THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ATSUMI YAMAGUCHI

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Appeal No. 95-1750
Application 07/891,123[1]

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ON BRIEF

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Before GARRIS, PAK, and WARREN, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the refusal of the examiner to allow claims 1 through 9 as amended subsequent to

[1] Application for patent filed June 1, 1992.

the final rejection. These are all of the claims in the application.

The subject matter on appeal relates to a method for developing a positive photoresist with a developer comprising a quaternary ammonium hydroxide and a quaternary ammonium halogenide. A photoresist of this method has an unexposed portion dissolution rate with a 2.38 weight percent aqueous solution of tetramethyl ammonium hydroxide of about 1 D/sec or less. Further details of this appealed subject matter are set forth in representative independent claim 1 which reads as follows:

1. A method for developing a positive photoresist, comprising providing a positive photoresist having an unexposed portion dissolution rate with a 2.38 wt % aqueous solution of tetramethyl ammonium hydroxide of about 1 D/sec or less, image-wise exposing the positive photoresist to an activating radiation to form a latent image, and removing the exposed portions of the positive photoresist with a developer comprising a quaternary ammonium hydroxide and a quaternary ammonium halogenide of the formula

wherein R_1, R_2, R_3 and R_4 are selected from the group consisting of ethyl, methyl, hydroxymethyl, hydroxyethyl and hydrogen,

and X is a halogen atom, the quaternary ammonium hydroxide being included in an amount sufficient to dissolve an exposed portion of the photoresist and the quaternary ammonium halogenide being included in an amount sufficient to improve the selectivity in dissolution between an exposed portion and an unexposed portion of the photoresist by the quaternary ammonium hydroxide.

The references relied upon by the examiner as evidence of obviousness are:

Hilhorst et al. (Hilhorst)	3,607,271	Sep. 21, 1971
Guild	4,423,138	Dec. 27, 1983
Tanaka et al. (Tanaka)	4,873,177	Oct. 10, 1989
Kato et al. (Kato)	4,914,006	Apr. 3, 1990

Claims 1 through 9 are rejected under 35 U.S.C. § 103 as being unpatentable over Guild, Kato, Hilhorst and Tanaka.

We refer to the brief and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by the appellant and the examiner concerning this rejection.

OPINION

For the reasons set forth below, this rejection cannot be sustained.

Guild discloses a method for developing a positive photoresist with a developer solution comprising the here claimed ingredients. However, patentee fails to disclose that his photoresist possesses the here claimed unexposed portion dissolution rate. With regard to this infirmity, the examiner appears to have adopted two distinct positions.

First, the examiner seems to argue that the compositions of the appellant's and Guild's photoresist may be the same and accordingly that the here claimed dissolution rate will be an inherent characteristic of patentee's photoresist. As correctly indicated by the appellant, the dissolution rates of patentee's control examples (e.g., see control 1, control 2 and control 14 in Tables II and III) are far above the maximum dissolution rate defined by appealed claim 1. In light of this circumstance, an inherency argument of the type under consideration is unreasonable and therefore unpersuasive. Ex parte Skinner, 2 USPQ2d 1788, 1789 (Bd. Pat. App. & Int. 1986).

Alternatively, it is the examiner's basic position that it would have been obvious for one with ordinary skill in the art to use Guild's developer composition for developing the types

of positive photoresists which have dissolution rates within the here claimed range. Highly relevant to this issue of obviousness is the appellant's point that the additive of patentee's developer is explicitly described as protecting the unexposed portion of the photoresist from developer attack and that the unexposed portions of the photoresist in Guild's examples exhibit relatively high dissolution rates when exposed to developers sans additive. Because the photoresists defined by appealed claim 1 possess extremely low unexposed portion dissolution rates, no basis exists for believing that the unexposed portions of these photoresists require the protection afforded by Guild's additive. Stated otherwise, the examiner's obviousness conclusion is not well founded because the problem solved by patentee's additive (i.e., protection of the unexposed portions from developer attack) is not exhibited by the photoresists under consideration wherein the unexposed portions are not subject to developer attack since they have such low dissolution rates.

For the above stated reasons and because the deficiencies of Guild are not supplied by the other applied references, we cannot sustain the examiner's section 103 rejection of

appealed claims 1 through 9 as being unpatentable over Guild, Kato, Hilhorst and Tanaka.

The decision of the examiner is reversed.

REVERSED

Bradley R. Garris)
Administrative Patent Judge)
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Chung K. Pak) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES

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Charles F. Warren)
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