

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

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MIN-SEONG RYU, SANG-YUP SONG
and TAE-HOON KIM

Appeal No. 2006-0126
Application No. 10/140,619

ON BRIEF

Before BARRETT, OWENS, and RUGGIERO, *Administrative Patent Judges*.
OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from a rejection of claims 1-5, which are all of the pending claims.

THE INVENTION

The appellants claim a junction device and method for joining together with adhesive a planar lightwave circuit chip and an optical-fiber block. Claims 1 and 4 are illustrative:

1. A junction device for assembling a PLC (Planar Lightwave Circuit) chip and an optical-fiber block, comprising: an adhesive material disposed between the PLC chip and the optical-fiber block, the PLC chip and the optical-fiber block having an inclined surface area at a predetermined angle; an ultraviolet-light source

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THE REJECTION

Claims 1-5 stand rejected under 35 U.S.C. § 103 as being unpatentable over the appellants' admitted prior art in view of Kojima '546.

OPINION

We affirm the aforementioned rejection.

The appellants acknowledge that each element of the claimed invention was known in the art except the claim 1 ultraviolet ray source and optical sensor in slanted alignment with the inclined adhesive, and the optical power meter and controller, and the claim 4 ultraviolet ray alignment and monitoring of the ultraviolet ray output (specification, page 1, line 16 - page 2, line 11).

Regarding the optical sensor in slanted alignment with the inclined adhesive (claim 1) and the ultraviolet ray alignment with the inclined adhesive (claim 4), the appellants state that if the ultraviolet rays are not aligned with the inclined adhesive (appellants' figure 2), then the portion of the inclined adhesive that cannot be penetrated by the ultraviolet rays does not harden properly (page 4, lines 3-11). Because this statement is in the description of the related art, it appears to be an admission that the problem resulting from applying the ultraviolet rays perpendicularly to the wafer rather than in alignment with the

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inclined adhesive was known in the art. Given this problem, those of ordinary skill in the art would have been motivated to use their skill to solve the problem. As stated in *In re Nomiya*, 509 F.2d 566, 572, 184 USPQ 607, 613 (CCPA 1975):

The significance of evidence that a problem was known in the prior art is, of course, that knowledge of a problem provides a reason or motivation for workers in the art to apply their skill to its solution.

It would have been readily apparent to one of ordinary skill in the art, when faced with the problem of ultraviolet rays applied perpendicularly to a wafer not penetrating to all portions of an adhesive because the adhesive is inclined such that the perpendicularly-applied rays cannot reach the bottom portion of the inclined adhesive, to align the ultraviolet rays with the adhesive so that the rays penetrate all of the adhesive. Moreover, even if the problem were not known in the art, it would have been apparent to one of ordinary skill in the art that all of the adhesive needs to be hardened, and that using ultraviolet rays to harden all of the adhesive requires that the ultraviolet rays penetrate all of the adhesive. For this reason it would have been prima facie obvious to one of ordinary skill in the art to align the ultraviolet ray source with the inclined adhesive.

The appellants argue that Kojima '919 indicates that Kojima '546 uses slanted ultraviolet rays to prevent bubbling

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(brief, pages 8-9; reply brief, page 11). Kojima '546 prevents bubbling by using heat in addition to ultraviolet rays (¶¶ 0028, 0041 and 0064). Regardless, the prevention of bubbles in Kojima '919 pertains to curing optical fiber coatings (¶¶ 0241, 0246 and 0247). Slanting the ultraviolet rays in alignment with the inclined adhesive used to join the prior art planar lightwave circuit chip and optical-fiber block would have been prima facie obvious to one of ordinary skill in the art as discussed above.

Kojima '546 discloses that the ultraviolet ray intensity is detected by a photodetector (5) to control the ultraviolet ray output to the level suitable for curing the particular adhesive so that stable curing characteristics of the adhesive are obtained (¶ 0024).

The appellants argue that Kojima '546 does not disclose or suggest an optical sensor for measuring a power change or an optical power meter for displaying the power change (brief, pages 11-13; reply brief, pages 11-13). The Kojima '546 disclosure that the ultraviolet light output is controlled based on the ultraviolet light intensity detected by a photodetector (¶ 0024) would have fairly suggested, to one of ordinary skill in the art, using a photodetector which measures the change in ultraviolet light intensity on which the control of that ultraviolet light

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output is based. Because the change in light intensity is a control variable, Kojima '546 would have fairly suggested, to one of ordinary skill in the art, displaying the corresponding change in ultraviolet light output to permit monitoring the adequacy of the control.

For the above reasons we are not persuaded of reversible error in the examiner's rejection.

DECISION

The rejection of claims 1-5 under 35 U.S.C. § 103 over the appellants' admitted prior art in view of Kojima '546) is affirmed.

AFFIRMED

LEE E. BARRETT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
TERRY J. OWENS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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