United States District Court,
S.D. New York.

**Gertrude Neumark ROTHSCHILD,**
Plaintiff.
v.
**CREE, INC,**
Defendant.
**Gertrude Neumark ROTHSCHILD,**
Plaintiff.
v.
**PHILIPS LUMILEDS LIGHTING COMPANY L.L.C., Future Electronics Inc. and Future Electronics Corp,**
Defendants.

No. 05 CIV 5939 WCC, 05 CIV5940 WCC

**July 2, 2007.**

Sidley Austin, LLP, New York, New York and Kasowitz, Benson, Torres & Friedman, New York, New York, for Plaintiff, James D. Zirin, Asheesh P. Puri, Peter J. Toren, of counsel.

Weil, Gotshal & Manges LLP, New York, New York, for Defendant Cree, Inc., David C. Radulescu, of counsel.

Morgan, Lewis & Bockius LLP, New York, New York, for Defendants Philips Lumileds Lighting Company L.L.C., Future Electronics Inc. and Future Electronics Corp., Stephen B. Judlowe, Michael J. Lyons, Francis E. Morris, of counsel.

Thomas R. Davis, Kevin He, Morgan, Lewis & Bockius LLP, New York, New York, Scott D. Stimpson, White Plains, New York, of counsel.

***OPINION AND ORDER***

CONNER**, Senior J.**

Plaintiff Gertrude Neumark Rothschild moves for reconsideration or clarification of this Court's Opinion and Order dated May 3, 2007 construing certain terms of the claims of plaintiff's U.S. patents Nos. 4,904,618 and 4,252,499 (the " '618 patent" and " '499 patent" respectively) following a *Markman* hearing on March 19, 2007. Familiarity with that Opinion and Order is assumed. For the reasons stated hereinafter, plaintiff's motion is granted in part and denied in part. Plaintiff also asks the Court to adopt the construction of claim terms agreed upon by the parties; that request is unopposed and is granted.

**Standard for Reconsideration**

Reconsideration is "an extraordinary remedy to be employed sparingly in the interests of finality and conservation of scarce judicial resources." In re Health Mgmt. Sys. Sec. Litig., 113 F.Supp.2d 613, 614 (S.D.N.Y.2000). A motion for reconsideration should be granted only where the Court overlooked critical facts or controlling decisions, *see Pollack v. Safway Steel Prods.,* No. 03 Civ. 4067, 2007 U.S. Dist. LEXIS 24746, at (S.D.N.Y. Mar. 30, 2007), and not "where the moving party seeks solely to relitigate an issue already decided." Convolve, Inc. v. Compaq Computer Corp ., No. 00 Civ. 5141, 2007 WL 415145, at (S.D.N.Y. Feb. 7, 2007).

**The Challenged Constructions**

Plaintiff seeks reconsideration of the Court's construction of the following two claim terms:

**1. "*forming ... from*"**

The complete phrase, which appears in the preamble of claim 10 of the '499 patent, reads: "A method of forming a low resistivity semiconductor from a wide band-gap semiconductor substrate...." The Court construed this phrase to mean "forming from a pre-existing substrate." The Court's construction was based primarily upon the ordinary meaning of the words themselves: you obviously cannot form an X *from* a Y unless you begin with a Y. The Court reinforced this construction by reference to the prosecution history of the '499 patent. In requiring restriction of the application to either the product claims or the method claims, the Examiner stated:

... the device of the group I invention [the product claims] could be made by [a process] materially different from those of the group II invention [the method claims], e.g., hydrogen can be incorporated into the semiconductor during growth *rather than introduction of hydrogen into the semiconductor after it [is] grown, as is claimed in the instant application*.

(Cree Op. Br., Ex. B at 2, emphasis added.) Plaintiff did not challenge the Examiner's statement that the method claims, including application claim 20 which became claim 10 of the '499 patent, were directed to a process of incorporating hydrogen into a semiconductor crystal after it is grown, but merely complied with the restriction requirement by cancelling all the product claims, which would have covered the semiconductor whether the hydrogen was introduced into the substrate during its growth or thereafter. By not refiling these claims, plaintiff effectively abandoned such coverage.

In her motion for reconsideration, plaintiff ignores the Court's primary reliance on the ordinary meaning of the words and attacks only the implications of the requirement for restriction and plaintiff's response thereto. Plaintiff argues that because the Examiner's statement referred to the introduction of hydrogen, "it was directed only to the first embodiment concerning the introduction of atomic hydrogen, not the embodiment directed to the introduction of atomic hydrogen and another dopant." (Pl. Mem. at 3 .) The Court cannot agree with this strained misreading of the Examiner's statement. The Examiner did not distinguish between method claims calling for the introduction of atomic hydrogen alone and method claims calling for the introduction of atomic hydrogen together with another dopant. Instead he required restriction of the application to either the product claims or the method claims, meaning *all* of the method claims, including those, such as patent claims 1-9 and 22, calling merely for the introduction of atomic hydrogen and those, such as patent claims 10-21, calling for the introduction of atomic hydrogen together with another dopant. His statement referred only to the introduction of hydrogen for the obvious reason that the introduction of

hydrogen was common to all of the method claims.

Plaintiff also argues (Pl. Mem. at 4-5) that because the Examiner rejected claim 20 over the Fan reference, which discloses "growing the ZnSe layer in an environment that includes hydrogen," the Examiner must have understood claim 20 to cover incorporation of hydrogen during growth of the crystal. However the rejection was based alternatively on either anticipation (35 U.S.C. s. 102) or obviousness (35 U.S.C. s. 103). It therefore carried no implication that the Examiner understood claim 20 to cover incorporation of hydrogen during crystal growth.

Plaintiff further argues (Pl. Mem. at 6) that the "plain meaning" of the verb "to form" is to "make or produce." That argument would have force if we were construing the word "forming" and not the phrase "forming ... from." Plaintiff's studied disregard of the important word "from" is unpersuasive, to say the least.

There is other intrinsic evidence, not previously discussed, further reinforcing the Court's construction of the claim term in question. Claim 10 itself calls for " *selectively* doping the semiconductor substrate" (emphasis added). The specification of the '499 patent (at 3:48-51 and 4:33-36) teaches that such selective doping may be achieved by shielding from the hydrogen the side of the substrate that has good conductivity so that there will be "no or minimal diffusion of hydrogen into that side." Obviously such shielding can be accomplished only on a pre-existing solid crystal and not during growth of the crystal from a melt.

In sum, plaintiff has presented no valid reason for the Court to change its construction of this term. Alternatively, plaintiff seeks clarification of that construction. Although plaintiff's explanation of the need for clarification would itself benefit from clarification, plaintiff appears to argue that although the claim term in question has been construed to require doping of a pre-existing substrate, that construction "still covers growing simultaneously with doping" because the low resistivity semiconductor called for in the preamble of claim 10 is not formed until the hydrogen is removed. If that is what plaintiff is trying to say, it is a hopeless non sequitur. The fact that the semiconductor's resistivity remains high until removal of the hydrogen clearly does not mean that the term "forming ... from ... a ... substrate" in the preamble must be construed to cover "forming" during growth of the substrate. The preamble's recited objective of "forming a low resistivity semiconductor from a wide band-gap semiconductor substrate" can obviously be achieved by doping a pre-existing substrate with atomic hydrogen and another dopant, for example by the joint diffusion method, as taught in the specification of the '499 patent (at 5:8-21), and later removing an effective amount of the hydrogen (as taught at 5:45 to 6:04). The range of temperatures recommended for the removal step is 100 (deg.) to 500 (deg.) C. As plaintiff herself points out (Pl. Suppl. Mem. at 2-3), these temperatures are far below the melting point of the substrate material, making it clear that the removal step which completes the claimed process is not performed during growth of the substrate from a melt.

There is no apparent reason for clarification of the Court's construction of this term. It is difficult to imagine a clearer way to say that the claim term requires a pre-existing substrate and that it does not cover doping during growth of the substrate. Plaintiff's motion for reconsideration is denied insofar as it relates to this construction.

**2. "*doping ... with ... atomic hydrogen*"**

This term is part of the phrase "selectively doping the semiconductor substrate with an effective amount of dopant to induce acceptable conductivity, together with an effective amount of atomic hydrogen to act as a

compensator and block unacceptably high occurrences of other compensators" which appears in claim 10 of the '499 patent. The Court construed this term to mean "incorporating atomic hydrogen not produced by disintegration of ambient gases."

As plaintiff points out (Pl. Mem. at 13, n.8), this construction was contrary to the Court's first, intuitive reaction to the term, expressed at the *Markman* hearing "I think, read literally, as long as you dope the semiconductor with atomic hydrogen together with a suitable dopant, or effective amount of dopant to induce acceptable conductivity, it doesn't make any difference whether that atomic hydrogen started out as molecular hydrogen or started out as an element of ammonia." (Tr. 128:10-15.). The Court was persuaded to change this initial, literal construction of the term on the primary basis of an argument made by plaintiff during prosecution of the application for the '499 patent. The Examiner rejected application claim 20 (patent claim 10) as unpatentable over a prior publication of Fan, *et al.,* stating, "Since in the Fan process the crystal is grown in a hydrogen ambient it is believed that hydrogen is inherently incorporated into the ZnSe layer." (Cree Op. Br., Ex. B at 5.) Plaintiff did not challenge the Examiner's statement about the inherent creation and incorporation of hydrogen in Fan's process, but instead responded by arguing, "Fan describes the use of molecular hydrogen ($H_2$ gas). Claim 20 specifically describes the use of atomic hydrogen." ( Id., Ex. F at 2.) The Court concluded that this response implied a construction of the claim term to exclude processes of the type disclosed in Fan, in which an ambient hydrogen-containing gas could inherently disintegrate under the conditions present in the reaction vessel, creating atomic hydrogen, which could dope the semiconductor crystal being grown therein.

This implication was reinforced by the fact that the specification of the '499 patent did not mention the possibility of obtaining atomic hydrogen from the disintegration of ambient hydrogen-containing gases, but instead disclosed (at 3:62 to 4:9) two more cumbersome (and presumably more expensive) processes for generating atomic hydrogen. Thus the Court ruled that plaintiff had effectively disclaimed the use of atomic hydrogen derived from the disintegration of ambient hydrogen-containing gases.

Now, after reconsideration, the Court believes that its initial, literal construction of this claim term (Tr.128:10-15) was correct and that the construction set forth in the Opinion and Order of May 3, 2007 should be withdrawn. A careful analysis of the controlling decisions relating to prosecution history estoppel convinces this Court that plaintiff's response to the rejection based on the Fan, *et al.,* publication did not constitute such a clear, unambiguous and deliberate disavowal of claim coverage as to require modification of the plain meaning of the claim term by the addition of exclusionary language.

In Omega Engineering, Inc. v. Raytek Corp., 334 F.3d 1314, 1323-26 (Fed.Cir.2003), the Court thoroughly reviewed the relevant decisions of the Supreme Court and the Federal Circuit and summarized the applicable law as follows:

We indulge a "heavy presumption" that claim terms carry their full ordinary and customary meaning, CCS Fitness [v. Brunswick Corp.], 288 F.3d [1359] at 1366 [ (Fed.Cir.2002) ], ... unless the patentee unequivocally imparted a novel meaning to those terms or expressly relinquished claim scope during prosecution, *see* Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325-26 (Fed.Cir.2002).... To balance the importance of public notice ..., we have thus consistently rejected prosecution statements too vague or ambiguous to qualify as a disavowal of claim scope. *E.g.,* Schwing GmbH v. Putzmeister AG, 305 F.3d 1318, 1324-25 (Fed.Cir.2002).... Rather we have required the alleged disavowing statements to be both so clear as to show reasonable clarity and deliberateness.... Consequently, for prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both

clear and unmistakable.

(Footnote omitted.) In Northern Telecom Ltd. v. Samsung Electronics, Co., 215 F.3d 1281, 1294-95 (Fed.Cir.2000), the Court stated:

In sum, we find that the prosecution history fails to prove Samsung's assertion that "plasma etching" in claim 1 of the '967 patent requires the exclusion of ion bombardment. That is, under these circumstances, we cannot conclude that Samsung has demonstrated that the patentees-with reasonable clarity and deliberateness, *see* In re Paulsen, 30 F.3d 1475, 1480 (Fed.Cir.1994)-defined "plasma etching" as excluding ion bombardment. *See* Johnson Worldwide [v. Zebco Corp.], 175 F.3d [985] at 989 [ (Fed.Cir.1999) ] (noting the "heavy presumption in favor of the ordinary meaning of claim language").

In the present case, in response to the Examiner's rejection of the claim as unpatentable over the Fan reference, plaintiff merely stated that "Fan describes the use of molecular hydrogen ($H_2$ gas). Claim 20 specifically describes the use of atomic hydrogen." (Cree Op. Br., Ex. F at 2.) The essential message of these two sentences is that Fan does not describe the use of atomic hydrogen, which is undeniably true. Even if molecular hydrogen, under the conditions in Fan's reaction chamber, inherently breaks down to create atomic hydrogen, this was not "described" by Fan. Nor is there the slightest indication that Fan was aware that this would happen or that it could result in doping of the semiconductor or that such doping would serve any useful purpose. Thus Fan also does not describe the "use" of atomic hydrogen. This reading of plaintiff's response is eminently reasonable.

This response was surely not a "clear and unambiguous" disavowal of coverage of processes in which the atomic hydrogen is derived from the breakdown of hydrogen-containing gases. And it surely was not a "deliberate" disavowal of such coverage, because this would render claim 10 and all the claims dependent on it a practical nullity. As plaintiff points out (Pl. Mem. at 13), atomic hydrogen cannot be not found in nature (at least on this earth) and can only be obtained from the disintegration of hydrogen-containing compounds. Even the two exemplary methods of generating atomic hydrogen mentioned in the specification of the '499 patent necessarily involve the disintegration of hydrogen-containing compounds (unless some modern alchemist has discovered a way to transmute atoms of other elements into hydrogen atoms). Clearly plaintiff did not deliberately disclaim the use of atomic hydrogen produced in the simplest and cheapest way-the disintegration of ambient hydrogen-containing gases. She obviously realized that, if the claims of her patent excluded coverage of that convenient source of atomic hydrogen, commercial producers of LEDs using the methods taught by her patent would not likely rely on any other source. She was certainly not trying to persuade the Examiner to allow claims she knew would be worthless.

Without a clear, unambiguous and deliberate disavowal of the excluded coverage, the prosecution history furnishes no justification for disregarding the plain and ordinary meaning of the words of the claim. The Court's previous failure to give due consideration to the controlling precedents discussed above furnishes ample-indeed compelling-basis for granting in part plaintiff's motion for reconsideration.

The Court therefore withdraws its previous construction of the term "doping ... with ... atomic hydrogen" and now construes it to mean:

doping with atomic hydrogen (from any source).

**The Agreed Upon Constructions**

Plaintiff also moves for amendment of the Opinion and Order to reflect the construction of eleven claim terms agreed upon by the parties. In the Opinion and Order, the construction of nine of those terms was adopted by the Court *in haec verba*. However, the Opinion and Order omitted the construction of one term which had been agreed upon by the parties and included the construction of another term that the parties agree needs no construction. The Court therefore amends the Opinion and Order of May 3, 2007 to adopt and incorporate herein the list of Agreed Upon Claim Constructions annexed hereto.

SO ORDERED.

AGREED UPON CLAIM CONSTRUCTIONS

| Patent | Claim Term | Agreed Upon Construction |
|---|---|---|
| '618 | "non-equilibrium incorporation of a dopant" | incorporation of a dopant in excess of its equilibrium solubility at a particular temperature and concentration of compensating species |
| '618 | "dopant" | an impurity added to a semiconductor material |
| '618 | "wide band gap" | a band gap of at least 1.4 electron volts |
| '618 | "compensating dopant" | a dopant which provides an acceptor in n-type material or a donor in p-type material |
| '618 | "in excess of the solubility" | the concentration of the less mobile dopant is greater than its concentration in the absence of the more mobile dopant |
| '499 | "a tendency to become compensated" | *Construction of term unnecessary* |
| '499 | "effective amount" | a sufficient quantity of the recited material to provide the recited result |
| '499 | "atomic hydrogen" | hydrogen atoms not bonded to other atoms |
| '499 | "block unacceptably high occurrences of other compensators" | the atomic hydrogen blocks the formation or introduction of other compensators that would otherwise have resulted in a high resistivity semiconductor |
| '499 | "limit other movement" | limit changes in the crystal structure and location of dopants in the semiconductor |
| '499 | "heated to a temperature between about [X] (deg.) to [Y] (deg.) C" | heating to a temperature of at least about [X] (deg.) C but to no more than about [Y] (deg.) C |
| '499 | "wide band gap" | a band gap of at least about 1.4 electron volts |

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