

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MICHAEL BELYANSKY,  
OLEG GLUSHENKOV AND  
ANDREAS KNORR

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Appeal 2007-0653  
Application 10/338,254  
Technology Center 1700

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Decided: February 9, 2007

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Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

ORDER REMANDING TO THE EXAMINER

This is an appeal from the final rejection of claims 1, 3-19, 21, and 22.

Claims 1 and 11 are illustrative:

1. A method of oxidizing a substrate using a plasma, the substrate having a surface area of at least 3,000mm<sup>2</sup> capable of being converted to an oxide, comprising:

providing a mixture of oxygen-bearing gas and diluent gas normally non-reactive to oxygen, the diluent gas being selected from the group consisting of Ne, Ar, Kr, Xe, and Rn;

ionizing the oxygen and diluent gas mixture to create a plasma having an electron density of at least  $1\text{e}12\text{cm}^{-3}$ , the ionized oxygen and diluent gas mixture forming energetic particles including atomic oxygen in the plasma; and

oxidizing said substrate with the energetic particles created in the plasma to form an oxide<sup>3</sup> film of substantially uniform thickness.

11. The method of claim 9 wherein the silicon-containing material is monocristalline silicon having multiple crystallographic planes.

Claims 11, 12, 14-19, 21, and 22 stand rejected under 35 U.S.C. § 112, first paragraph, description requirement. Claims 1, 3-19, 21, and 22 stand rejected under 35 U.S.C. § 112, second paragraph. In addition, claims 1-10, 13-18, and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Asmussen in view of Fairbairn and further in view of any one of Yin, Iyer or Cathey. We note, however, that no appeal is taken for claim 2.

The basis for the Examiner's Section 112, description requirement rejection is the Examiner's understanding that monocristalline silicon, or single crystal silicon, can have only one crystallographic plane. The Examiner explains that "[i]f there is the only one crystal, how can that single crystal be in more than one orientation/plane at the same instance?" (page 5 of Answer, last paragraph). Also, the Examiner notes that "with respect to claims 11-12, 19 & 21 know [sic, no] prior art was applied, because it is

impossible to apply prior art to something that cannot be physically exist."  
(page 16 of Answer, penultimate sentence).

Appellants, on the other hand, contend that "[t]he fact that a single (mono) crystal can have multiple crystallographic planes is fundamental metallurgical knowledge, and it is not believed necessary to provide an affidavit to that effect" (page 6 of principal Br., penultimate paragraph). Appellants add in their Reply Brief that they "continue to assert that the fact that a single (mono) crystal can and does have multiple crystallographic planes is fundamental metallurgical knowledge, and the Board is urged to consult with more experienced examiners or examine any basic metallurgical text if it has any doubts" (page 2, last sentence).

Inexplicably, neither the Examiner nor Appellants have provided any objective evidence to lend factual support for their diametrically opposed arguments. Manifestly, Appellants' invitation for the Board to research the point is totally inappropriate. Clearly, it is not within the province of this Board to search and uncover evidence which supports Appellants' position. It is fundamental that an applicant must include in the Brief all arguments and supporting evidence relied upon.

Accordingly, this application is remanded to the Examiner as it is not ripe for decision. The Examiner should bear in mind that the initial burden of establishing unpatentability rests with the Examiner. Accordingly, the Examiner should present objective evidence to support the rejection based on lack of description of the claimed invention. Once this may occur, Appellants should be afforded the opportunity to rebut the rejection with evidence to support their argument regarding the crystallographic nature of

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monocrystalline silicon. Also, the Examiner should consider prior art rejections for claims 11, 12, 19, and 21 if it is determined that monocrystalline silicon can have multiple crystallographic planes.

Consequently, based on the foregoing, this application is remanded to the Examiner for the reasons set forth above. 37 C.F.R. § 41.50(a)(1)(20]

This remand to the Examiner pursuant to 37 C.F.R. § 41.50(a)(1) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)) is made for further consideration of a rejection. Accordingly, 37 C.F.R. § 41.50(a)(2) applies if a Supplemental Examiner's Answer is written in response to this Remand by the Board.

REMANDED

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