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**SEMICONDUCTOR ENERGY LABORATORY COMPANY LTD, Plaintiff, v. CHI  
MEI OPTOELECTRONICS CORP., et al., Defendant(s).**

**No. C 04-04675 MHP**

**UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF  
CALIFORNIA**

*531 F. Supp. 2d 1084; 2007 U.S. Dist. LEXIS 44288*

**June 19, 2007, Decided**

**June 19, 2007, Filed**

**PRIOR HISTORY:** *Semiconductor Energy Lab. Co. v. Chi Mei Optoelectronics Corp.*, 485 F. Supp. 2d 1089, 2007 U.S. Dist. LEXIS 28926 (N.D. Cal., Apr. 17, 2007)

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**JUDGES:** MARILYN HALL PATEL, United States District Judge.

**OPINION BY:** MARILYN HALL PATEL

**OPINION**

[\*1091] **MEMORANDUM & ORDER**

**Re: Motions for Summary Judgment**

Plaintiff Semiconductor Energy Laboratory Company Ltd. ("SEL") brought this patent infringement action against defendant Chi Mei Optoelectronics Corp. ("CMO") et al., alleging infringement of four United States patents related generally to the design and manufacture of liquid crystal display ("LCD") devices. Two patents in suit currently remain. Now before the court are the parties' motions for summary judgment. Having considered the parties' arguments and submissions, and for the reasons set forth below, the court enters the following memorandum and order.

## BACKGROUND

An overview of the relevant technology [\*\*3] and summaries of the asserted patents are provided in this court's Claim Construction Order. Docket Entry 111 at 1-6 (hereinafter "Claim Construction Order"). SEL [\*1092] filed this action on November 3, 2004, alleging that CMO had infringed and was infringing various patents. On August 11, 2006 the parties filed a stipulation dismissing with prejudice all claims regarding *U.S. Patent No. 5,995,189*. April 19, 2007 this court entered an order granting summary judgment of noninfringement of *U.S. Patent No. 4,691,995* ("the '995 patent"). Docket Entry 331 (hereinafter "Summary Judgment Order"). All claims and defenses with respect to the '995 patent were subsequently dismissed by stipulation. Docket Entry 357. Accordingly, two patents-in-suit currently remain: *U.S. Patent No. 6,756,258* ("the '258 patent") and *U.S. Patent No. 6,404,480* ("the '480 patent"). The asserted claims of the '258 patent cover methods of fabricating thin-film transistors ("TFTs") for use in LCDs. In particular, the TFTs claimed by the '480 patent include a "stepped" structure whereby the upper surface of the second semiconductor layer is exposed. The '480 patent claims an active matrix display device providing a way of reliably [\*\*4] creating an electrical connection between the substrates comprising the LCD.

SEL now moves for summary judgment on its claim of infringement of the '480 patent and CMO's affirmative defenses of inequitable conduct, laches and patent misuse. CMO moves for summary judgment of noninfringement and invalidity of the '258 patent, noninfringement and invalidity of the '995 patent, no liability for foreign sales and no liability for infringement prior to the receipt of statutory notice of infringement. The parties have additionally cross-moved for summary judgment as to CMO's license defense. Because the '995

patent is no longer at issue in this case, the court will not reach the parties' arguments in these motions regarding the '995 patent.

## LEGAL STANDARD

Summary judgment is proper when the pleadings, discovery and affidavits show that there is "no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." *Fed. R. Civ. P. 56(c)*. Material facts are those which may affect the outcome of the case. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248, 106 S. Ct. 2505, 91 L. Ed. 2d 202 (1986). A dispute as to a material [\*\*5] fact is genuine if there is sufficient evidence for a reasonable jury to return a verdict for the nonmoving party. *Id.* The party moving for summary judgment bears the burden of identifying those portions of the pleadings, discovery, and affidavits that demonstrate the absence of a genuine issue of material fact. *Celotex Corp. v. Catrett*, 477 U.S. 317, 323, 106 S. Ct. 2548, 91 L. Ed. 2d 265 (1986). On an issue for which the opposing party will have the burden of proof at trial, the moving party need only point out "that there is an absence of evidence to support the nonmoving party's case." *Id.*

Once the moving party meets its initial burden, the nonmoving party must go beyond the pleadings and, by its own affidavits or discovery, "set forth specific facts showing that there is a genuine issue for trial." *Fed. R. Civ. P. 56(e)*. Mere allegations or denials do not defeat a moving party's allegations. *Id.*; *Gasaway v. Northwestern Mut. Life Ins. Co.*, 26 F.3d 957, 960 (9th Cir. 1994). The court may not make credibility determinations, and inferences to be drawn from the facts must be viewed in the light most favorable to the party opposing [\*\*6] the motion. *Masson v. New Yorker Magazine*, 501 U.S. 496, 520, 111 S. Ct. 2419, 115 L. Ed. 2d 447 (1991); *Anderson*, 477 U.S. at 249.

The moving party may "move with or without supporting affidavits for a summary judgment in the party's favor upon [\*1093] all or any part thereof." *Fed. R. Civ. P. 56(a)*. "Supporting and opposing affidavits shall be made on personal knowledge, shall set forth such facts as would be admissible in evidence, and shall show affirmatively that the affiant is competent to testify to the matters stated therein." *Fed. R. Civ. P. 56(e)*.

## DISCUSSION

## I. SEL's Motions

### A. Infringement of the '480 Patent

The parties' arguments regarding infringement of the '480 patent are substantively identical to the arguments raised regarding CMO's previous motion for summary judgment. In essence, SEL asserts that it has made a *prima facie* case for infringement, and that CMO's only defense against infringement is its contention that the claim term "second interlayer insulating film" must be construed as requiring a planar surface. Because CMO's products are intentionally non-planar, [\*\*7] CMO argues, CMO's devices cannot infringe. CMO does not appear to contest this characterization of its position or otherwise offer any argument against infringement other than its argument based on the planarity of the dielectric film.<sup>1</sup> CMO does raise a separate argument asserting SEL's inability to show infringement based on foreign sales, which will be addressed in the section on defendant's foreign sales motion below.

1 CMO has filed a request for leave to file a supplemental opposition to SEL's motion for summary judgment in order to set forth an entirely new non-infringement argument. CMO's request is denied.

This court previously held that "the asserted claims of the '480 Patent cover nonuniform second interlayer dielectric films in the common contact portion of the matrix." Summary Judgment Order at 22. This order was issued after the initial briefing on the instant motions. Because the court has previously resolved this issue in favor of SEL, SEL is entitled to summary judgment of infringement [\*\*8] as to the '480 patent subject to the court's holdings regarding foreign sales set forth below.

### B. Inequitable Conduct

Inequitable conduct consists of (1) affirmative misrepresentations of material fact, (2) submission of false material information, or (3) the failure to disclose known material information during the prosecution of a patent, coupled with the intent to deceive the PTO. *Life Techs., Inc. v. Clontech Lab., Inc.*, 224 F.3d 1320, 1324 (Fed. Cir. 2000). "Materiality and intent to deceive are distinct factual inquiries, and each must be shown by clear and convincing evidence." *Id.* CMO has raised inequitable conduct as an affirmative defense as to the '480 patent and the '258 patent. SEL now moves for

summary judgment as to both patents.

#### 1. The '480 Patent

CMO's theory of inequitable conduct with respect to the '480 patent is that SEL created fictional prior art and failed to cite actual prior art that would have revealed the falsity of SEL's purported prior art.

##### a. Material Misrepresentation or Omission

Omitted prior art is material if "there is a substantial likelihood that a reasonable Examiner would have considered the information [\*\*9] important in deciding whether to allow the application to issue as a patent." *Life Techs.*, 224 F.3d at 1325. CMO must demonstrate materiality both as to the purported falsity of the admitted prior art, labeled as "Figure 13" in the '480 patent, and the actual prior art references that SEL allegedly withheld from the PTO.

##### [\*1094] i. Figure 13

Figure 13 of the '480 patent is a diagram labeled "Prior Art" showing a large conductive spacer in the opening of a second insulating film. As this court noted in its Claim Construction Order, the location of the conductive spacer was a critical issue in the '480 patent:

The '480 patent provides a way of reliably creating an electrical connection from the TFT substrate to the opposing substrate while maintaining a uniform gap between the substrates. One obstacle to achieving a uniform gap in the prior art is variation in thickness of the insulating--or "dielectric"--layer deposited just beneath the electrodes on the TFT substrate. In prior art displays, the metal contact for the electrical connection to the counter substrate was located on a layer *below* the level of the dielectric. Thus, the conductive spacer had to be [\*\*10] of a size roughly equal to the thickness of the dielectric layer plus the width of the gap between the substrates in order to make electrical contact with both substrates. Because it is difficult to control the thickness of the dielectric layer from panel to panel, and even within a single panel, it was difficult to create spacers of the

correct size. The improvement of the '480 patent is to locate the metal contact for the electrical connection *on top of* the dielectric layer, eliminating the relationship between the thickness of the dielectric and the size of the conductive spacers.

Claim Construction Order at 4-5 (emphasis in original, citations omitted). CMO claims that SEL devised a prior art contact structure that would make SEL's claimed structure appear novel, but that the actual prior art did not contain the defect purportedly addressed by the '480 patent. Figure 13 is clearly material in light of the fact that the location of the conductive spacer has been identified as the innovation of the '480 patent.

The materiality of Figure 13 does not end the inquiry, however, as the court must determine whether SEL has adduced sufficient evidence that the inclusion of [\*\*11] Figure 13 was in fact a misrepresentation. In support of its claim that Figure 13 is a fabrication, CMO asserts that no SEL witnesses, including the inventors, could recall or identify any device (other than an unspecified SEL device), patent, patent application, text, article or publication with the structure disclosed in Figure 13. Unikel Opp. Dec., Exh. 2, Yamazaki Dep. at 250:19-259:17, 244:2-245:13; Unikel Opp. Dec., Exh. 4, Hirakata Dep. at 43:19-44:2. Additionally, the SEL employee who drew Figure 13 could not provide any information as to what she looked at to draw the figure or any other basis for her understanding of the prior art structure. Unikel Opp. Dec., Exh. 5, Sato Dep. at 91:9-96:6. The attorney who prosecuted the '480 patent likewise had no information as to whether the Figure 13 prior art drawing was accurate. Unikel Opp. Dec., Exh. 6, Robinson Dep. at 71:8-73:3. Finally, SEL has produced no prior art device or publication through discovery in this action which is consistent with the structure shown in Figure 13.

In response, SEL claims that Figure 13 was developed based on SEL's own designs and products, and that SEL's failure to provide the exact models does [\*\*12] not support CMO's contention that Figure 13 was a fabrication. One inventor testified that he was familiar with a device that was consistent with Figure 13, and that "at SEL panels with similar structures were being made" in 1996 and 1997. Unikel Opp. Dec., Exh. 4, Hirakata Dep. at 43:19-44:2. The other inventor likewise testified

that the structure disclosed in Figure 13 was one of the configurations that SEL [\*1095] was using in 1997. Unikel Opp. Dec., Exh. 2, Yamazaki Dep. at 257:24-258:19.

Additionally, SEL claims that CMO's own invalidity contentions disclose a prior art reference, *U.S. Patent No. 6,219,124*, which was cited by the examiner during the prosecution of the '480 patent, as disclosing all claim elements except for a conductive spacer placed on top of an insulating film. Schlitter Rep. Dec., Exh. 6 at Exh. B3. Finally, CMO's expert does not corroborate CMO's argument regarding the falsity of Figure 13. Schlitter Rep. Dec., Exh. 1, Mossinghoff Dep. at 97:21-25 (stating that he had no information that any misrepresentations, as opposed to omissions, were made in connection with the prosecution of the patents-in-suit).

Taken together, this evidence at least creates a genuine [\*\*13] issue of material fact as to whether Figure 13 was based on actual products with which the inventors of the '480 patent were familiar, rather than a complete fabrication intended to mislead the PTO.

#### ii. Prior Art Publications

CMO relies on three publications in support of its inequitable conduct claim regarding the '480 patent: *U.S. Patent No. 5,757,456* ("the '456 patent"), Japanese Patent Publication 06-289415 ("the '415 publication"), and Japanese Patent Publication H06-186579 ("the '579 publication"). According to CMO, these references each disclose conductive spacers placed on top of an insulating film rather than in the holes of the film.

This court discussed the '456 patent and the '415 publication at length in its Summary Judgment Order. With respect to the '415 publication, the court held that this reference disclosed conductive spacers held over a second interlayer insulating film, but that the reference did not disclose a "plurality" of such spacers. Summary Judgment Order at 25-27. The court likewise held that the '456 patent does not disclose a plurality of conductive spacers, but made no specific holding as to the location of the conductive spacers that were present. [\*\*14] *Id.* at 32-33. Because SEL did not contest that particular limitation in the prior summary judgment proceedings, however, SEL has waived its objections to CMO's contention that the '456 patent discloses conductive spacers held over a second interlayer insulating film.

SEL nonetheless claims that the '456 patent is cumulative to Figure 13, and therefore immaterial as a matter of law. See *Mentor H/S, Inc. v. Med. Device Alliance, Inc.*, 244 F.3d 1365, 1378 (Fed. Cir. 2001) (holding that "disclosures are not material if they are merely cumulative of references that were already before the examiner"). A reference is cumulative if it "teaches no more than what a reasonable examiner would consider to be taught by the prior art already before the PTO." *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1575 (Fed. Cir. 1997). SEL's contention regarding Figure 13 is that it fails to disclose (1) a second interlayer insulating film provided on said first conductive film, said second interlayer insulating film having at least two openings; and (2) a plurality of conductive spacers held between said first substrate and said second substrate. Because [\*\*15] these two limitations are likewise absent in the '456 reference, SEL argues, the '456 reference is cumulative of the disclosed prior art. However, the '456 reference also discloses conductive spacers held over a second interlayer insulating film, as noted above. This is an additional critical limitation missing from Figure 13. Accordingly, the '456 patent is not cumulative of Figure 13, and SEL has not shown that the '456 patent is immaterial as a matter of law.

SEL likewise argues that the '579 publication is cumulative of Figure 13 because [\*1096] it is "substantively identical" to the '415 publication. SEL again argues that the reference is cumulative because it does not disclose a plurality of conductive spacers. To the extent that the reference discloses conductive spacers held over the second interlayer insulating surface, however, the '579 reference contains a critical limitation absent from Figure 13 and is therefore not immaterial as a matter of law.

#### b. Intent

SEL does not challenge the sufficiency of CMO's evidence related to intent to deceive with respect to the '456 patent or the '579 publication. Accordingly, SEL is not entitled to summary judgment on that basis. SEL does, [\*\*16] however, assert that CMO has provided insufficient evidence of intent to deceive regarding the '415 publication.

Specifically, SEL argues that no one having a duty to disclose prior art to the PTO in connection with the prosecution of the '480 patent was aware of the '415 publication during the prosecution. In light of the intent

requirement, there can be no duty to disclose an unknown prior art reference. See *FMC Corp. v. Manitowoc Co.*, 835 F.2d 1411, 1415 (Fed. Cir. 1987). As SEL points out, CMO's only evidence of knowledge with respect to the '415 publication is the fact that it was cited by Yamazaki and Hirakata, the two inventors of the '480 patent, during the prosecution of *U.S. Patent No. 6,703,643*. SEL claims that SEL did not become aware of this reference until the Japanese Patent Office cited it on December 24, 2002, more than six months after the '480 patent issued. Schlitter Dec., Exh. 23. CMO responds to this argument in a footnote, acknowledging the facts of SEL's temporal argument but claiming that the citation in the '643 patent proves that Yamazaki and Hirakata knew of the '415 publication at some point in time prior to then. CMO then cites the similarities [\*\*17] between the '415 publication and the '579 publication, which was admittedly known to SEL during the '480 prosecution, and argues that a material issue of fact exists as to whether someone involved in the '480 prosecution knew of the '415 publication during that time. While CMO's argument regarding the '415 publication is somewhat weak, inequitable conduct may be shown by circumstantial evidence. In light of the additional factual issues regarding the remaining publications, therefore, the parties would be best served by having the jury consider evidence related to the '415 publication as well.

In sum, SEL is not entitled to summary judgment on CMO's inequitable conduct defense regarding the '480 patent.

#### 2. The '258 Patent

A critical element of the asserted claims of the '258 patent is the step of "etching the exposed portion of the second semiconductor film to form source and drain regions wherein a channel forming region is formed in said first semiconductor film between said source and drain regions." CMO asserts that SEL misrepresented the state of the prior art concerning "overetching" when prosecuting the '258 patent, and withheld material prior art that would have revealed [\*\*18] the true state of the art.

##### a. Overetching

In rejecting the claims of the '258 patent, the examiner stated that the claims were not patentably distinct from the claims of *U.S. Patent No. 6,124,155* ("the '155 patent"), also owned by SEL, and that "it is

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