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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VADIM ADAMOVICH,
MICHAEL STUART WEAVER, and RAYMOND KWONG

Appeal 2018-003520
Application 14/174,456
Technology Center 1700

Before KAREN M. HASTINGS, N. WHITNEY WILSON, and
LILAN REN, *Administrative Patent Judges*.

REN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants¹ appeal under 35 U.S.C. § 134 from a rejection² of claims
1–22. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ The real parties in interest are identified as “Universal Display Corporation and Kent State University.” Appeal Brief of August 18, 2017 (“Br.”), 1.

² Final Office Action of February 7, 2017 (“Final Act.”). In this opinion, we also refer to the Examiner’s Answer of November 2, 2017 (“Ans.”) and the Reply Brief of January 3, 2018 (“Reply Br.”).

CLAIMED SUBJECT MATTER

The claims are directed to organic light emitting devices. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A device comprising:
 - an anode and a cathode;
 - an emissive layer disposed between and electrically connected to the anode and the cathode, the emissive layer comprising an organic host and an organic dopant;
 - an organic hole transport layer between the anode and the emissive layer;
 - an organic electron transport layer between the cathode and the emissive layer,
 - an electron injection layer between the cathode and the electron transport layer;
 - wherein said electron transport layer is a single layer and is the only layer between the electron injection layer and the emissive layer;
 - the HOMO level of the organic host is no more than 0.8 eV below the HOMO level of the hole transport layer,
 - the LUMO level of the organic host is no more than 0.4 eV above the LUMO level of the electron transport layer,
 - the HOMO level of the electron transport layer is no more than 0.4 eV below the HOMO level of the host,
 - the HOMO and LUMO levels being calculated by density functional calculation,
 - wherein the device has an external quantum efficiency of over 9.2% at 500 cd/m² and up to about 30%.

Claims Appendix, Br. 12.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Grushin	US 2002/0190250 A1	Dec. 19, 2002
Kwong	US 2006/0088728 A1	Apr. 27, 2006

REJECTIONS

Claims 1–6, 8–15, 17–19, 21, and 22 are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Kwong. Final Act. 2.

Claims 1–6, 8–15, 17–19, 21, and 22 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kwong. Final Act. 4.

Claims 7, 16, and 20 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kwong in light of Grushin. Final Act. 5–6.

Claims 1–22 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1–25 of U.S. Patent No. 8,685,540. Final Act. 7.

Claims 1–22 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1–19 of U.S. Patent No. 7,807,275. Final Act. 7.

OPINION

Double Patenting Rejections

Appellants do not appeal the double patenting rejection over claims 1–25 of U.S. Patent No. 8,685,540 or claims 1–19 of U.S. Patent No. 7,807,275. Both rejections are therefore summarily affirmed.

*Claim 1*³

In rejecting claim 1, the Examiner finds that Kwong describes a device using the same material in the same configuration which would

³ Appellants do not present separate arguments for the anticipation and obviousness rejections of claim 1 (although the Reply Brief only argues for the reversal of the anticipation rejection (Reply Br. 5)). *See, e.g.*, App. Br. 5–10. We therefore address the arguments presented as being directed to both rejections. Appellants also do not present separate arguments for the remaining claims. *See, e.g.*, App. Br. 10; Reply Br. 5. These claims, therefore, stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2013).

exhibit the recited properties. Final Act. 3 (citing Kwong ¶¶ 124, 128, 133, & 139). Appellants, on the other hand, argue that the Examiner reversibly erred in rejecting claim 1 for failure to show that the recited properties such as HOMO and LUMO levels are necessarily present in the prior art composition. Br. 7.

Appellants first argue that the specification shows that “the doping concentrations of layers affect[] the HOMO energy levels of those layers, and HOMO energy levels can clearly vary.” *Id.* (citing paragraph 50 of the published application).⁴ The Examiner, on the other hand, finds that such doping level “refers to the amount of dopant in the emissive layer” and not the layers (the hole transport layer, the electron transport layer, and the organic host) in which the HOMO and LUMO levels are recited in the claim. Ans. 3 (citing Spec. ¶ 10). Appellants do not address, much less dispute this finding, and we are unpersuaded that the Examiner reversibly erred here. *See, e.g.*, Reply Br. 1–5.

Appellants also argue that although Kwong describes an example of a layer thickness of 450 Å, the host and doping levels in that prior art example differ from those of the examples in the specification and therefore is not identical with the recited composition. Br. 8. The Examiner again points out that the doping levels in the emissive layer are not relevant to where the recited HOMO and LUMO levels are found. Ans. 4. Because Appellants do not dispute this finding, we are unpersuaded that the Examiner reversibly erred. We further note that to the extent Appellants assert that layer

⁴ Appellants do not assert that such doping concentrations may affect other recited properties such as external quantum efficiency. Br. 7–8.

thickness may affect the recited properties, Appellants have not supported this assertion with factual evidence. *See* Br. 8; *see also* Reply Br. 4.

Where . . . the claimed and prior art products are identical or substantially identical . . . the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. Whether the rejection is based on ‘inherency’ under 35 U.S.C. § 102, on ‘prima facie obviousness’ under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products.

In re Best, 562 F.2d 1252, 1255 (CCPA 1977) (citation and footnote omitted).

In this case, Appellants have not presented evidence showing that the prior art device does not possess the recited properties. Moreover, we note that the “discovery of a new property or use of a previously known composition, even when that property and use are unobvious from the prior art, cannot impart patentability to claims to the known composition.” *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990).

DECISION

The Examiner’s decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED