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Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER

CHANG, VICTOR S

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES DAVID BLACKHALL SMITH,
GARY STEVENS, and JOHN WILLIAM WOOD

Appeal 2010-008057
Application 11/152,984
Technology Center 1700

Before LINDA M. GAUDETTE, MARK NAGUMO, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134 from an Examiner's decision finally rejecting claims 5, 9, 10, 22-27, and 29-30. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

Claim 5, reproduced below, is illustrative of the subject matter on appeal.

5. A continuous organic-inorganic highly structured resin comprising:
a host highly structured resin network comprising a plurality of mesogenic groups; and

inorganic high thermal conductivity fillers being evenly dispersed in said host highly structured resin network, wherein said inorganic high thermal conductivity fillers comprise surface functional groups that covalently bond said high thermal conductivity fillers directly to said host highly structured resin network;

wherein said high thermal conductivity fillers have a length of between 1-1000 nm and an aspect ratio of 10-50;

wherein said plurality of mesogenic groups and said thermal conductivity fillers are in substantial alignment with one another in a uniform direction; and

wherein the continuous organic-inorganic highly structured resin comprises minimal to no interfacial gaps or microvoids formed therein and is effective to reduce an amount of phonon scattering and to increase an amount of phonon transport in the resin.

Claims 5, 9, 10, 22-27, and 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chopra¹ in view of McCullough² and Jackson³.

¹ US 2005/0116336 a1, Pub. Jun. 2, 2005

² 6,048,919, issued Apr. 11, 2000

³ 4,361,661, issued Nov. 30, 1982

Claim 29 stands rejected under 35 U.S.C. § 103 over these same references with admitted prior art (APA) (Spec. paras. [0006]-[0007]).

The Examiner has withdrawn the rejections under 35 U.S.C. § 112, first and second paragraphs of all the claims (Ans. 2).

B. DISCUSSION

During examination, the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

After review of the respective positions provided by Appellants and the Examiner, we agree with Appellants that the Examiner has not met the burden in this case for substantially the reasons set forth by Appellants in their Briefs. We add the following for emphasis.

The Examiner relies upon Jackson to establish that it would have been obvious to add silane coupling agents to the combined prior art of Chopra and McCullough so as to result in the limitation that the “fillers comprise surface functional groups that covalently bond said high thermal conductivity fillers directly to said host highly structured resin network” (Claim 45). Appellants point out that Jackson, as well as the other references relied upon, are “wholly silent as to [this] subject limitation” (App. Br. 7; *see also* Reply Br. 4). Appellants state that the coupling agents of Jackson are intermediate structures that would not result in a direct covalent bond as claimed (App. Br. 7; also Reply Br. 4), and further that “coupling agents may just as well function by forming an ionic bond . . . as

well as by Van der Waals or attractive molecular forces, and not necessarily by forming covalent bonds (Reply Br. 5; emphasis in original).

An inherent characteristic must be inevitable, and not merely a possibility or probability. *See In re Oelrich*, 666 F.2d 578, 581 (CCPA 1981). The Examiner merely concludes that providing “a workable amount of covalent bond forming coupling agents” would have been obvious (Ans. 5) and that “coupling agents forms strong covalent bonds” (Ans. 7). The Examiner has not established with any evidence or provided any explanation on this record why the use of the silane coupling agents of Jackson in the combined prior art of Chopra and McCullough would inevitably, or necessarily, result in a direct covalent bond as claimed.

For the foregoing reasons, and those presented by Appellants in the Briefs, the Examiner has not satisfied the initial burden of presenting a prima facie case of obviousness.

In light of these circumstances, a preponderance of the evidence supports the Appellants’ position, and the § 103(a) rejection is reversed.

C. DECISION

The decision of the Examiner is reversed.

REVERSED

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