UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK R. VISOKAY, ANTONIO L. ROTONDARO
and LUIGI COLOMBO

Appeal No. 2006-0318
Application No. 10/195,271

ON BRIEF

Before THOMAS, KRASS, and OWENS, *Administrative Patent Judges*.
OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from a rejection of claims 1-5. Claims 6-11 stand withdrawn from consideration.

THE INVENTION

The appellants claim an integrated circuit comprising NMOS and PMOS transistors wherein the gates of all of those transistors are made of the same material but the gate material of the NMOS transistors has a different texture than the gate material of the PMOS transistors. By different texture the appellants mean that

the gate materials either have different crystalline structures or one gate material is crystalline and the other is amorphous (specification, page 7). Claim 1 is illustrative:

> 1. An integrated circuit, comprising:
> (a) a substrate with NMOS and PMOS transistors;
> (b) wherein said NMOS transistors have gates made of a first gate material with a first texture directly adjacent gate dielectric; and
> (c) wherein said PMOS transistors have gates made of said first gate material with a second texture directly adjacent gate dielectric, said first texture and said second texture differing.

THE REFERENCES

Iwase et al. (Iwase)	5,097,311	Mar. 17, 1992
Liang et al. (Liang)	6,130,123	Oct. 10, 2000
Hsu	6,258,643	Jul. 10, 2001

THE REJECTIONS

The claims stand rejected as follows: claims 1 and 5 under 35 U.S.C. § 102(b) as anticipated by Hsu; claims 2 and 3 under 35 U.S.C. § 103 as obvious over Hsu in view of Lang; and claim 4 under 35 U.S.C. § 103 as obvious over Hsu in view of Iwase.

OPINION

We affirm the rejection of claims 1 and 5 and reverse the rejections of claims 2-4.

Claims 1 and 5

Hsu discloses an integrated circuit comprising an NMOS transistor having an N^+-type polysilicon gate (21A) and a PMOS

transistor having a P^+-type amorphous gate (24B) (col. 4, lines 36-53; figure 7).

The appellants argue that N-doped silicon is not the same material as P-doped silicon (brief, page 3).[1]

During patent prosecution, claims are to be given their broadest reasonable interpretation consistent with the specification, as the claim language would have been read by one of ordinary skill in the art in view of the specification. See In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983)

The appellants consider gate materials to be the same material even though only one of the materials is doped with helium (specification, page 7). Thus, even though the silicon in one of Hsu's gates is N-doped and the silicon in the other gate is P-doped, the silicon in both gates is the same "first gate material" as that term is most broadly construed in view of the appellants' specification.

[1] The appellants argue that Hsu's "N^+ silicon is up to 1% phosphorus with negligible boron, whereas the P^+ silicon is up to 1% boron with negligible phosphorus" (brief, page 3). The appellants do not point out support in Hsu for that argument, and none is apparent.

We therefore are not convinced of reversible error in the examiner's rejection of claims 1 and 5. Accordingly, we affirm the rejection of those claims.

Claims 2-4

Liang discloses an integrated circuit comprising two transistors, one of which has a tantalum or molybdenum gate material (130) and the other of which has a tantalum nitride gate material (132) (col. 4, line 33; col. 5, lines 26-27 and 40; figure 7).

Iwase discloses that many metals, one of which is niobium, are suitable gate electrode materials (col. 6, lines 66-67).

The examiner argues:

> As is well known in the art, highly doped (N^+ or P^+) silicon is a conductive material. It is also well known in the art that highly doped silicon and metals are interchangeable. Hsu is used to show that the different gates can have different textures and Liang is used to show that the material of the gates can be tantalum or molybdenum. [answer, page 5]
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> Hsu is used to show that the different gates have different textures and Iwase is used to show that the material can be niobium. [answer, pages 5-6]

The examiner has not provided evidence that Hsu's disclosure of using polycrystalline silicon for one gate and amorphous silicon for another gate would have been considered by one of ordinary skill in the art to be applicable to metals such that the person

would have been led to use gates made of the same metal, wherein the metal in one gate has a different texture than the metal in the other gate, i.e., the metal in one gate is crystalline whereas the same metal in the other gate either has a different crystalline structure or is amorphous.

The examiner, therefore, has not carried the burden of establishing a prima facie case of obviousness of the inventions claimed in the appellants' claims 2-4. Consequently, we reverse the rejections of those claims.

DECISION

The rejection of claims 1 and 5 under 35 U.S.C. § 102(b) over Hsu is affirmed. The rejections of claims 2 and 3 under 35 U.S.C. § 103 over Hsu in view of Lang, and claim 4 under 35 U.S.C. § 103 over Hsu in view of Iwase, are reversed.

AFFIRMED-IN-PART

JAMES D. THOMAS Administrative Patent Judge	)
ERROL A. KRASS Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
TERRY J. OWENS Administrative Patent Judge	)

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TEXAS INSTRUMENTS INCORPORATED
P.O. BOX 655474
M/S 3999
DALLAS, TX 75265