

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte KENNETH S. COLLINS, CHAN-LON YANG,  
JERRY WONG YUEN-KUI WONG, JEFFREY MARKS,  
PETER R. KESWICK, and DAVID W. GROECHEL

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Appeal No. 2000-1058  
Application No. 08/673,972

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ON BRIEF

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Before LIEBERMAN, KRATZ, and DELMENDO, Administrative Patent Judges.

KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 10-28, which are all of the claims pending in this application.

BACKGROUND

Appellants' invention relates to a plasma etch process including the provision of a vacuum chamber, supplying a fluorine containing etch gas to the chamber, coupling RF energy into the chamber to form and maintain a plasma of the etch gas and furnishing a gaseous source of silicon to form a passivating polymer on an article placed on a support in the chamber. An understanding of the invention can be derived from a reading of exemplary claim 10, which is reproduced below.

10. A plasma etch process comprising:
- a) providing a vacuum chamber for forming and maintaining a plasma therein;
  - b) providing an article to be processed by said plasma on a support in the chamber;
  - c) supplying a fluorine-containing etch gas to the chamber;
  - d) coupling RF energy into the chamber for forming and maintaining a plasma of said etch gas in the chamber; and
  - e) supplying to the chamber a gaseous source of silicon or carbon in addition to said etch gas so as to form a passivating polymer on said article.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Tsuchimoto 1978	4,123,316	Oct. 31,
Douglas 1989	4,807,016	Feb. 21,

Boswell 1989	4,810,935	Mar. 07,
Campbell et al. (Campbell) 1991	4,990,229	Feb. 05,

Coburn, "Increasing the Etch Rate ratio of SiO<sub>2</sub>/Si in Fluorocarbon Plasma Etching," IBM Technical Disclosure Bulletin, Vol. 19, No. 10, March, 1977.

Claims 10-18 and 21-28 stand rejected under 35 U.S.C. § 103 as being unpatentable over either Coburn or Douglas. Claims 10-28 stand rejected under 35 U.S.C. § 103 as being unpatentable over either Coburn or Douglas each in view of Campbell or Boswell, and Tsuchimoto.

We refer to appellants' brief and the answer for a complete exposition of the opposing viewpoints of appellants and the examiner concerning the rejections before us.

#### OPINION

Upon careful review of the entire record including the respective positions advanced by appellants and the examiner, we find ourselves in agreement with appellants since the examiner has failed to carry the burden of establishing a prima facie case of obviousness. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1471-1472, 223 USPQ 785, 787-788

(Fed. Cir. 1984). Accordingly, we will not sustain the examiner's stated rejections.

We point out that in a rejection under 35 U.S.C. § 103, it is fundamental that all elements recited in a claim must be considered and given effect in judging the patentability of that claim against the prior art. See In re Geerdes, 491 F.2d 1260, 1262-63, 180 USPQ 789, 791 (CCPA 1974). Thus, a prima facie case of obviousness is established by showing that some objective teachings or suggestions in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in the art would have led that person to the claimed invention, including each and every limitation of the claims, without recourse to the teachings in appellants' disclosure. See generally In re Oetiker, 977 F.2d 1443, 1447-48, 24 USPQ2d 1443, 1446-47 (Fed. Cir. 1992) (Nies, J., concurring). This showing can be established on similarity of product or of process between the claimed invention and the prior art.

In making our determination with respect to the propriety of the examiner's rejections of the subject matter on appeal

herein, we need only focus on two of the references applied against the claims, namely, Coburn or Douglas since a principal basis of each of the examiner's rejections<sup>1</sup> is that those two references describe etch processes sufficiently similar to appellants such that the etch process of either Coburn or Douglas would inherently result in the formation of a passivating polymer on an article as herein claimed by appellants. See pages 4-6 of the answer.

Thus, a central question before us is whether the examiner's assertion of inherency is reasonable. We answer that question in the negative since the examiner has not provided a sufficient basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent formation of a passivating polymer on an article necessarily flows from the teachings of the applied prior art. See Ex parte Levy, 17 USPQ 1461, 1464 (Bd. Pat. App. & Intf. 1990).

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<sup>1</sup> The examiner does not explain how Campbell or Boswell, and Tsuchimoto, as additionally applied in the examiner's second § 103 rejection would have made up for any deficiencies in either Coburn or Douglas with respect to the alleged inherent feature thereof.

Concerning this matter, we observe that Coburn describes a method for increasing the etch ratio of silicon dioxide to silicon by use of a solid surface formed of fluorine scavenger material in a discharge region. However, the examiner has not shown that Coburn describes a plasma etch process identical with appellants process including the supply of a gaseous source of silicon or carbon in addition to the supply of fluorine containing gas to a vacuum container while coupling RF energy into the chamber so as to reasonably suggest the formation of a passivating polymer as called for in the appealed claims. Similarly, the examiner has not established that the process of Douglas is substantially the same as that of appellants so as to necessarily result in the formation of a passivating polymer on an article.

Inherency simply cannot be established based on conjecture and/or probabilities or possibilities. See In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981); Ex parte Skinner, 2 USPQ2d 1788, 1788-1789 (Bd. Pat. App. & Intf. 1986).

In order for a prima facie case of obviousness of the claimed invention to be established, the prior art as applied

must be such that it would have provided one of ordinary skill in the art with both a suggestion to carry out appellants' claimed invention and a reasonable expectation of success in doing so. See In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). "Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *Id.* Since the examiner has not carried the burden of particularly pointing out where a suggestion that would have led one of ordinary skill in the art to a process having all of the steps claimed herein is supported by the applied references' teachings, we reverse the stated rejections.

#### CONCLUSION

The decision of the examiner to reject claims 10-18 and 21-28 under 35 U.S.C. § 103 as being unpatentable over either Coburn or Douglas and to reject claims 10-28 under 35 U.S.C. §

103 as being unpatentable over either Coburn or Douglas each  
in view of Campbell or Boswell, and Tsuchimoto is reversed.

REVERSED

PAUL LIEBERMAN	)	
Administrative Patent Judge	)	
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	)	
	)	
	)	BOARD OF PATENT
PETER F. KRATZ	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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ROMULO H. DELMENDO	)	
Administrative Patent Judge	)	

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APPEAL NO. - JUDGE KRATZ  
APPLICATION NO.

APJ KRATZ

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APJ

DECISION: **ED**

Prepared By:

**DRAFT TYPED:** 08 Nov 02

**FINAL TYPED:**