

United States District Court
For the Northern District of California

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

ADVANCED MICRO DEVICES, INC., et al.,
Plaintiffs and Counterdefendants,
v.
SAMSUNG ELECTRONICS CO., LTD, et al.,
Defendants and Counterclaimants.

No. C 08-986 SI

**ORDER DENYING SAMSUNG’S MOTION
FOR PARTIAL SUMMARY JUDGMENT
and DENYING SAMSUNG’S MOTION
FOR A PROTECTIVE ORDER**

On May 20, 2009, the Court held a hearing on defendants’ motion for partial summary judgment on the invalidity of claims 1 and 4 of U.S. Patent No. 5,545,592. Also before the Court is defendants’ motion for a protective order. For the reasons set forth below, the Court DENIES defendants’ motion for summary judgment and DENIES defendants’ motion for a protective order.

BACKGROUND

Plaintiffs Advanced Micro Devices, Inc. and ATI Technologies, ULC (“AMD”) brought suit against defendants Samsung Electronics Co., Ltd.; Samsung Semiconductor, Inc.; Samsung Austin Semiconductor, LLC; Samsung Electronics America, Inc.; Samsung Telecommunications America, LLC; Samsung Techwin Co., Ltd.; and Samsung Opto-Electronics America, Inc. (collectively, “Samsung”), alleging infringement of seven AMD patents, including United States Patent No. 5,545,592 to Iacoponi (“Iacoponi”), titled “Nitrogen Treatment for Metal-Silicide Contact.”¹ Samsung now moves for summary judgment that asserted claims 1 and 4 of Iacoponi are invalid as anticipated and/or obvious.

¹ The Iacoponi patent is attached as exhibit 1 to the declaration of Christine Saunders Haskett in Support of Samsung’s Motion for Summary Judgment.

1 Iacoponi is a method patent that relates, generally, to the formation of contacts in semiconductor
 2 devices.² The claimed invention creates a simpler, more reliable process for forming low-resistance
 3 contacts in silicon by eliminating the need for a second titanium deposition step. Iacoponi 2:29-31, 53-
 4 57. Claim 1 teaches,

- 5 1. A method for forming a contact to a semiconductor body, said method
 6 comprising the steps of:
 7 [a] forming a metal silicide layer on said body;
 8 [b] exposing said metal silicide layer to nitrogen ionized in a plasma, thereby
 9 converting a portion of said metal silicide layer to a first metal nitride layer;
 10 [c] depositing a layer of a second metal nitride over said metal silicide layer, such
 11 that said second metal nitride layer overlays and engages said first metal nitride layer;
 12 and
 13 [d] depositing a layer of a second metal over said second metal nitride layer.

14 Iacoponi 4:33-46. Dependent claim 4 claims “The method of claim 1, wherein said metal silicide is
 15 titanium silicide, and wherein the second metal nitride is titanium nitride.” Iacoponi 4:57-59. Samsung
 16 contends that claims 1 and 4 were anticipated by U.S. Patent No. 5,975,912 to Hillman (“Hillman”),
 17 titled “Low Temperature Plasma-Enhanced Formation of Integrated Circuits.”³
 18

19 LEGAL STANDARD

20 Summary adjudication is proper when “the pleadings, depositions, answers to interrogatories,
 21 and admissions on file, together with affidavits, if any, show that there is no genuine issue as to any
 22 material fact and that the moving party is entitled to a judgment as a matter of law.” Fed. R. Civ. P. 56c.
 23 In a motion for summary judgment, “[if] the moving party for summary judgment meets its initial
 24 burden of identifying for the court those portions of the materials on file that it believes demonstrate the
 25 absence of any genuine issues of material fact, the burden of production then shifts so that the non-
 26 moving party must set forth, by affidavit or as otherwise provided in Rule 56, specific facts showing that
 27 there is a genuine issue for trial.” *See T. W. Elec. Service, Inc., v. Pac. Elec. Contractors Ass’n*, 809 F.2d
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29 ² A “contact” provides a means of forming an electrical connection to an integrated circuit in
 30 the underlying silicon material. Decl. of Michael Thomas in Supp. of Defs. Mot. for Summ. J. ¶ 5.

31 ³ The Hillman patent is attached as exhibit 2 to the declaration of Christine Saunders Haskett
 32 in Support of Samsung’s Motion for Summary Judgment. The parties do not dispute that Hillman,
 33 which was filed June 3, 1994, is prior art to Iacoponi, which was filed February 24, 1995. *See*
 34 *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996).

1 626, 630 (9th Cir. 1987) (citing *Celotex Corp. v. Catrett*, 477 U.S. 317 (1986)). In judging evidence
 2 at the summary judgment stage, the Court does not make credibility determinations or weigh conflicting
 3 evidence, and draws all inferences in the light most favorable to the non-moving party. *See T.W.*
 4 *Electric*, 809 F.2d at 630-31 (citing *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S.
 5 574 (1986)); *Ting v. United States*, 927 F.2d 1504, 1509 (9th Cir. 1991). The evidence presented by the
 6 parties must be admissible. *See Fed. R. Civ. P. 56(e)*. Conclusory, speculative testimony in affidavits
 7 and moving papers is insufficient to raise genuine issues of fact and defeat summary judgment. *See*
 8 *Thornhill Publ'g Co., Inc. v. GTE Corp.*, 594 F.2d 730, 738 (9th Cir. 1979). Because a patent is
 9 presumed valid, invalidity must be established by clear and convincing evidence. *See Takeda Chem.*
 10 *Indus., Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1355 (Fed. Cir. 2007); *Oakley, Inc. v. Sunlass*
 11 *Hut Int'l*, 316 F.3d 1331, 1339 (Fed. Cir. 2003).

12 13 DISCUSSION

14 1. Samsung's Motion for Summary Judgment

15 A. Anticipation

16 Samsung contends that claims 1 and 4 of Iacoponi were anticipated by Hillman. "A single prior
 17 art reference anticipates a patent claim if it expressly or inherently describes each and every limitation
 18 set forth in the patent claim. Inherent anticipation requires that the missing descriptive material is
 19 'necessarily present,' not merely probably or possibly present, in the prior art." *Trintec Indus., Inc. v.*
 20 *Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (citations omitted).

21 Hillman and Iacoponi teach techniques used in the fabrication of semiconductor devices. The
 22 parties dispute a narrow issue: whether Hillman discloses exposing titanium silicide to nitrogen ionized
 23 in a plasma.⁴ Samsung contends that this limitation is disclosed in the following description from the
 24 specification of Hillman:

25 An integrated contact metalization process can be used by first depositing titanium onto
 26

27
 28 ⁴ A "plasma" is a partially ionized gas, meaning that some of the gas molecules are broken apart
 into "ions," which are atoms or groups of atoms with missing or added electrons.

1 a silicon surface by PECVD.⁵ This will form a layer of titanium silicide. After the
2 titanium deposition an ammonia plasma anneal is performed to provide an upper layer
3 of nitrided silicide titanium. Finally, a titanium nitride layer can be deposited by
PECVD, again in the same reaction chamber. Finally, following the deposition of the
titanium nitride, aluminum or tungsten metal can be sputter deposited.

4 Hillman 15:29-37. AMD argues that in Hillman, the titanium silicide is covered by a layer of titanium
5 and therefore it is titanium, not titanium silicide, that is exposed to the plasma.

6 The Court finds that there are disputed issues of fact as to whether one of ordinary skill in the
7 art would understand the cited portion of Hillman to disclose exposing titanium silicide to nitrogen
8 ionized in a plasma.

9 10 **B. Obviousness**

11 Obviousness under 35 U.S.C. § 103 is a question of law, with underlying factual considerations
12 regarding (1) the scope and content of the prior art, (2) the differences between the prior art and the
13 claimed invention, (3) the level of ordinary skill in the art, and (4) any relevant secondary
14 considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). A claimed invention is invalid
15 for obviousness “if the differences between the subject matter sought to be patented and the prior art are
16 such that the subject matter as a whole would have been obvious at the time the invention was made to
17 a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103.

18 “Although it is well settled that the ultimate determination of obviousness is a question of law,
19 it is also well understood that there are factual issues underlying the ultimate obviousness decision.”
20 *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1349 (Fed. Cir. 2001). Summary judgment may be
21 appropriate if “the content of the prior art, the scope of the patent claim, and the level of ordinary skill
22 in the art are not in material dispute, and the obviousness of the claim is apparent in light of these
23 factors.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007) (citing *Graham*, 383 U.S. at 17).
24 However, a factual dispute as to any one of these elements will defeat the motion. *See Helifix Ltd. v.*
25 *Blok-Lok, Ltd.*, 208 F.3d 1339, 1346 (Fed. Cir. 2000).

26 Samsung argues that it would have been obvious to combine the Hillman process described
27

28 ⁵ Plasma enhanced chemical vapor deposition.

1 above, *see* Hillman 15:29-37, with the immediately preceding paragraph, Hillman 15:20-28, which
2 states that one of the deposition layers could be titanium silicide. The Court finds that there are disputed
3 issues of fact as whether combining these references would have been obvious to one of skill in the art.
4

5 **2. Samsung's Motion for a Protective Order**

6 Samsung has filed a motion for a protective order concerning AMD's request for Samsung to
7 produce technical reports, process flows, and recipes sufficient to show the process Samsung uses to
8 form semiconductor contacts in its processor products. Samsung raises two arguments as to why AMD
9 is not entitled to this discovery.

10 First, Samsung points out that in AMD's preliminary infringement contentions, AMD did not
11 accuse Samsung processors of infringing Iacoponi. Instead, with regard to Iacoponi, AMD accused only
12 Samsung's memory products. AMD responds that it is entitled to this discovery because the processors
13 and memory products are reasonably similar.

14 Some district courts have found that in patent cases, "the scope of discovery may include
15 products and services reasonably similar to those accused in the preliminary infringement contentions."
16 *Dr. Sys., Inc. v. Fujifilm Med. Sys. USA, Inc.*, 2008 WL 1734241 *3 (S.D. Cal. Apr. 10, 2008); *see also*
17 *Epicrealm, Licensing, LLC v. Autoflex Leasing, Inc.*, 2007 WL 2580969 *3 (E.D. Tex. Aug. 27, 2007).
18 Here, AMD contends that it discovered during a recent deposition that Samsung's processors use the
19 same process for making semiconductor contacts as the accused memory products. Under AMD's
20 theory, the products are reasonably similar insofar as the processes for forming semiconductor contacts.
21 Indeed, AMD seeks to prove that the products use identical processes. The Court agrees with AMD that
22 its failure to specifically accuse the processor products is not dispositive as Samsung had notice that
23 AMD accused what is purportedly the same process in a different product.

24 Second, Samsung argues that production of the requested materials would be unduly burdensome
25 because Samsung's "processors" include many different types of products, and because Samsung has
26 already incurred expenses responding to discovery on Iacoponi, including bringing an engineer from
27 Korea to San Francisco for a deposition. AMD responds that it is willing to accept production of
28 documents relating to exemplar products. In addition, at this time it requests a limited set of documents.

1 The Court also notes that it appears that repeating the deposition of the Korean engineer is not necessary
2 at this juncture. The Court agrees with AMD that production of the requested documents would not be
3 unduly burdensome to Samsung.


4 For these reasons, the Court DENIES Samsung’s motion for a protective order and orders
5 Samsung to produce, **within 21 days of the entry of this order**, technical reports, process flows, and
6 recipes sufficient to show the process for making Samsung processor contacts.

7
8 **CONCLUSION**

9 For the foregoing reasons and for good cause shown, the Court hereby DENIES Samsung’s
10 motion for summary judgment of invalidity [Docket No. 143] and DENIES Samsung’s motion for a
11 protective order [Docket No. 185].

12 **IT IS SO ORDERED.**

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14 Dated: June 24, 2009

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17 SUSAN ILLSTON
18 United States District Judge
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United States District Court
For the Northern District of California