

The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DONG TIAN,
JEFFREY S. ROSS, and
COURTNEY R. PRICE

Appeal 2007-3684
Application 10/448,794
Technology Center 1700

Decided: September 26, 2007

Before CHUNG K. PAK, JEFFREY T. SMITH, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 to 7, 17, 23, 24, 27 to 40, 52 to 59 and 63 to 72. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Claim 1 is illustrative:

1. A polyester composition comprising:

- a) a polyester comprising a first moiety derived from a compound selected from the group consisting of a lactone, a lactide, a glycolide, and combinations thereof, wherein at least one end of the polyester is a hydroxy moiety and a second end is a moiety comprising ethylenic unsaturation, the ethylenically unsaturated moiety being covalently linked to the first moiety via an ester linkage, and
- b) an enzyme catalyst.

The Examiner relies upon the following references:

Yu	US 4,791,189	Dec. 13, 1988
Kobayashi	US 5,449,743	Sep. 12, 1995
Gruning	US 6,268,521 B1	Jul. 31, 2001

The Examiner made the following rejections:

Claims 1 to 7, 17, 23, 24, 27 to 40, 52 to 59 and 63 to 72 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined teachings of Yu, Kobayashi and Gruning.¹

Based on the contentions of the Examiner and the Appellants, the issue before us is: Has the Examiner made sufficient factual findings such that it is reasonable to conclude that one of ordinary skill in the art would have been led to combine the teachings of the references in the manner claimed within the meaning of 35 U.S.C. § 103? We answer this question in the affirmative.

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the

¹ Appellants have argued the patentability of the claimed invention together. We will limit our discussion to claim 1.

differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). “[A]nalysis [of whether the subject matter of a claim would have been obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41, 82 USPQ2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336-337 (Fed. Cir. 2006)). See *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006) (“The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.”); *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969) (“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.’”); *In re Hoeschele*, 406 F.2d 1403, 1406-407, 160 USPQ 809, 811-12 (CCPA 1969) (“[I]t is proper to take into account not only specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom . . .”). The analysis supporting obviousness, however, should be made explicit and should “identify a reason that would have prompted a person of ordinary

skill in the relevant field to combine the elements" in the manner claimed. *KSR*, 127 S. Ct. at 1739, 82 USPQ2d at 1396.

Appellants' principal argument is that Yu teaches away from the claimed invention. Appellants contend that Yu teaches that enzyme catalysts cannot be used in the production of polyesters wherein lactones are ring opened in the presence of hydroxyl functional unsaturated initiators. Thus, the Examiner erred in attempting to combine Yu, a reference which teaches away from the claimed invention, with other references to establish the obviousness of the claimed invention based on the disclosure of Yu. (Br. 12-18).

We do not find Appellants' argument persuasive. Yu discloses the production of polyesters wherein lactones are ring opened with a cationic ring opening catalyst in the presence of hydroxyl functional unsaturated initiators, such as hydroxyalkyl (meth)acrylates (Yu, col. 3, l. 13- col. 4, l. 65). Yu differs from the claimed invention in the use of an enzyme catalyst in the formation of the polyester. Kobayashi describes a method for ring opening polymerization utilizing an enzyme catalyst (Kobayashi, col. 1, ll. 7-12). Kobayashi discloses that conventional catalysts utilized for cationic reactive monomers have several drawbacks, such as side reactions and the incorporation of the catalyst into the polymer produced (Kobayashi, col. 1, ll. 25-55). Kobayashi discloses suitable cyclic compounds for use with the catalyst to include lactones (Kobayashi, col. 3, ll. 7-10). The Examiner cited Gruning to establish that persons of ordinary skill in the art recognize that enzyme catalysts are compatible with acrylate functional monomers (Answer 4).

The prior art cited by the Examiner establishes that a person of ordinary skill in the art would have reasonably expected that in the formation of polyesters, enzyme catalysts would have been suitable for replacing cationic ring opening catalysts for lactone compounds. A person of ordinary skill in the art would have been led to replace the catalysts described in Yu with the enzyme catalysts described by Kobayashi to obtain the advantages disclosed therein.

Appellants' contention that the claimed invention is not obvious because Yu teaches away from the use of an enzyme catalyst is not supported on the present record. Appellants have not identified a specific portion of the Yu reference that states that enzyme catalysts cannot be used. As stated above, a person of ordinary skill in the art would have been motivated to utilize an enzyme catalyst in the ring opening polymerization of Yu to obtain the advantages described by Kobayashi.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims 1 to 7, 17, 23, 24, 27 to 40, 52 to 59 and 63 to 72 is affirmed.

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

AFFIRMED

tf/ls

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