

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* MEHRDAD NIKOONAHAD, GUOHENG ZHAO,  
and KALMAN KELE

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Appeal No. 2006-3247  
Application No. 10/345,055  
Technology Center 2800

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Decided: May 17, 2007

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Before LANCE LEONARD BARRY, HOWARD B. BLANKENSHIP  
and MAHSHID D. SAADAT, *Administrative Patent Judges*.

BARRY, *Administrative Patent Judge*.

I. STATEMENT OF THE CASE

A Patent Examiner rejected claims 1-6, 10, 11, 13-17, 19, 20, 22-29, 31, 32, and 34-41. The Appellants appeal therefrom under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

#### A. INVENTION

The invention at issue on appeal inspects surfaces of specimens such as semiconductor wafers. Fabrication of semiconductor devices such as logic and memory devices includes a number of processes to form various features and multiple levels or layers that comprise semiconductor devices on the surface of a semiconductor wafer, or similar substrate. During each semiconductor fabrication process, defects such as particulate contamination and pattern defects may be introduced into the surface of the wafer.  
(Specification 1.)

Accordingly, the Appellants' invention employs a contact image sensor ("CIS") to inspect the surfaces of specimens and to detect "macroscopic defects," i.e., defects having lateral dimensions of at least tens of microns. (*Id.* 14.) They assert that use of the CIS minimizes the size of their invention and permit its integration into other semiconductor processing equipment. The CIS, add the Appellants, also minimizes effects due to the optical geometry of the invention, e.g., lack of telecentricity. (*Id.*)

Claim 24, which further illustrates the invention, follows:

24. A method for measurement and inspection of a specimen, comprising:

inspecting a surface of the specimen with a contact image sensor to detect defects on the surface of the specimen;

forming an image of a front side of the specimen; and  
measuring an intensity of light reflected from the front side of the specimen to determine a characteristic of a structure on the front side of the specimen.

#### B. REJECTION

Claims 1-6, 10, 11, 13-17, 19, 20, 22-29, 31, 32, and 34-41 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,806,951 B2 ("Wack").<sup>1</sup>

#### II. CLAIM GROUPING

"When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone. Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must

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<sup>1</sup> In accordance with M.P.E.P. §1207.02 (8th ed., Rev. 3, Aug. 2005), the Examiner should have listed Wack in the *Evidence Relied Upon* section of his Examiners' Answer. We find such an omission, however, harmless to the disposition of the instant appeal.

consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(vii) (2005).<sup>2</sup>

Here, the Appellants argue claims 1-3, 10, 11, 13-17, 19, 20, 22-24, 26, 27, 31, 32, and 34-41, which are subject to the same ground of rejection, as a group. (Br. 4-10.) Therefore, we select claim 24 as the sole claim on which to decide the appeal of the group.

### III. ISSUE

With this representation in mind, rather than reiterate the positions of the parties *in toto*, we focus on the issue therebetween. The Examiner finds that page 21, lines 12-15, of the Appellants' specification defines a contact image sensor as "'a device composed of an illumination system which delivers light to the surface of a specimen such as a wafer 66 and a detection system which collects the scattered light from the specimen surface and converts the light into usable electrical signals.'" (Answer 13.) Based on this definition he asserts, "Wack et al. clearly shows in Figure 12 an illumination system (44) that delivers light to the surface of a specimen (40a) and a detection system (46a, 46b), which collects scattered light from the specimen and converts the light into usable electrical signals (54)." (*Id.*)

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<sup>2</sup> We cite to the version of the Code of Federal Regulations in effect at the time of the Appeal Brief.

The Appellants argue that "the Specification as a whole . . . generally defines a contact images sensor as a compact pre-aligned optical assembly that has performance characteristics that are independent of the length of the contact image sensor. However, Wack does not teach that any of the optical systems described therein have any of these characteristics." (Appeal Br. 9.) Therefore, the issue is whether Wack teaches the claim's contact image sensor.

"In addressing the point of contention, the Board conducts a two-step analysis. First, we construe the representative claim at issue to determine its scope. Second, we determine whether the construed claim would have been obvious." *Ex Parte Massingill*, No. 2003-0506, 2004 WL 1646421, at \*2 (B.P.A.I. 2004).

#### IV. CLAIM CONSTRUCTION

"Analysis begins with a key legal question — what is the invention claimed?" *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). In answering the question, "the PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324, 72 USPQ2d 1209, 1211 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1668 (Fed. Cir. 2000)). Although "[c]laims must be read in view of the specification, of which they are a part,"

*Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995) (en banc), "limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)).

Here, claim 24 recites in pertinent part the limitation of "a contact image sensor." We find no clear definition of the term in the Appellants' specification. Instead we find a disclosure that "scanners have been redesigned to incorporate what is usually called a 'Contact Image Sensor' or CIS, such as described in U.S. Patent No. 5,187,596 to Hwang." (Specification 12.) For its part, Hwang explains that "such a contact image sensor as stated above must be equipped with a photoelectric conversion array, a detection circuit array and a light emitting diode (hereinafter referred to as LED) array. . ." (Col. 1, ll. 9-13.)

Mentioning neither a photoelectric conversion array, a detection circuit array, nor an LED array, however, the representative claim is broader than the explanation of Hwang. We agree with the Examiner's finding that the specification broadly discloses that "[c]ontact image sensor 68 is a device composed of an illumination system which delivers light to the surface of a specimen such as a wafer 66 and a detection system which collects the scattered light from the specimen surface and converts the light

into usable electrical signals." (Specification 21.) Giving claim 24 the broadest, reasonable construction in view of the specification, we agree with the Examiner that the limitation merely requires an illumination system that delivers light to the surface of a specimen and a detection system that collects the scattered light from the surface and converts the light into usable electrical signals.

## V. ANTICIPATION DETERMINATION

"Having construed the claim limitations at issue, we now compare the claim[ ] to the prior art to determine if the prior art anticipates th[e] claim[ ]." *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349, 64 USPQ2d 1202, 1206 (Fed. Cir. 2002). "[A]nticipation is a question of fact." *Hyatt*, 211 F.3d at 1371, 54 USPQ2d at 1667 (citing *Bischoff v. Wethered*, 76 U.S. (9 Wall.) 812, 814-15 (1869); *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997)). "A reference anticipates a claim if it discloses the claimed invention 'such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.'" *In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995) (quoting *In re LeGrice*, 301 F.2d 929, 936, 133 USPQ 365, 372 (CCPA 1962)).

Here, we find that Wack "relates to a system that may be configured to determine at least two properties of a specimen." (Col. 3, ll. 4-5.) "The

system . . . includes a measurement device," (*id.* ll. 7-8), which "include[s] an illumination system configured to direct energy toward a surface of the specimen. The measurement device may also include a detection system," (*id.* ll. 8-11), "to detect energy propagating from the surface of the specimen. The measurement device may also be configured to generate one or more output signals in response to the detected energy." (*Id.* ll. 12-15.) "The system may also include a processor coupled to the measurement device. The processor may be configured to determine at least a first property and a second property of the specimen from the one or more output signals." (*Id.* ll. 16-19.)

## VI. CONCLUSION

Because the reference's illumination system directs energy toward a surface of the specimen, and its detection system detects energy propagating from the surface of the specimen and generates output signals in response thereto, we agree with the Examiner's finding that Wack anticipates the CIS of the representative claim. Therefore, we affirm the rejection of claim 24 and of claims 2, 3, 10, 11, 13-17, 19, 20, 22-24, 26, 27, 31, 32, and 34-41, which fall therewith.

Although the Appellants purport to "argue" claims 4-6, 25, 28, and 29 separately, (Br. 10-12), these arguments are all based on the premise that "Wack does not teach a contact image sensor." (*Id.* 10.) Unpersuaded by

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this premise, *supra*, we also affirm the rejection of claims 4-6, 25, 28, and 29.

"Any arguments or authorities not included in the brief or a reply brief filed pursuant to [37 C.F.R.] § 41.41 will be refused consideration by the Board, unless good cause is shown." 37 C.F.R. § 41.37(c)(1)(vii). Accordingly, our affirmance is based only on the arguments made in the briefs. Any arguments or authorities omitted therefrom are neither before us nor at issue but are considered waived. *Cf. In re Watts*, 354 F.3d 1362, 1367, 69 USPQ2d 1453, 1457 (Fed. Cir. 2004) ("[I]t is important that the applicant challenging a decision not be permitted to raise arguments on appeal that were not presented to the Board.") No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

kis/ce

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