

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

COMMISSARIAT À L'ENERGIE	:	
ATOMIQUE,	:	
	:	
Plaintiff,	:	
	:	
v.	:	Civil Action No. 03-484-MPT
	:	
SAMSUNG ELECTRONICS CO., et al.,	:	CONSOLIDATED CASES
	:	
Defendants.	:	

MEMORANDUM ORDER

INTRODUCTION

This is a patent infringement case. On May 19, 2003 Commissariat à l'Energie Atomique ("CEA") filed a complaint against Samsung Electronics Co., Ltd. ("Samsung"), and others, for infringement of United States Patent Nos. 4,701,028 ("the '028 patent") and 4,889,412 ("the '412 patent") (collectively "the patents-in-suit").¹ The '028 patent and the '412 patent are directed to technology involving the design and manufacture of liquid crystal displays ("LCDs") and related products.² An LCD is a type of flat panel display that is used in products such as computer monitors.³

On October 3, 2007 the court issued its Claim Construction Memorandum Order (D.I. 1076) construing certain claim terms of the patents-in-suit. Currently before the court is Samsung's Motion for Summary Judgment of Invalidity of Claims 1, 2, and 12 of

¹ D.I. 1. CEA has since filed amended complaints, but the patents-in-suit remain the same. See D.I. 371; D.I. 373; D.I. 379.

² D.I. 1 at 2.

³ *Id.*

U.S. Patent No. 4,889,412 on the Grounds that These Claims are Anticipated by the Prior Art.⁴ For the reasons stated below, the court grants Samsung's motion on claim 1 and 2 and denies the motion on claim 12.

STANDARD OF REVIEW

A grant of summary judgment pursuant to Federal Rule of Civil Procedure 56(c) is appropriate "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with affidavits, if any, 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."⁵ This standard is applicable to patent cases.⁶ A Rule 56(c) movant bears the burden of establishing "that there is an absence of evidence to support the nonmoving party's case."⁷ The nonmovant must be given the benefit of all justifiable inferences and the court must resolve any disputed issue of fact in favor of the nonmovant.⁸

POSITIONS OF PARTIES

In its opening brief, Samsung argued that three references are invalidating anticipatory prior art: the '028 patent, European Patent Publication EP 0,162,775 ("EP '775"); and published French patent application 2,564,605 ("FR '605 application").⁹ In its reply brief, however, Samsung, while still maintaining that the '028 patent and FR

⁴ D.I. 675 (Defendants AU Optronics Corporation's, Samsung Electronics, Co., LTD.'s and Chi Mei Optoelectronics Corp.'s ("Defendants") Motion for Summary Judgment of Invalidity of Claims 1, 2, and 12 of U.S. Patent No. 4,889,412 on the Grounds that These Claims are Anticipated by the Prior Art). Since briefing on this motion, the other defendants referenced in the title of the motion under consideration are no longer parties to this litigation. Samsung is the sole remaining defendant and has proceeded with this motion. Therefore, the court's reference to "Samsung" will be understood as referring to any particular former-defendant's arguments and/or experts.

⁵ Fed. R. Civ. P. 56(c).

⁶ *Johnson v. IVAC Corp.*, 885 F.2d 1574, 1576-77 (Fed. Cir. 1989).

⁷ *Celotex Corp. v. Catrett*, 477 U.S. 317, 325 (1986).

⁸ *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 456 (1992).

⁹ D.I. 676 at 2.

'605 are anticipatory references, discusses only the EP '775 reference. Samsung states that "the court need not decide" its summary judgment motion with regard to whether the '028 patent and FR '605 references invalidate claims 1, 2, and 12 of the '412 patent.¹⁰ Based on Samsung's representation, the court considers Samsung's original arguments for summary judgment based on the '028 patent and the FR '605 application withdrawn and denies Samsung's motion with regard to those two references as moot. The court will consider Samsung's arguments regarding whether EP '775 anticipates claims 1, 2, and 12 of the '412 patent.

CEA contends that EP '775 does not disclose all of the elements of claims 1, 2, and 12 of the '412 patent "and is directed to a materially different invention that actually teaches away from the invention claimed in the '412 Patent."¹¹ Specifically, CEA maintains that EP '775 does not teach a compensation layer separate from the polarization means. Also, EP '775 purportedly lacks the proper disclosure to enable the use of a uniaxial medium film of negative optical anisotropy.¹² Additionally, CEA notes that EP '775 was before the PTO during prosecution of the '412 patent, and was considered by the PTO, which nevertheless permitted the '412 patent to issue.

DISCUSSION

"A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims

¹⁰ D.I. 849 at 19 n.7; *id.* at 1.

¹¹ D.I. 805 at 4.

¹² *Id.*

shall be presumed valid even though dependent upon an invalid claim.”¹³ “To overcome this presumption of validity, the party challenging a patent must prove facts supporting invalidity by clear and convincing evidence.”¹⁴

The patent statute provides that “a person shall be entitled to a patent unless . . . the invention was patented or described in a printed publication in this or a foreign country . . . more than one year prior to the date of the application for patent in the United States.”¹⁵ In order to anticipate, a single prior art reference must disclose each and every limitation of the claimed invention, either expressly or inherently.¹⁶ Although anticipation is a question of fact, it may be decided on summary judgment if there is no genuine dispute of material fact on the record.¹⁷ There must be no difference between the claimed invention and the reference disclosure as viewed by a person of ordinary skill in the field of the invention.¹⁸ Determining whether the claims of a U.S. patent are anticipated is a two-step process. The claims are first interpreted to determine their scope. Next, the properly-construed claims are compared to the anticipatory reference.¹⁹

Samsung argues that EP '775 is a 35 U.S.C. § 102(b) invalidating prior art reference. Specifically, Samsung argues that figure 4 of EP '775 and related descriptive text disclose each of the limitations of claims 1, 2, and 12 of the '412

¹³ 35 U.S.C. § 282.

¹⁴ *Schumer v. Lab. Computer Sys., Inc.*, 305 F.3d 1304, 1315 (Fed. Cir. 2002).

¹⁵ 35 U.S.C. § 102(b).

¹⁶ *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1327 (Fed. Cir. 2001).

¹⁷ *Id.*

¹⁸ See *Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991).

¹⁹ *Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003).

patent.²⁰ The '412 patent was filed in the United States on February 17, 1987.²¹ The EP '775 application was filed on May 10, 1985 and published on November 27, 1985.²² Because EP '775 purportedly describes the inventions claimed in the '412 patent more than a year prior to the filing of the '412 patent, it is a potentially anticipatory prior art reference.²³

Samsung supports its anticipation arguments with a declaration of its invalidity expert (attached as an exhibit to its opening brief), Dr. Iam-Choon Khoo ("Khoo").²⁴ In that declaration Khoo opines that each of the elements of claims 1, 2, and 12 of the '412 patent is disclosed in EP '775 and appends claim charts specifying the elements of those claims and supporting disclosure from EP '775. On March 24, 2006, Terry J. Scheffer ("Scheffer") served a rebuttal report to Khoo's invalidity report arguing that EP '775 does not anticipate the those claims.²⁵

²⁰ EP '775 and the '028 patent each contain the same figure 4 and substantially the same disclosure. As a result, the parties' arguments concerning whether EP '775 anticipates the '412 patent may include a recitation of their arguments concerning whether the '028 patent anticipates. See, e.g., D.I. 805 at 11 ("Defendants rely on figure 4 of the '028 patent[and] EP '775 . . . as their basis for invalidity. Figure 4 in each document is an exploded view of a specific embodiment described in the respective documents." (citation omitted)); D.I. 806, Ex. 1 at 18 ("Dr. Khoo asserts that the '775 patent is very similar to the disclosure of the '028 Patent, and that his reasoning as provided for the '028 applies equally in regard to the '775 patent. If . . . Dr. Khoo is asserting that the '775 patent anticipates asserted claim 1 of the '412 Patent, then I disagree with Dr. Khoo for at least the same reasons as are provided for my rejection of his assertions concerning the '028 Patent").

²¹ D.I. 677, Part 2, Ex. 1, Tab A ('412 patent). The '412 patent was filed on February 17, 1987, claiming a priority date of February 26, 1986.

²² *Id.*, Ex. 1, Tab B at AUO026268. EP '775 was filed May 10, 1985, claiming a priority date of May 18, 1984.

²³ Although CEA argues that EP '775 does not disclose the inventions claimed in the '412 patent, it does not dispute that EP '775 is prior art under 35 U.S.C. § 102(b).

²⁴ D.I. 677, Part 2, Ex. 1 (hereinafter "Khoo Declaration"). The Khoo Declaration is dated May 17, 2006. Samsung's motion and opening brief are dated May 22, 2006.

²⁵ D.I. 806, Ex. 1 (Rebuttal to the Expert Report of Dr. Iam-Choon Khoo by Terry J. Scheffer) (hereinafter "Scheffer Rebuttal Report"). The Scheffer Rebuttal Report was filed in response to Khoo's expert report of February 24, 2006. CEA's opposition brief is dated June 6, 2006. The court notes that Scheffer states "based on my review and analysis of the alleged prior art cited by Dr. Khoo, it is my opinion that such alleged prior art does not show each and every limitation of the asserted claims in Patents-in-Suit . . ." Scheffer Rebuttal Report at 8. Scheffer's rebuttal to Khoo, however, does not specify which

The court notes that CEA did not directly respond to the element-by-element anticipation analysis presented in Samsung's opening brief. Instead, CEA makes several general arguments as to why EP '775 does not anticipate the '412 patent as well as arguing that particular elements of the claims at issue here are not disclosed in EP '775. Because Samsung bears the burden of establishing that each element of the claims at issue are disclosed in EP '775, the court will review Samsung's evidence on each element whether or not CEA responded to Samsung's evidence as to a particular element.²⁶

Prior to examining the particular elements of claims 1, 2, and 12 of the '412 patent and determining whether they are disclosed in EP '775, the court will address certain of CEA's general arguments. First, CEA notes that EP '775 was prior art before the PTO during the prosecution of the '412 patent and that the examiner nevertheless allowed the patent to issue. CEA is correct that a patent is presumed valid under 35 U.S.C. § 282 and that "[t]his statutory presumption derives in part from recognition of

limitation of claim 1 of the '412 patent is not disclosed by EP '775. Scheffer states that his reasons for disagreeing with Khoo's opinion that EP '775 anticipates claim 1 of the '412 patent are the same reasons Scheffer set forth as to why the '028 patent does not anticipate that claim. *Id.* at 18. The sum total of Scheffer's Rebuttal Report, under the heading "Anticipation by Clerc *et. al* '028 Patent," as to why claim 1 of the '412 patent is not anticipated (other than a legal question specific to the '028 patent as to whether it is prior art) is: "I further believe that a technical distinction exists between the '412 Patent and the '028 patent. In particular, I believe that the '028 Patent can be distinguished from the '412 Patent because the '412 Patent improved upon the performance of the '028 Patent by developing the first technique to produce a negative uniaxial film and using such a film to further improve the viewing angle. In particular, the introduction of a single negative uniaxial film was able to provide an improved viewing angle in the transmissive configuration. The use of a negative uniaxial layer also provided an improved viewing angle in all azimuthal angles." *Id.*

²⁶ Included in Samsung's briefing is an argument related to a patent owned by CEA involved in litigation in France. The court finds that argument and the French tribunal's determination, based on a different patent and subject to French patent law and not United States patent law, to be irrelevant to this court's determination of Samsung's current motion.

the technological expertise of the patent examiners.”²⁷ The Federal Circuit has also stated that “[t]he Courts are the final arbiter of patent validity and, although courts may take cognizance of, and benefit from, the proceedings before the patent examiner, the question is ultimately for the courts to decide, without deference to the ruling of the patent examiner.”²⁸ Therefore, the fact that the examiner may have considered EP ‘775 during prosecution is not dispositive of Samsung’s motion.

Next, CEA avers that: “[w]ithin the context of the ‘412 Patent, it is clear that the term ‘uniaxial medium of negative optical anisotropy’ means ‘a new type of birefringent, manufactured, plastic material having optical properties of a product resulting from the process disclosed in the specification and illustrated in figures 4 and 5.’”²⁹ In its claim construction order, however, the court rejected CEA’s proposed construction of the entire phrase “uniaxial medium of negative optical anisotropy” and construed “uniaxial medium” and “negative optical anisotropy” as separate terms.³⁰ Additionally, while CEA repeatedly references “uniaxial medium of negative optical anisotropy” in its brief in opposition to Samsung’s motion, that phrase is not a limitation of claims 1, 2, or 12 of

²⁷ D.I. 805 at 16 (quoting *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1139 (Fed. Cir. 1985)).

²⁸ *Quad Environmental Tech. v. Union Sanitary Dist.*, 946 F.2d 870, 876 (Fed. Cir. 1991); see also *IPXL Holdings, Inc. v. Amazon.Com LLC*, 430 F.3d 1377, 1381-83 (Fed. Cir. 2005) (affirming grant of summary judgment of invalidity for anticipation by reference considered by examiner where district court held that there could be no genuine dispute that the reference disclosed each limitation of the asserted claims of the patent-in-suit).

²⁹ D.I. 805 at 7.

³⁰ See D.I. 1076 at 14-17 (construing “uniaxial medium” as “a type of birefringent material wherein the values of two of the principal optical indices (called the ordinary indices) are equal to each other and the third optical index (called the extraordinary index) has a different value”); *id.* at 18-19 (construing “negative optical anisotropy” as “a characteristic of a birefringent material wherein the values of two of the three principal indices (called the ordinary indices) are equal to each other and the third optical index (called the extraordinary index) is less than the other two”).

the '412 patent.³¹

In connection with CEA's last argument, it also argues that because EP '775 "does not disclose the uniaxial medium of negative optical anisotropy as claimed in the '412 Patent, it does not enable the full scope covered at least by Claims 1, 2 and 12 of the '412 patent."³² Samsung is correct, however, that "a prior art reference is not

³¹ Interestingly, this point is made by CEA which reminds the court that "claim 1 requires . . . 'a medium for compensating,' and claim 3 requires that 'the compensating medium is uniaxial medium of negative optical anisotropy.'" D.I. 805 at 14. Dependent claim 3 is not subject to Samsung's current motion and its requirement that "the compensating medium is uniaxial medium of negative optical anisotropy" indicates that the "medium for compensating" of independent claim 1 is broader and includes biaxial films. This point is made by Samsung's invalidity expert, Khoo. CEA argues that Khoo "clearly states that the scope of at least Claims 1 and 2 of the '412 Patent cover liquid crystal cells employing negative uniaxial compensation films." *Id.* at 22 (citing Khoo Declaration, ¶ 8). Paragraph 8 of the Khoo Declaration recites: "[c]ertain claims of the '412 patent relate to a biaxial film with N3e as the weakest index. That is, the film has the relationship $(N1o \neq N2o) > N3e$. Asserted claim 12 is an example. Other claims require a uniaxial film with N3e as the weakest index. That is, the film has the relationship $(N1o = N2o) > N3e$. Asserted claims 3-5 are examples. Other claims are 'generic' to *both* uniaxial *and* biaxial films with N3e as the weakest index. That is, they include *both* biaxial *and* uniaxial films within their scope. Asserted claims 1 and 2 are examples." Khoo Declaration, ¶ 8 (emphasis added). Samsung's argument is that claims 1 and 2 are not restricted to uniaxial film and that the question for the court with regard to those claims is simply "whether a single piece of prior art discloses (in addition to the other elements) a liquid crystal cell assembly with at least one layer of medium for compensating having the recited optical index configuration . . ." D.I. 849 at 3. This also answers CEA's argument that "Defendants choose to not only ignore this important feature of the '412 Patent[, the development of a uniaxial medium of negative optical anisotropy], but also explicitly take the misleading and incorrect position that uniaxial media of negative optical anisotropy are irrelevant when seeking the invalidity of the '412 Patent." D.I. 805 at 22. Samsung is not seeking the invalidity of the '412 *patent*, it is seeking the invalidity of certain *claims* of that patent which purportedly do not require uniaxial media of negative optical anisotropy.

³² D.I. 805 at 23-24. The court notes the comments of the Federal Circuit in *Kim v. Conagra Foods, Inc.*, wherein a broad independent claim was not found to require a specific object of the invention recited in the specification. ("The mere fact that one object of the invention is to produce a slow acting oxidant which is functional throughout the entire manufacturing process does not mean that this particular feature was adopted as a limitation in each claim of the patent. The specification does not require that the potassium bromate replacer must necessarily be a slow acting oxidant, only that particular potassium bromate replacers perform that function. Thus the fact that the patent here discloses the advantages of a slow acting oxidant does not mean that all the claims are directed to such an oxidant. Indeed, Kim chose to claim a 'slow acting' oxidant in dependent claim 7, while her independent claims were directed to a more general potassium bromate replacer. The doctrine of claim differentiation suggests that the independent claims here should not include explicit limitations of a dependent claim." 465 F.3d 1312, 1319 (Fed. Cir. 2006) (citations omitted)).

required to enable the entire claim scope to anticipate.”³³

Finally, CEA argues that “EP ‘775 teaches away from the scope of the ‘412 Patent as it clearly states that biaxial films are preferred over uniaxial films.”³⁴ The Federal Circuit has stated, however, that “[a] reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. Thus, the question whether a reference ‘teaches away’ from the invention is inapplicable to an anticipation analysis.”³⁵

Therefore, the court finds that CEA’s general arguments do not rebut Samsung’s *prima facie* evidence of anticipation discussed below.

‘412 Patent, Claim 1

Claim 1 of the ‘412 patent recites (with each element numbered in brackets):

[1] A liquid crystal cell assembly using the electrically controlled birefringence effect and having spaced apart sides, one of which is exposed to an incident light, said assembly comprising:

[2] a nematic liquid crystal molecular layer of positive optical anisotropy;

[3] at least two electrodes, one on either side of said liquid crystal layer, with the electrode located on said one side exposed to incident light being transparent;

[4] the molecules of said liquid crystal layer being substantially oriented in a homeotropic direction in the absence of a voltage between said electrodes;

³³ D.I. 849 at 8 (citing *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1381 (Fed. Cir. 2003) (“An anticipatory reference need only enable subject matter that falls within the scope of the claims at issue, nothing more.”); *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001) (“When a claim covers several structures of compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” (citations omitted))).

³⁴ D.I. 805 at 21.

³⁵ *Celeritas Techs., Ltd., v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998).

[5] at least one means for polarizing said incident light located on said one side exposed to said incident light; and

[6] at least one layer of medium for compensating the birefringence of said nematic liquid crystal layer in its homeotropic structure for improving oblique observation of said cell, said medium having three principal optical indices each corresponding to an axis, one of said indices being weaker than the other two indices, and that axis which corresponds to said weak index being parallel to said homeotropic direction.

The preamble of claim 1 (the first element for purposes of this opinion) recites: “A liquid crystal cell assembly using the electrically controlled birefringence effect and having spaced apart sides, one of which is exposed to an incident light.”

Samsung argues that EP ‘775 discloses the assembly recited in the preamble of claim 1. EP ‘775 states: “Figures 2A and 2B schematically *show an ‘electrically controlled birefringent’ liquid crystal cell . . .*”³⁶ Figure 4 of EP ‘775 illustrates a liquid crystal cell with spaced apart sides, the bottom of which is exposed to incident light.³⁷

CEA does not argue that the assembly recited in the preamble of claim 1 is not disclosed in EP ‘775. The court finds there is no question of fact that EP ‘775 includes that disclosure.

The second element of claim 1 requires “a nematic liquid crystal molecular layer of positive optical anisotropy.”

Samsung argues that EP ‘775 discloses this element. EP ‘775 recites: “Figures

³⁶ D.I. 677, Ex. 5 at AUO026271, p. 2, ll. 5-6 (emphasis added).

³⁷ *Id.*, Ex. 5 at AUO026291, Fig. 4; *id.*, Ex. 5 at AUO026278-79, p. 9, ln.13 to p. 10, ln. 1 (describing figure 4); ‘412 patent, 1:17-19 (“Liquid crystal cells using the electrically controlled birefringence effect are already known.”).

2A and 2B schematically show an 'electrically controlled birefringent' liquid crystal cell comprising a layer of nematic liquid crystal 9"³⁸ EP '775 also discloses liquid crystal materials with positive optical anisotropy.³⁹

CEA does not argue that this limitation is not disclosed in EP '775. The court finds there is no question of fact that EP '775 includes that disclosure.

The third element of claim 1 requires "at least two electrodes, one on either side of said liquid crystal layer, with the electrode located on said one side exposed to incident light being transparent."

Samsung argues that EP '775 discloses this element. Figure 4 illustrates two electrodes (designated 19a and 20a) on either side of a liquid crystal layer (designated 18).⁴⁰ The related description of figure for in EP '775 recites:

Figure 4 schematically shows, in exploded view, the cell according to the invention to which reference is made in the description of Figure 3. *This cell comprises a layer of nematic liquid crystal 18 which extends between two glass plates 19 and 20 and of which the optical index is on the order of 1.5. On their faces that are directly across from the layer of liquid crystal, these glass plates 19, 20 comprise, as known, transparent electrodes 19a, 20a which makes the symbols appear (numbers, letters, dots, etc.) on the screen of the cell when an appropriate electrical voltage is applied between them.*⁴¹

This description makes clear that both of the electrodes of figure 4, 19a and 20a,

³⁸ *Id.*, Ex. 5 at AUO026271, p. 2, ll. 5-6 (emphasis added).

³⁹ *Id.*, Ex. 5 at AUO026282, p. 13, ll. 8-12 ("It is possible to choose the liquid crystal in the family of SCHIFF bases and to produce a liquid crystal layer of which the thickness is on the order of 5 μm and of which *the anisotropy is equal to 0.2*. It is also possible to choose the liquid crystal in the family of phenyl-cyclo-hexanes and produce a liquid crystal layer of which the thickness is on the order of 10 μm and of which *the optical anisotropy is equal to 0.1*.").

⁴⁰ *Id.*, Ex. 5 at AUO026291, Fig. 4.

⁴¹ *Id.*, Ex. 5 at AUO026277-78, p. 8, ln. 18 to p. 9, ln. 3 (emphasis added); *id.*, Ex. 5 at AUO026272, p. 3, ll. 2-4. ("Its object is a liquid crystal cell comprising an assembly comprising a liquid crystal layer that is able to present a homeotropic structure and *electrodes that are located on each side of the layer and of which at least one is transparent*") (emphasis added).

are transparent and figure 4 illustrates that transparent electrode 19a is exposed to incident light.⁴²

CEA does not argue that this limitation is not disclosed in EP '775. The court finds there is no question of fact that EP '775 includes that disclosure.

The fourth element of claim 1 requires "the molecules of said liquid crystal layer being substantially oriented in a homeotropic direction in the absence of a voltage between said electrodes."

Samsung argues that EP '775 discloses this element. EP '775 specifies this homeotropic molecular orientation when no voltage is applied to the liquid crystal layer: "[t]he two plates are also parallel to each other and *the layer of liquid crystal is arranged between these plates in such a way as to present a homeotropic structure when no voltage is applied between the electrodes*"⁴³

CEA does not argue that this limitation is not disclosed in EP '775. The court finds there is no question of fact that EP '775 includes that disclosure.

The fifth element of claim 1 requires "at least one means for polarizing said incident light located on said one side exposed to said incident light." The sixth element of claim 1 requires "at least one layer of medium for compensating the birefringence of said nematic liquid crystal layer in its homeotropic structure for improving oblique observation of said cell, said medium having three principal optical indices each

⁴² The description of EP '775 also confirms that one side of the cell is exposed to the incident light. *Id.*, Ex. 5 at AUO026278, p. 9, ll. 15-16 ("[T]he first polarizer 21 being located on the side of the glass plate 19 *intended to receive the incident light.*") (emphasis added).

⁴³ *Id.*, Ex. 5 at AUO026278, p. 9, ll. 3-6 (emphasis added); *id.*, Ex. 5 at AUO026271, p. 2, ll. 12-14 ("When the cell is at rest, *the liquid crystal presents a homeotropic structure*; all the molecules 14 that make it up are then parallel to a same direction 15 perpendicular to the two plates 11 and 12 and again called 'direction of homeotropy.')" (emphasis added).

corresponding to an axis, one of said indices being weaker than the other two indices, and that axis which corresponds to said weak index being parallel to said homeotropic direction.” Therefore, claim 1 of the ‘412 patent requires a “means for polarizing the incident light,” as well as, a “medium for compensating.”

Samsung argues that EP ‘775 discloses these two elements. CEA argues that these elements are not disclosed, based on its contention that EP ‘775 fails to teach a compensation layer separate from the polarizing means. CEA argues that EP ‘775 discloses a rectilinear polarizer and a delay plate (compensation layer) which *together* form the means for polarizing the incident light and does not also disclose a *separate* compensation layer.

In its claim construction order, the court adopted CEA’s proposed definition of “means for polarizing said incident light” in the ‘412 patent and construed that phrase as a means-plus-function term pursuant to 35 U.S.C. § 112, ¶ 6 to mean “the structure disclosed in the specification that comprises a linear polarizer (i.e., rectilinear polarizer), an elliptical polarizer, or a circular polarizer, and equivalent structures to accomplish the function of polarizing the incident light.”⁴⁴

In support of its argument that the means for polarization disclosed in EP ‘775 CEA includes both a linear polarizer and an associated delay plate, it cites the following from the written description of EP ‘775: “the delay plates 23 and 24 are chosen in such a way that the pairs make up a *first rectilinear polarizer-first delay plate* and *second*

⁴⁴ D.I. 1076 at 12-14.

rectilinear polarizer-second delay plate are semi-circular polarizers . . .”⁴⁵ The court agrees with Samsung’s response that whether “linear polarizers 21 and 22, when properly oriented with quarter wave delay plates 23 and 24, create a circular polarizer does not affect the disclosure [in EP ‘775] of linear polarizers.”⁴⁶ As noted above, during claim construction of the ‘412 patent, CEA argued for—and the court agreed—that the “means for polarization” of the ‘412 patent is *not* limited to circular polarizers (as Samsung proposed) but includes linear polarizers. It is undisputed that such polarizers are disclosed in EP ‘775.

Figure 4, and the associated written description of EP ‘775, disclose linear polarizers on each side of the liquid crystal layer: “[t]he cell in Figure 4 also comprises, on each side and close to the assembly made up by the layer of liquid crystal and the glass plates, a *first rectilinear polarizer 21 and second rectilinear polarizer 22.*”⁴⁷ One of the linear polarizers, 21, is illustrated and described as being on the side exposed to the incident light:

According to the invention, the cell is of the electrically controlled birefringent type, one of the sides of the said assembly is intended to be exposed to the incident light; the cell comprises, at least on this side, a means for polarizing the incident light and the thickness of the layer and

⁴⁵ D.I. 677, Ex. 5 at AUO026279, p. 10, ll. 15-16 (emphasis added). This is the same argument CEA made to the PTO which rejected certain claims of the ‘412 patent application as anticipated by figure 4 of the ‘028 patent: “Plates 23 and 24 of Clerc et al are delay plates which are part of the polarization means. Plate 23 plus linear polarizer 21 form a first polarization means and plate 24 plus linear polarizer 22 form a second polarization means. The plate and linear polarizers 23, 21 and 22, 24 of Clerc et al are the functional equivalents of circular polarizers 24, 26 of Figure 3 of the present application, both comprising a linear polarizer 28 and a quarter-wave plate 30. The cell of the present invention, at least on the side exposed to an incident light, a means for polarizing the incident light and, in addition, at least one layer of a medium for compensating the birefringence of the liquid crystal layer of the cell.” *Id.*, Ex. 2 at AUO000197, p. 6 (citation omitted).

⁴⁶ D.I. 849 at 13.

⁴⁷ D.I. 677, Ex. 5 at AUO026278, p. 9, ll. 13-15 (emphasis added); *id.*, Ex. 5 at AUO026291, Fig. 4.

each polarization means are provided to implement all of the said compensation.⁴⁸

The court finds that there is no question of fact that the fifth element of claim 1 is disclosed in EP '775.

EP '775 also discloses the sixth element of claim 1. Figure 4, and the associated description, disclose delay plates 23 and 24 separate from linear polarizers 21 and 22.⁴⁹ There is no dispute that a delay plate is a compensating medium.⁵⁰ The sixth element requires the compensation medium to have "three principal optical indices each corresponding to an axis, one of said indices being weaker than the other two indices, and that axis which corresponds to said weak index being parallel to said homeotropic direction." EP '775 discloses delay plates having the required optical characteristics.

An optical index of refraction is a measurement of the speed at which light travels through material. The greater the index of refraction, the slower light travels and vice versa. With multiple indices, light travels "fastest" through the "weakest" index. The delay plates 23 and 24 illustrated in figure 4 are shown to have three principal optical indices represented by the directional axes R_1 , L_1 , and R'_1 and R_2 , L_2 , and R'_2 , respectively.⁵¹ The description of EP '775 discloses that axes R'_1 and R'_2 are the

⁴⁸ *Id.*, Ex. 5 at AUO026272-73, p. 3, ln. 20 to p.4, ln. 3.; *id.*, Ex. 5 at AUO026291, Fig. 4.

⁴⁹ *Id.*, Ex. 5 at AUO026278, p. 9, ll. 16-19 ("The cell also comprises a *first delay plate 23* arranged between the plate 19 and the first polarizer 21 as well as a *second delay plate 24* arranged between the glass plate 20 and the second polarizer 22.") (emphasis added); *id.*, Ex. 5 at AUO026291, Fig. 4.

⁵⁰ CEA made this point during oral argument stating: "[a] compensation layer. That is really a key to a lot of issues in this dispute The compensation layer basically has several different types that are currently in use. A point of clarification on the terminology. All the '028 patents and the '412 patent call it a delay plate. That's 1980s terminology. Today, everybody calls it a compensation layer." D.I.1053 at 11.

⁵¹ D.I. 677, Ex. 5 at AUO026291, Fig. 4.

weakest (fastest) axes in delay plates 23 and 24:

The delay plate 23 (respectively 24) is arranged in such a way that two of its neutral lines, corresponding respectively to its *slow axis* L_1 (respectively L_2) and to *one of its fast axes* R_1 (respectively R_2) will be perpendicular to the right Δ and that one of the bisectors formed by these neutral lines projects parallel to the right Δ essentially on the maximum absorption axis P_1 (respectively P_2) of the corresponding rectilinear polarizer 21 (respectively 22). *The other fast axis* R'_1 (respectively R'_2) is then parallel to the right Δ . The delay plates are also arranged in such a way that their respective slow axes L_1 and L_2 will be located on each side of plane M.⁵²

"The rapid axes R'_1 and R'_2 are then chosen so that they are *more rapid than the axes* R_1 and R_2 ."⁵³ Finally, R'_1 and R'_2 are illustrated in figure 4 as being parallel to the homeotropic direct in figure 4.⁵⁴ This orientation is also confirmed in the description of figure 3 of EP '775:

In Figure 3 . . . [t]he direction of homeotropy H of the cell is perpendicular to the plane of the screen. The plane of observation P corresponds to the most probable location of the reader of the screen, this reader observing the screen at a variable incidence. This plane P is perpendicular to the screen and thus parallel to the direction of homeotropy H.⁵⁵

The court finds that there is no question of fact that the sixth element of claim 1 is disclosed in EP '775.

Because Samsung has presented clear and convincing evidence that each of the elements of claim 1 of the '412 patent are disclosed in EP '775, the court finds that claim 1 invalid as anticipated under 35 U.S.C. § 102(b).

⁵² *Id.*, Ex. 5 at AUO026279, p. 10, ll. 16-19 (emphasis added).

⁵³ *Id.*, Ex. 5 at AUO026282, p. 13, ll. 3-4 (emphasis added).

⁵⁴ *Id.*, Ex. 5 at AUO026291, Fig. 4.

⁵⁵ *Id.*, Ex. 5 at AUO026277, p. 8, ll. 3-9. Figure 4 is merely an exploded view of the cell illustrated in figure 3. *Id.*, Ex. 5 at AUO026277, p. 8, ll. 18-19 ("Figure 4 schematically shows, in exploded view, the cell according to the invention to which reference is made in the description of Figure 3.").

'412 Patent, Claim 2

Claim 2 of the '412 patent recites (with each element numbered in brackets):

A cell according to claim 1, [1] wherein the said electrodes are transparent, [2] wherein the cell comprises two complementary polarizing means located on either side of said electrodes and [3] wherein said compensating medium layer is located between at least one of said polarizing means and said electrode adjacent thereto.

Claim 2 depends from claim 1 and, therefore, includes each of the limitations of claim 1 previously determined to be anticipated and requires three additional elements. CEA does not present specific arguments concerning Samsung's position regarding the disclosure in EP '775 of the elements required by claim 2.⁵⁶

The first limitation requires that "the said electrodes are transparent." Claim 1 requires that the electrode on the side of the liquid crystal layer exposed to incident light be transparent, while claim 2 requires that the electrodes on each side of the liquid crystal layer are transparent. The same disclosure of EP '775 disclosing the transparent electrode element of claim 1, also discloses transparent electrodes on each side of the liquid crystal layer: "[t]his cell comprises a layer of nematic liquid crystal 18 which extends between two glass plates 19 and 20 On their faces that are directly across from the layer of liquid crystal, these glass plates 19, 20 comprise, as known, *transparent electrodes 19a, 20a*"⁵⁷

The second limitation of claim 2 requires that "the cell comprises two complementary polarizing means located on either side of said electrodes." Claim 1

⁵⁶ The entirety of Scheffer's Rebuttal Report regarding claim 2 of the '412 patent is: "[i]t is my opinion that Claim 2 of the '412 patent is not anticipated by the '775 patent at least because Claim 1, from which it depends, is also not anticipated." D.I. 806, Ex. 1 at 23.

⁵⁷ D.I. 677, Ex. 5 at AUO026277-78, p. 8, ln. 19 to p. 9, ln. 2 (emphasis added).

requires “at least one means for polarizing” which is located on the side exposed to incident light while claim 2 requires two complementary polarizing means. Figure 4 illustrates two complimentary linear polarizers 21 and 22 on either side of electrodes 19a and 20a.⁵⁸ Likewise, figure 4 discloses compensating media 23 and 24 located between polarizing means 21 and 22 and electrodes 19a and 20a adjacent thereto.⁵⁹

Because Samsung has presented clear and convincing evidence that each of the elements of claim 2 of the ‘412 patent are disclosed in EP ‘775, the court finds that claim 2 invalid as anticipated under 35 U.S.C. § 102(b).

‘412 Patent, Claim 12

Claim 12 of the ‘412 patent recites (with each element numbered in brackets):
“A cell according to claim 2, [1] wherein the two polarizing means are crossed rectilinear polarizers, [2] wherein the compensating medium layer is a biaxial medium, and [3] wherein said weak index is parallel to the homeotropic direction.”

Here, the court finds that Samsung has failed to show by clear and convincing evidence that EP ‘775 discloses the element requiring “the two polarizing means are crossed rectilinear polarizers.” Samsung cites a section EP ‘775 which discusses figures 1A and 1B. Figures 1A and 1B illustrate “a liquid crystal cell of the ‘helix nematic’ type”⁶⁰ The specific lines cited by Samsung are an incomplete sentence referring to the helix nematic cell that recites “the axes of maximum absorption of the polarizers also being either perpendicular (to obtain a positive contrast, ‘black on white’)

⁵⁸ *Id.*, Ex. 5 at AUO026291, Fig. 4.

⁵⁹ *Id.*

⁶⁰ *Id.*, Ex. 5 at AUO026270, p. 1, ll. 10-11.

or parallel”⁶¹ Samsung also cites EP ‘775’s recitation that “[t]hus, a total extinction of the wave at the output of the second rectilinear polarizer 22 is observed and the angle of incidence i will be null or not null. The contrast is thus maintained for oblique observations.”⁶² The court determines that these two citations do not meet Samsung’s burden of presenting *prima facie* evidence that EP ‘775 discloses the requirement that “the two polarizing means are crossed rectilinear polarizers.” Having failed to meet that burden, CEA is not required to present any evidence to counter Samsung’s argument on this claim element. Because Samsung has failed to establish that each element of claim 12 of the ‘412 patent is disclosed in EP ‘775, the court need not examine the parties’ arguments with regard to the other two elements of that claim. Consequently, Samsung’s motion for summary judgment of anticipation of claim 12 of the ‘412 patent by EP ‘775 is denied.

CONCLUSION

At Wilmington, this 31st day of October, 2007:

For the reasons stated above:

IT IS ORDERED and ADJUDGED that Samsung’s motion for summary judgment of invalidity of claims 1, 2, and 12 of U.S. Patent No. 4,889,412 as anticipated under 35 U.S.C. § 102(b) by EP ‘775 (D.I. 675) is **GRANTED in part and DENIED in part**.

1. Samsung’s motion for summary judgment that claim 1 of the ‘412 patent is invalid as anticipated by EP ‘775 under 35 U.S.C. § 102(b) is

GRANTED.

⁶¹ D.I. 849 at 17 (citing D.I. 677, Ex. 5 at AUO026270, p.1, ll. 20-21).

⁶² *Id.* (citing D.I. 677, Ex. 5 at AUO026281, p.12, ll. 18-21).

2. Samsung's motion for summary judgment that claim 2 of the '412 patent is invalid as anticipated by EP '775 under 35 U.S.C. § 102(b) is **GRANTED**.
3. Samsung's motion for summary judgment that claim 12 of the '412 patent is invalid as anticipated by EP '775 under 35 U.S.C. § 102(b) is **DENIED**.


UNITED STATES MAGISTRATE JUDGE