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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YU HONG JEON, DAVID CANN, ERIC PATTERSON,
BRADY GIBBONS, and PETER MARDILOVICH¹

Appeal 2015-006751
Application 13/819,994
Technology Center 1700

Before BRADLEY R. GARRIS, LINDA M. GAUDETTE, and
BRIAN D. RANGE, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134, Appellants appeal from the Examiner's rejection under 35 U.S.C. § 103(a) of claims 1, 2, 4, 5, and 8–14 as unpatentable over Masahito et al. (JP 2005-047748, published Feb. 24, 2005, as translated) (“JP ’748”). We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

¹ Hewlett-Packard Development Company, LP is identified as the real party in interest. App. Br. 3.

Appellants claim a lead-free piezoelectric ceramic material having a particular chemical formula (sole independent claim 1).

A copy of representative claim 1, taken from the Claims Appendix of the Appeal Brief, appears below.

1. A lead-free piezoelectric ceramic material having the general chemical formula:
 $x\text{Bi}(\text{Zn}_{0.5}\text{Ti}_{0.5})\text{O}_{3-y}(\text{Bi}_{0.5}\text{K}_{0.5})\text{TiO}_{3-z}(\text{Bi}_{0.5}\text{Na}_{0.5})\text{TiO}_3$
wherein $x+y+z=1$, $0 < x \leq 0.19$, $0.28 \leq y \leq 0.50$ and $0.40 \leq z \leq 0.65$.

Appellants do not present separate arguments specifically directed to the dependent claims under rejection (App. Br. 20). Therefore, the dependent claims will stand or fall with their parent independent claim 1.

We sustain the Examiner's rejection for the reasons expressed in the Final Action, the Answer, and below.

The Examiner finds that JP '748 discloses a piezoelectric ceramic material having a general formula that encompasses the claim 1 material and concludes that it would have been obvious to select the Zn substituent and the substituent proportions disclosed by the reference and required by claim 1 (Final Action 2–3).

Appellants argue that the broad teachings of JP '748 would not have suggested “the specific combination of Zn as the M1 atom with the mass fractions x, y, and z within the narrow ranges required by claim 1” (App. Br. 13–14).

Appellants' argument is not persuasive for the reasons given by the Examiner (Ans. 3–4). Moreover, we emphasize that “[the prior art disclosure of] a multitude of effective combinations does not render any particular formulation less obvious.” *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989).

Appellants further argue that JP '748 discloses lower elongation values for a material having the proportions required by claim 1 and accordingly that the reference would discourage a person of ordinary skill in the art from making materials having the claimed proportions (App. Br. 17–18) because “[elongation] is a property that a person of ordinary skill in the art would wish to maximize” (*id.* at 17).

We fully agree with the Examiner that the JP reference does not teach away from, or discourage an artisan from pursuing, the claim 1 material (Ans. 4–7). In addition, we observe that Appellants provide no evidence in support of their position that “a person of ordinary skill in the art would wish to maximize [elongation]” (App. Br. 17) to such an extent as to be discouraged from using the claim 1 proportions encompassed by the JP '748 ranges.

Finally, Appellants contend that the material of claim 1 provides unexpected results (*id.* at 18–20 (citing, e.g., Spec. ¶ 21)).

Again, we agree with the Examiner that the Specification disclosure identified by Appellants does not present a proper comparison in order to assess whether the asserted results are unexpected (Ans. 7–8). Further, we point out that Appellants do not identify any Specification disclosure that uses the term “unexpected” in describing these results (e.g., the strain values referred to in Spec. ¶ 21). Based on the record before us, only the attorney who wrote the Appeal and Reply Briefs characterizes the results as “unexpected.” Such attorney statements are insufficient to establish unexpected results. *See In re Geisler*, 116 F.3d 1465, 1470–71 (Fed. Cir. 1997) (reiterating that unexpected results must be established by factual evidence and holding that an attorney statement describing results as “surprising” was insufficient to establish unexpected results).

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In summary, the argument and evidence of record weigh most heavily in favor of an ultimate conclusion of obviousness.

The decision of the Examiner 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).

AFFIRMED