points that appear to discuss the testimony of Petitioner’s declarant, Dr. Shackle. The first point, PO Resp. 16–17, discusses the word “varying” and how it is a present participle, implying that Patent Owner is arguing that the term refers to an action. The claims are not method claims, however. The word “varying”

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<sup>9</sup> Patent Owner cites Exhibit 2005, but that is merely the *Markman* order listing the claim constructions; no analysis is present. The *Markman* transcript provided (Ex. 2006) is only an excerpt of one page and, without appropriate context, is not useful to us. The memorandum opinion (Ex. 2007) is a decision by the court to deny summary judgment of invalidity; the discussion of “varying colour” is limited to application of the stipulated construction.

<sup>10</sup> Petitioner was not a party to that suit. Prelim. Resp. 22.

modifies the term “colour,” and “varying colour” is claimed as the *output* of a circuit having lamps of different colors. There is nothing from the context of the claim or any rule of grammar that mandates that a present participle be an action. Indeed, as in the claim here, present participles often act as adjectives.<sup>11</sup> For example, Petitioner, who argues the prior construction is correct, offers a thesaurus entry showing “varying” as a modifier word, having synonyms including “differing” and “changing.” Ex. 1058, 3; Pet. Reply 10. Our construction of “varying colour” as “a perceptible changing of color over time” is consistent with this use of the term.

We have reviewed the remainder of Patent Owner’s argument and do not find it persuasive for Patent Owner’s offered construction. See PO Resp. 17–19. Thus, for the reasons expressed herein and in our Decision on Institution, we interpret “varying colour” to mean a perceptible changing of color over time.

We further note that Patent Owner states that he “will apply the Board’s construction,” and makes similar statements in another paper. *Id.* at 18; PO Opp. Pet. Mot. Excl. 2 (“the Board in its Decision chose its own construction of varying color . . . which for purposes of the IPR proceeding neither party contested”). Although we take such stances by the parties into consideration,<sup>12</sup> preliminary constructions in Decisions on Institution are not final and agreements by the parties as to claim construction are not binding on us.

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<sup>11</sup> Exciting book, boring flight, differing opinions, interesting argument, etc.

<sup>12</sup> For example, as an indication that the prior construction was correct, was not meaningfully incorrect, or is no longer relevant to the outcome of the proceeding.

2. “switch being accessible by a user”

Independent claims 27 and 35 require a “switch being accessible by a user” to control power to the lamps. We did not construe this term in our Decision on Institution. Patent Owner proposes that the term should be construed as “the switch is accessible to the user without substantial effort, tools, or destruction.” PO Resp. 20–21. According to Patent Owner, a “switch being accessible by a user means that the switch is ‘obtainable’ and ‘available’ to the user.” *Id.* Petitioner proposes “[a switch that is] obtainable or reachable by the user without substantial effort or destroying the device.” Pet. Reply 11–13. The main distinction between the parties’ proposed interpretations is over the issue of whether tools can be used to access an accessible switch. We adopt the agreed-upon aspects of the parties’ constructions, as supported by the language of the claims and the specification. As to whether tools are permitted, we decline to include such a recitation in the interpretation, because the use of a tool may or may not be considered “substantial effort” or causing “destruction” of the device, depending on how the tool is used. Applying the broadest reasonable interpretation in light of the Specification, we interpret “switch being accessible by a user” to mean a switch that is obtainable or reachable by a user without substantial effort or destroying the lighting device.

*D. Overview of the Asserted Prior Art*

*a. Chliwnyj (Ex. 1005)*

Chliwnyj discloses a microprocessor-based simulated electronic flame. Ex. 1005, 5:11–12. The light-emitting diodes (LEDs) are a plurality of colors to “enhance[] the effect of flame motion” “due to color changes.” *Id.* at 5:15–17, 5:21–25, 6:27–37. The LEDs produce a realistic flame effect

by continuously, rather than abruptly, changing the frequency of LED modulation. *Id.* at 7:55–56. The flame effect can mimic a stable flame using small frequency changes, and a flame in the wind using large, random frequency changes. *Id.* at 8:16–34. The individual LEDs are diffused to blend the different colors of light together to give the flame effect. *Id.* at 8:66–9:10.

*b. Wu (Ex. 1006)*

Wu discloses a solar-powered illumination device. Ex. 1006 ¶ 2. Light-emitting elements provide different colors by mixing various light colors. *Id.* ¶ 22.

*c. Pu (Ex. 1008)*

Pu discloses a solar-powered illumination device. Ex. 1008, 4.<sup>13</sup> The device cycles through various colors, and a user can lock the device to emit only one of those colors by activating a switch when that color is emitted. *Id.* at 5.

*d. Dowling (Ex. 1010)*

Dowling discloses a variety of applications for programmable LEDs. Ex. 1010, 4:6–8. A program stored in memory and executed by a processor controls the LEDs. *Id.* at 4:65–67. Dowling discloses how pulse-width modulation is known to vary the intensity of various LEDs to mix them together to form various colors. *Id.* at 6:11–26. In this manner colors can be faded (washed) from one to another. *Id.* at 6:32–35; *see also id.* at 14:12–15 (allowing the colors to fade according to any desired color combination, such as blue and yellow for a “Michigan” color wash). The device acting in such a manner may be very small and powered on batteries. *Id.* at 8:31–42.

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<sup>13</sup> Our citations to Pu are to the page numbers stamped on the exhibit.

*e. Lau (Ex. 1011)*

Lau discloses a night light that “smoothly and continuously chang[es] color” using red, green, and blue LEDs. Ex. 1011, 3:13–44. In one mode of operation, a user can press a switch to “freeze” the light to the currently displayed color. *Id.* at 3:51–59.

*E. The Chliwnyj, Wu, Pu, and Dowling  
Ground: Claims 24–26*

Petitioner addresses claims 24–26 in a claim chart. Pet. 18–29. In general, Petitioner cites to Chliwnyj for the limitations directed to solar-powered lamps, desired colour, and varying colour (*id.*); Wu for the lamps being mounted to direct light into the chamber (*id.* at 21–22); Pu for the switch to select a desired light effect (*id.* at 24–25); and Dowling for a volatile memory to cause the circuit to operate to produce the lighting effects (*id.* at 25–28).<sup>14</sup> Petitioner provides various reasons why it would have been obvious to include the identified features of Wu, Pu, and Dowling with the lamp of Chliwnyj. *Id.* at 29–31. For example, Petitioner asserts that it would have been obvious to a person of ordinary skill in the art at the time of the invention to “plug[] together the different known features of the available lighting products.” *Id.* at 31 (citing Ex. 1002 ¶ 131). Petitioner describes how Wu and Pu teach producing and selecting certain lighting effects, and explains how Dowling shows a feature likely present in Chliwnyj anyway (volatile memory). *Id.* at 29–30 (“It would have been obvious to one of ordinary skill in the art to look to the combination of

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<sup>14</sup> Although not cited for this position in its Petition and not relied upon herein, we note that Dowling also teaches selecting a desired lighting effect. *See, e.g.*, Ex. 1010, 7:8–62.

Chliwnyj and Wu in combination with Pu to provide the predictable results of having a solar lighting device with circuitry that varies color, circuitry that produces a desired lighting effect, and an operable switch to allow a user to select a desired lighting effect.”). Petitioner’s analysis is supported by the testimony of Dr. Shackle and is persuasive.

Patent Owner sets forth a number of arguments addressing this ground at the same time as the next ground (pertaining to claims 27–29 and 35 based on Chliwnyj and Wu). PO Resp. 21–31. Unlike claim 27, however, claims 24–26 challenged in this ground do not include a limitation directed to a “switch being accessible by a user.” Most of Patent Owner’s arguments are directed to that unclaimed limitation. *See id.* Patent Owner’s argument specifically directed to claim 24 is that Chliwnyj and Pu would not have been combined. *Id.* at 29–31. Some of this argument, however, is directed to an accessible switch, and is unpersuasive for being directed to a limitation not in the claims. *Id.* at 30 (“There would have been no reason . . . to allow users to use an ‘accessible’ switch”). Another aspect of Patent Owner’s argument is that Pu, directed to a solar garden light, is “fundamentally different” from the relaxation lighting device of Chliwnyj. *Id.* at 29. Patent Owner continues, “[i]t would be completely against the teachings of Chliwnyj to modify [it] to allow selection of a ‘desired lighting effect.’” *Id.* at 30 (citing Ex. 2021 ¶ 95).<sup>15</sup> Dr. Ducharme’s testimony, in turn, is nearly verbatim Patent Owner’s argument, and is premised, in part, upon the

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<sup>15</sup> Patent Owner cites to “Duchm. Dec.” but provides in evidence more than one such declaration from Dr. Ducharme, Exhibits 2004 and 2021. Patent Owner appears to be citing to Exhibit 2021 in his brief, based on context.

accessible switch feature not found in these claims. *See* Ex. 2021 ¶ 95.

Thus, this argument is unpersuasive.

To the extent Patent Owner is arguing that Pu is not analogous art, we consider this argument unpersuasive. Pu is directed to a solar garden light, and is within the same field of endeavor as the '827 patent. In addition, Chliwnyj is in the '827 patent's field of endeavor. Ex. 1001, 1:10–13 (defining the field as including “solar powered lights”); Ex. 1005, Fig. 2 (depicting a solar powered light). Due to the overlap in technology, Chliwnyj and Pu would also address similar problems in the field, such as how to implement circuits containing similar components (batteries, LEDs, solar cells, microcontrollers, etc.). *See, e.g., In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992) (“If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection.”). Accordingly, we find that Chliwnyj and Pu are analogous art to the '827 patent. Likewise, we are not persuaded that Chliwnyj and Pu are so different from one another, as Patent Owner alleges, because both are in the same field of endeavor.

Patent Owner next argues that incorporating Pu's switch would be “against the teaching of Chliwnyj to produce a continuously changing and non-repetitive lighting effect that conforms with a grave or memorial setting.” PO Resp. 31. Petitioner's proposed combination is to take the switch in Pu, which allows for selection of a particular lighting effect, and to add that to Chliwnyj's device to allow for selection of a particular lighting effect. Pet. 29–30 (“Pu's disclosure of an operable switch for selecting a desired lighting effect,” “Chliwnyj and Wu in combination with Pu to

provide . . . circuitry that produces a desired lighting effect, and an operable switch to allow a user to select a desired lighting effect”). There is nothing in the combination, as we understand it, that precludes the selected lighting effect from being “continuously changing and non-repetitive,” as Patent Owner seems to believe. PO Resp. 30. Instead, the switch would simply allow selection of a lighting effect, whatever that may be.<sup>16</sup> Indeed, the relaxation lighting device in one embodiment of Chliwnyj already has a keypad for selection of “some parameters of the simulation,” such that adding a button to allow selection of a desired lighting effect, to the extent it is not already disclosed in Chliwnyj, is merely following the lead of Chliwnyj’s disclosure. Ex. 1005, 14:11–20; Pet. Reply 19–20 (discussing how Chliwnyj teaches a user interface and multiple lighting effects). Even if the combination were to make the selection of a desired lighting effect a selection of a single color, as Patent Owner appears to believe, there is nothing in that combination that would preclude continuously changing and/or non-repetitive patterns of that color of light. *See also, e.g.*, Ex. 1005, 1:65–2:9 (discussing prior art single-color simulated candles having simulated flicker).

Lastly, we disagree that any modification to Chliwnyj that makes it less of a “grave or memorial setting,” as Patent Owner characterizes it (PO Resp. 30), would be against the teaching of Chliwnyj. The intended purpose of Chliwnyj, in Patent Owner’s view, is essentially *acting in the exact manner as disclosed in Chliwnyj*. This line of reasoning, if it were

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<sup>16</sup> For example, Chliwnyj teaches various flame display modes, such as “slow rolling,” “candle in the wind,” and “occasional wind disturbances.” Ex. 1005, 8:16–34.

persuasive, would preclude virtually any modification to any prior art device. We are not persuaded that the intended purpose case law is intended to reach into ornamental factors (e.g., a grave or memorial setting) or to require satisfying each of the prior art inventor's wishes for how the device should be used. Instead, the correct focus is on the technical feasibility of the modification—would such a modification actually work? *See Tec Air Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (“If when combined, the references ‘would produce a seemingly inoperative device,’ then they teach away from their combination.” (quoting *In re Spinnoble*, 405 F.2d 578, 587 (CCPA 1969))); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (discussing how, if a prior art filter were flipped upside down, the device would be physically incapable of working because it relies on gravity and a certain orientation to work). We have no evidence that the combination asserted by Petitioner is technically infeasible, unpredictable, or taught away from in the art. In addition, Chliwnyj teaches many different embodiments, not all of which are a “grave or memorial setting.” *See, e.g.*, Ex. 1005, 2:27–29 (electronic flame), 13:33–34 (self-contained flame-simulation light bulb), 14:11 (relaxation lighting device). Accordingly, this argument is unpersuasive.

Reviewing the record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 24–26 would have been obvious to a person of ordinary skill in the art at the time of the invention.

*F. The Chliwnyj and Wu Ground: Claims  
27–29 and 35*

Petitioner asserts that the subject matter of claims 27–29 and 35 would have been obvious in view of Chliwnyj and Wu. Pet. 31–43. Specifically, Petitioner asserts that Chliwnyj describes each feature of the claims except for a lens (*id.* at 31–32, 40), spike/post (*id.* at 32–33, 39–40), and circuit to turn on the light at low light levels (*id.* at 36–37), which Petitioner asserts are described by Wu. *See id.* at 41–43. Petitioner reasons that it would have been obvious to include a lens and spike/post in the lighting device of Chliwnyj because it was well-known to mount lighting devices in that manner to illuminate an area. *Id.* at 41–42. Petitioner also asserts that Chliwnyj discloses a user-accessible switch. *Id.* at 32.

Patent Owner appears to argue this ground together with the previous ground. PO Resp. 21–31. Although claim 27 does have the “switch being accessible by a user” limitation, Patent Owner’s arguments are directed to Pu, which is not included in this ground. *Compare id.* at 24 (“Petitioner cites Pu as teaching the claimed accessible switch of Claims 27 . . . and 35”) *with* Pet. 31 (setting forth “Ground 2: Claims 27–29 and 31–35 are rendered obvious by Chliwnyj in view of Wu” (emphasis omitted)); *see also* Dec. on Inst. 20 (ordering a trial on claims 27–29 and 35 in view of Chliwnyj and Wu); *but see* Pet. Reply 14 (arguing that claims 24–26, 27–29, and 35 are obvious in view of Chliwnyj and Pu). The ground of Chliwnyj and Pu for claims 27–29 and 35 is not before us. As such, we address Patent Owner’s arguments to the extent they are applicable to the Chliwnyj/Wu ground before us.

Patent Owner argues that switch placement is “a functional or technologic consideration” because it turns on and off the device. PO Resp. 22–23. Patent Owner then argues that switch placement is a factor affecting “ergonomics, function, reliability, durability, sustainability, cost, production, energy, and safety.” *Id.* at 23. Patent Owner notes that Petitioner’s declarant, Dr. Shackle, acknowledges that there are design considerations in switch placement, and argues that “Dr. Shackle provides no analysis of weighing of factors that would have been relevant to a person skilled in the art in making the purported design choice.” *Id.* Patent Owner also acknowledges that “[p]ersons of ordinary skill can move a switch from one location to another when designing a solar garden light,” but contends that a skilled artisan would have needed a specific reason to make the switch user-accessible. *Id.* at 24. Patent Owner then argues that the switch in one embodiment of Chliwnyj is hidden and that Petitioner does not explain why it would have been obvious to modify the switch’s location. *Id.* at 25–27.

Petitioner, on the other hand, asserts that the switch in Chliwnyj is user-accessible as required by independent claims 27 and 35. Pet. 32, 41. Petitioner relies on a passage in Chliwnyj that states that the batteries “may be housed in a battery holder 35 and connected through a switch to the circuit card 29, all of which may be located inside the hollow base 27 [shown in Figure 4].” Ex. 1005, 10:66–11:3. Figure 4 of Chliwnyj is reproduced below:

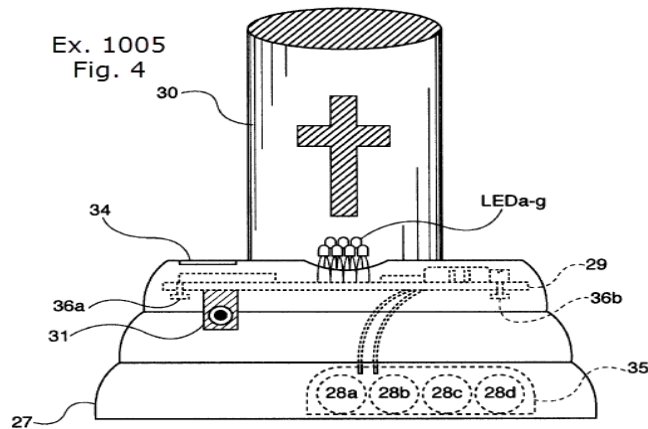


Figure 4 of Chliwnyj depicts a memorial candle flame simulation embodiment, including hollow base 27 that houses electrical circuit 29 and battery holder 35. *Id.* at 10:39–11:9. Battery holder 35 is depicted adjacent to the bottom of hollow base 27 and, although a switch is described as connecting battery holder 35 to electrical circuit 29, no such switch is depicted.

Patent Owner argues that Petitioner’s declarant, Dr. Shackle, testifies that Chliwnyj teaches “keeping the switch hidden.” PO Resp. 25–26 (citing Ex. 2022, 99:23–25).<sup>17</sup> Dr. Shackle indeed answers “Yes” to Patent Owner’s question, “Chliwnyj teaches keeping the switch hidden, does he not?” Ex. 2022, 101:16–18. Dr. Shackle also agrees that a hidden switch “would prevent ready access to being switched off.” *Id.* at 101:19–21. It is not clear to us on what disclosure of Chliwnyj Dr. Shackle relies to say Chliwnyj teaches a hidden switch, or what Dr. Shackle understands as

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<sup>17</sup> Patent Owner’s citations to Dr. Shackle’s testimony, Exhibit 2022, appear to be to a different pagination of the document. For example, the cited passage here reads, in full:

[23] switch, aren’t they?

[24] A: Yes.

[25] Q. And whether the switch is to be exposed to the

“hidden” in the context of the cited exchange during deposition. The only relevant mention of “switch” in Chliwnyj we find is in the description of Figure 4 cited above, which fails to specify exactly where the switch is located. In addition, Chliwnyj teaches an embodiment having a user-accessible keypad for the purpose of allowing a user to control the device (similar to a user controlling the device via an on/off switch). Ex. 1005, 14:11–20. Accordingly, we do not credit Dr. Shackle’s testimony on this point for failing to disclose the factual basis upon which he relies. Instead, we find that a person of ordinary skill in the art would not have read Chliwnyj as requiring a hidden switch or a switch not accessible by a user.

Patent Owner’s argument that Petitioner’s declarant, Dr. Shackle, did not consider the “weighing of factors” that would lead to the purported design choice (switch location) also is not persuasive. As we understand it, Petitioner’s ground asserts that Chliwnyj teaches the user-accessible switch. *See* Pet. 32, 41. Thus, Petitioner’s ground does not rely on a design choice or a weighing of factors.

Notwithstanding, we recognize that the disclosure of Chliwnyj relied on by Petitioner is not explicit in terms of how the user would interact with the switch. *See* Pet. 32. It takes no great amount of imagination to envision, however, that if one were to pick up the device shown in Figure 4 of Chliwnyj, the bottom of the base would have a door for the battery compartment and a switch to turn on the light. *See, e.g.*, Ex. 1047 ¶ 55. Otherwise the user would not be able to change the batteries or turn the device on or off. User-accessible switches and controls are known for lighting devices, as shown in Chliwnyj (Ex. 1005, 14:11–17), Wu (Ex. 1006, Fig. 3, depicted in circuit A), Pu (Ex. 1008, 5), Dowling (Ex. 1010, 7:53–

62), and Lau (Ex. 1011, Abstract, Fig. 1). *See also* Ex. 1046, 52:21–57:17 (Dr. Ducharme testifying that switches were known to turn on and off solar lights), 64:5–65:7 (Dr. Ducharme agreeing that batteries in a battery compartment would be “accessible” to a user); Ex. 1047 ¶ 24 (Dr. Shackle agreeing with Dr. Ducharme). The only discussion of an inaccessible switch in the present record that we see is in Shalvi.<sup>18</sup> Shalvi describes a solar light having a security mode that turns the light on when motion is detected, to indicate the presence of an intruder. Ex. 1013, Abstract. Shalvi teaches to hide the on/off switch so that it is not immediately accessible. *Id.* at 2:31–35. Thus, reading this in context, the switch is inaccessible because it would defeat the purpose of the security light if the intruder could simply turn the light off. There is no such consideration in Chliwnyj, Wu, or the ’827 patent. Given the record before us, we find that a person of ordinary skill in the art would have understood Chliwnyj’s switch in Figure 4 to be user-accessible.<sup>19</sup> To the extent there are design considerations to be weighed, the evidence suggests that hidden switches might be considered for security purposes, something not at issue here.

Considering the record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims

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<sup>18</sup> Although Shalvi, Pu, Dowling, and Lau are not in this ground, we nevertheless review them to glean knowledge and perspective of a person of ordinary skill in the art. *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (holding the Board should consider all evidence before it that demonstrates the knowledge and perspective of one of ordinary skill in the art).

<sup>19</sup> A switch on the bottom of the base would be “obtainable or reachable by the user without substantial effort or destroying the lighting device” and, thus, user-accessible.

27–29 and 35 would have been obvious to a person of ordinary skill in the art.

*G. The Chliwnyj, Wu, and Lau Ground:  
Claim 30*

Claim 30 depends from claim 27 and includes a further limitation that there are three lamps, comprising red, green, and blue light-emitting diodes (RGB LEDs). Petitioner’s ground stems from the Chliwnyj/Wu ground just discussed, and adds Lau for the RGB LEDs. Pet. 43–45. In particular, Petitioner notes that RGB LEDs may be combined to produce any color perceptible by human eyes, such that substituting RGB LEDs for the various colors in Chliwnyj (e.g., red, yellow, orange) is a recognized substitution of equivalents. *Id.* at 44–45 (citing Ex. 1002 ¶¶ 194–97); *see* Ex. 1002 ¶¶ 42–44, 196–97 (explaining how red, green, and blue may be combined to create the color spectrum); Ex. 1047 ¶¶ 69–70 (same).

Patent Owner argues that Petitioner’s combination would modify Chliwnyj’s device to cause the flame to change to any arbitrary color at random. *See* PO Resp. 35 (“Expanding the available color gamut . . . increases the unpredictability of the produced color”), *id.* at 36 (“Colors would have fluctuated between ‘any’ color, dictated unpredictably by the random elements”); *id.* at 37 (“If you mixed randomly modulated blue light with . . . red, yellow, and amber light, the result would not have been predictable, and . . . not necessarily a flame color.”). Patent Owner argues that such a result “render[s] the flame simulation of Chliwnyj inoperable . . . and . . . would have been outside the capability of persons of ordinary skill in the art.” *Id.* at 31–32. Similarly, Patent Owner argues that, “[i]n order for the Chliwnyj circuit to operate, it must operate within a limited color gamut

composed of . . . red, amber, and orange colors.” *Id.* at 32. Lastly, Patent Owner argues that a person of ordinary skill in the art “would have had to recreate Chliwnyj to account for the increased power requirements of blue and green LEDs.” *Id.* at 39.

Bodily, one-to-one incorporation of Lau’s RGB LEDs for Chliwnyj’s red, yellow, and orange LEDs might result in an oddly-colored flame, but we do not understand that to be Petitioner’s position.<sup>20</sup> We understand Petitioner’s position in its Petition to be that the RGB LEDs could be added to Chliwnyj as a *substitute*, i.e., to the same effect. *See* Pet. 44 (characterizing the modification as “an equivalent substitution”). Thus, the RGB LEDs would be modulated to create the same colors described in Chliwnyj—red, amber, yellow. The notion of blending red, green, and blue to make other colors is old and well-established. Petitioner cites to Lau as evidence that this knowledge has been applied to small consumer-grade lights. Pet. 43–44 (citing Ex. 1011, 1:33–40, 2:45–49, Ex. 1002 ¶¶ 191–93); *see also* Ex. 1002 ¶¶ 42–44 (explaining how primary colors can be mixed to create any color); Ex. 1011, 2:58–60 (explaining how LED drivers were well known), 3:28–44 (explaining how varying the duty cycle of the LEDs gives rise to different color combinations); PO Resp. 35 (acknowledging that “[i]t would have been known by [persons of ordinary skill in the art] that color

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<sup>20</sup> Even if it were, there is no doubt, reviewing the record before us, of the technical predictability and feasibility of doing so; it only would have been the aesthetics of the resulting colors that might have appeared odd. *See, e.g.*, Pet. Reply 23; Ex. 1046, 192:15–22, 165:2–13 (Dr. Ducharme testifying that the waveforms would still be reproduced but that he was not sure what the result would look like).

production using a red, green, and blue LED requires coordination between the intensity levels of each color”).

Accordingly, one of ordinary skill in the art would have known how to substitute RGB LEDs for the red, amber, and yellow LEDs to make red, amber, and yellow light. In addition, as Petitioner points out, this would have the added benefit of allowing any color to be reproduced, allowing for added realism to Chliwnyj’s flame by adding additional color components to the existing flame, as well as to allow for blue and green flames. Pet. Reply 23–24 (citing Ex. 1002 ¶¶ 190–97; Ex. 1047 ¶¶ 71–73); *see also* Ex. 1005 2:30–31 (Chliwnyj noting that more colors enhances effect of flame motion), 6:32–36 (Chliwnyj noting that colors other than red, amber, and yellow may be suitable); Ex. 1002 ¶ 196 (Dr. Shackle explaining that “a flame can be comprised of many colors, for example blue, orange, yellow, and green”). Petitioner’s declarant, Dr. Shackle, further testifies that if any modification to Chliwnyj’s devices were necessary to ensure certain colors resulted from the mixing of the RGB LEDs, such a modification would have been within the level of ordinary skill. Ex. 1047 ¶ 71. This testimony is persuasive in view of the known relationship between red, green, and blue to effect various colors and the known ability to modulate the duty cycle of RGB LEDs to effect different colors (e.g., as taught in Lau).<sup>21</sup> Indeed, Chliwnyj invites the use of different colors but does not explain how to incorporate additional colors into his lighting scheme; the reason is that *how* would have been understood by a person of ordinary skill in the art. *See* Ex. 1005, 6:32–36 (explaining that LEDs were available in red, amber, and yellow but that

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<sup>21</sup> This well-known use of RGB LEDs also is discussed in Dowling. *See, e.g.*, Ex. 1010, 6:11–43.

“[LEDs] are generally available in a number of suitable colors”), 6:19–24 (explaining that the number and colors chosen in the examples were simply those used for prototyping), 15:1–5 (“the novel inventive features described herein may be utilized with many different types of LEDs”), 55:64–67 (not limiting the claims to any particular color).

Patent Owner also argues that Chliwnyj must be operated within the “limited color gamut . . . of red, amber, and orange colors.” PO Resp. 32. As we mentioned above, however, Chliwnyj states that “[LEDs] are generally available in a number of suitable colors.” Ex. 1005, 6:31–36. We do not find any persuasive evidence in the record that would support a finding that Chliwnyj was limited to a particular number, color, or brand of LED. *See id.*; *see also id.* at 15:1–5 (“the novel inventive features described herein may be utilized with many different types of LEDs”). Accordingly, this line of reasoning is unpersuasive.

Patent Owner also argues that Petitioner’s proposed modification would render Chliwnyj inoperable, on a theory that the random effects in Chliwnyj would lead to fluctuations *between colors* rather than fluctuations *of colors*. *See, e.g.*, PO Resp. 34–37. Patent Owner is correct that randomly modulating the intensity of individual RGB LEDs would lead to color changes, because, as he acknowledges, modulating the relative intensity of a given set of RGB LEDs is how the different colors are created. *Id.* at 35. But if a person of ordinary skill in the art is *substituting RGB LEDs* for the red, amber, and yellow LEDs in order to produce red, amber, and yellow by modulating the RGB LEDs in the known fashion, then the resulting combination would, for example, dim the RGB triad substituted for the yellow LED *as a group* at those times when the prior yellow LED would

have been dimmed. Thus, the problem Patent Owner argues would not occur under the Petitioner's proposed modification.

Patent Owner's argument that Chliwnyj would have to be recreated to account for the increased power requirements is likewise unpersuasive. See PO Resp. 39. Patent Owner's argument is based on the testimony of Dr. Shackle, Petitioner's declarant, who states that blue LEDs have a higher voltage requirement than red LEDs. See *id.* But Patent Owner provides no context for this statement and does not provide any persuasive evidence explaining how or why this would have affected a person of ordinary skill in the art's decision-making process. Even if including blue LEDs, or groups of RGB LEDs, depleted the battery charge in a measurable quantity faster than the prior design (evidence of which is not before us), this is a tradeoff a person of ordinary skill in the art would have to consider. See *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000) ("The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another."). We have no evidence before us that the alleged increase in power consumption, if that were truly the result, would have any meaningful effect on the modified Chliwnyj device. On the other hand, the proposed combination would be both a functional substitute (e.g., RGB LEDs to make yellow light, versus a fixed yellow LED) and would permit additional colors, as explained by Petitioner and Dr. Shackle and implied by Chliwnyj. See Pet. 44–45; Ex. 1005, 6:34–37 (disclosing availability of other suitable colors). Accordingly, Patent Owner's argument is unpersuasive.

In view of the above, we determine that Petitioner has shown that it would have been obvious to a person of ordinary skill in the art to substitute RGB LEDs for the LEDs in Chliwnyj. Thus, Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 30 would have been obvious to a person of ordinary skill in the art.

#### *H. Conclusions*

Petitioner has shown, by a preponderance of the evidence, that:

Claims 24–26 would have been obvious in view of Chliwnyj, Wu, Pu, and Dowling.

Claims 27–29 and 35 would have been obvious in view of Chliwnyj and Wu.

Claim 30 would have been obvious in view of Chliwnyj, Wu, and Lau.

#### IV. ORDER

In view of the forgoing, it is hereby:

ORDERED that Petitioner’s Motion to Exclude (Paper 56) is *denied-in-part* and *dismissed-in-part*;

FURTHER ORDERED that Patent Owner’s Motion to Exclude (Paper 54) is *denied-in-part* and *dismissed-in-part*;

FURTHER ORDERED that Petitioner’s Motion to Seal (Paper 43) is *granted*;

FURTHER ORDERED that claims 24–30 and 35 of the ’827 patent are unpatentable as obvious; and

FURTHER ORDERED that this is a Final Written Decision under 35 U.S.C. § 318(a) and that parties to the proceeding seeking judicial review

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of the decision under 35 U.S.C. § 319 must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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