

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

APELDYN CORPORATION, )  
)  
Plaintiff, )  
)  
v. )  
)  
SONY CORPORATION, SONY )  
ELECTRONICS, INC., SAMSUNG )  
ELECTRONICS CO. LTD., and )  
SAMSUNG ELECTRONICS AMERICA )  
)  
Defendants. )

Civ. No. 11-440-SLR

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David S. Eagle, Esquire and Sean M. Brennecke, Esquire of Klehr Harrison Harvey Branzburg LLP, Wilmington, Delaware. Counsel for Plaintiff. Of Counsel: Jon P. Stride, Esquire and Scott G. Seidman, Esquire of Tonkon Torp, LLP.

John W. Shaw, Esquire and Jeffrey T. Castellano, Esquire of Shaw Keller LLP. Counsel for Defendants Sony Corporation and Sony Electronics, Inc. Of Counsel: Michael J. Barta, Esquire, Neil. S. Sirota, Esquire, Eliot D. Williams, Esquire, Christopher R. Patrick, Esquire and Jeremy P. Merling, Esquire of Baker Botts LLP.

Richard L. Horwitz, Esquire, David E. Moore, Esquire, and Bundu A. Palapura, Esquire of Potter Anderson & Corroon LLP. Counsel for Defendants Samsung Electronics Co., Ltd., and Samsung Electronics America. Of Counsel: Michael J. Barta, Esquire, Neil. S. Sirota, Esquire, Eliot D. Williams, Esquire, Christopher R. Patrick, Esquire and Jeremy P. Merling, Esquire of Baker Botts LLP.

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**MEMORANDUM OPINION**

Dated: April 2, 2015  
Wilmington, Delaware

  
ROBINSON, District Judge

## I. INTRODUCTION

### A. The Parties

Plaintiff Apeldyn Corporation (“Apeldyn” or “plaintiff”) is an Oregon corporation with its principal place of business in Tigard, Oregon. Apeldyn is the owner of the sole patent at issue, United States Patent No. 5,347,382 (“the ‘382 patent”).

Defendant Sony Corporation is a Japanese corporation with its principal place of business in Tokyo, Japan. Defendant Sony Electronics, Inc. (collectively with Sony Corporation, “Sony”) is a Delaware corporation with its principal place of business in San Diego, California. Sony Corporation is a manufacturer of liquid crystal display (“LCD”) products, and Sony Electronics, Inc. is a domestic subsidiary and imports LCD’s for sale in the United States.

Defendant Samsung Electronics Co., Ltd. is a Korean corporation with its principal place of business in Seoul, South Korea. Samsung Electronics Co. Ltd. manufactures LCD products. Defendant Samsung Electronics America Inc. (collectively with Samsung Electronics Co., Ltd., “Samsung”) is a New York corporation with its principal place of business in Ridgefield Park, New Jersey. Samsung Electronics America, Inc. is a domestic subsidiary of Samsung Electronics Co., Ltd., and it markets and manufactures Samsung’s products throughout the United States.

### B. Procedural Background

This is not the first lawsuit in this court regarding infringement of Apeldyn’s ‘382 patent. On September 8, 2008, Apeldyn filed a complaint against AU Optronics Corporation and AU Optronics Corporation America (collectively “AUO”), Chi Mei

Optoelectronics Corporation and Chi Mei Optoelectronics USA Inc. (collectively, "CMO") (together with AUO, "the 08-568 defendants"), Sony, Samsung Electronics Co., Ltd., and Samsung Electronics America Inc. (hereinafter, the "08-568 case"). (Civ. No. 08-568, D.I. 1) On September 30, 2009, the court conditionally granted Samsung's motion for disqualification. (*Id.*, D.I. 155, 156) Samsung was subsequently dismissed from the case. (*Id.*, D.I. 255) On April 13, 2010, the court received a stipulation of dismissal with respect to Sony. (*Id.*, D.I. 294) After an extensive claim construction and summary judgment practice (*Id.*, D.I. 627), and the subsequent denial of the parties' motions for reargument (*Id.*, D.I. 653), the parties stipulated to a form of judgment (*Id.*, D.I. 665) and Apeldyn appealed the court's decisions to the Federal Circuit (*Id.*, D.I. 663). On July 17, 2013, the Federal Circuit affirmed this court's summary judgment ruling of non-infringement.

In the present case, Apeldyn filed a complaint alleging infringement of the '382 patent by Sony on May 19, 2011. (D.I. 1) Therein, Apeldyn alleged that Sony infringes the '382 patent and induces infringement of the '382 patent by virtue of its making, selling, and importing "products that are made by a method that infringes one or more claims of the '382 patent," and that Sony's "infringement has been and continues to be willful and deliberate, and will continue unless enjoined by this court," which also renders this case exceptional. (*Id.* at ¶¶ 26, 29) Sony moved to dismiss Apeldyn's claims of inducement of infringement and willful infringement. (D.I. 5) Apeldyn filed a first amended complaint on July 12, 2011, mooting that motion. (D.I. 11) Thereafter, on July 28, 2011, Sony filed a renewed motion to dismiss plaintiff's inducement and willful infringement claims (D.I. 13) and a motion to stay the proceedings (D.I. 16). On April 4,

2012, the court issued an order denying the motion to dismiss and the motion to stay. On June 14, 2012, the parties stipulated to the consolidation of the present action with Civ. No. 11-581, in which Apeldyn filed a complaint against Samsung (collectively with Sony, “defendants”) for infringement of the ‘382 patent.

Presently before the court are: (1) defendants’ motion for summary judgment of invalidity (D.I. 150); (2) defendants’ motion for summary judgment of non-infringement due to collateral estoppel (D.I. 167); (3) defendants’ motion to exclude the infringement testimony of plaintiff’s technical expert (D.I. 150); and (4) plaintiff’s motion to exclude certain testimony from defendants’ expert (D.I. 146). The court has jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

## **II. STANDARDS OF REVIEW**

### **A. Summary Judgment**

“The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). The moving party bears the burden of demonstrating the absence of a genuine issue of material fact. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 415 U.S. 475, 586 n.10 (1986). A party asserting that a fact cannot be – or, alternatively, is – genuinely disputed must support the assertion either by citing to “particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for the purposes of the motions only), admissions, interrogatory answers, or other materials,” or by “showing that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible

evidence to support the fact.” Fed. R. Civ. P. 56(c)(1)(A) & (B). If the moving party has carried its burden, the nonmovant must then “come forward with specific facts showing that there is a genuine issue for trial.” *Matsushita*, 415 U.S. at 587 (internal quotation marks omitted). The court will “draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence.” *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000).

To defeat a motion for summary judgment, the non-moving party must “do more than simply show that there is some metaphysical doubt as to the material facts.” *Matsushita*, 475 U.S. at 586-87; *see also Podohnik v. U.S. Postal Service*, 409 F.3d 584, 594 (3d Cir. 2005) (stating party opposing summary judgment “must present more than just bare assertions, conclusory allegations or suspicions to show the existence of a genuine issue”) (internal quotation marks omitted). Although the “mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment,” a factual dispute is genuine where “the evidence is such that a reasonable jury could return a verdict for the nonmoving party.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-48 (1986). “If the evidence is merely colorable, or is not significantly probative, summary judgment may be granted.” *Id.* at 249-50 (internal citations omitted); *see also Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986) (stating entry of summary judgment is mandated “against a party who fails to make a showing sufficient to establish the existence of an element essential to that party’s case, and on which that party will bear the burden of proof at trial”).

## **B. Infringement**

A patent is infringed when a person “without authority makes, uses or sells any patented invention, within the United States . . . during the term of the patent.” 35 U.S.C. § 271(a). A two-step analysis is employed in making an infringement determination. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995). First, the court must construe the asserted claims to ascertain their meaning and scope. See *id.* Construction of the claims is a question of law subject to de novo review. See *Cybor Corp. v. FAS Techs.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998). The trier of fact must then compare the properly construed claims with the accused infringing product. See *Markman*, 52 F.3d at 976. This second step is a question of fact. See *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998).

“Direct infringement requires a party to perform each and every step or element of a claimed method or product.” *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378 (Fed. Cir. 2007), overruled on other grounds by 692 F.3d 1301 (Fed. Cir. 2012). “If any claim limitation is absent from the accused device, there is no literal infringement as a matter of law.” *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). If an accused product does not infringe an independent claim, it also does not infringe any claim depending thereon. See *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989). However, “[o]ne may infringe an independent claim and not infringe a claim dependent on that claim.” *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1359 (Fed. Cir. 2007) (quoting *Wahpeton Canvas*, 870 F.2d at 1552) (internal quotations omitted). A product that does not literally infringe a patent claim may still infringe under the doctrine of equivalents if the differences between an individual limitation of the claimed invention and an element of

the accused product are insubstantial. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 24 (1997). The patent owner has the burden of proving infringement and must meet its burden by a preponderance of the evidence. See *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988) (citations omitted).

When an accused infringer moves for summary judgment of non-infringement, such relief may be granted only if one or more limitations of the claim in question does not read on an element of the accused product, either literally or under the doctrine of equivalents. See *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1376 (Fed. Cir. 2005); see also *TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1369 (Fed. Cir. 2002) (“Summary judgment of noninfringement is ... appropriate where the patent owner's proof is deficient in meeting an essential part of the legal standard for infringement, because such failure will render all other facts immaterial.”). Thus, summary judgment of non-infringement can only be granted if, after viewing the facts in the light most favorable to the non-movant, there is no genuine issue as to whether the accused product is covered by the claims (as construed by the court). See *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1304 (Fed. Cir. 1999).

“[A] method claim is not directly infringed by the sale of an apparatus even though it is capable of performing only the patented method. The sale of the apparatus is not a sale of the method. A method claim is directly infringed only by one practicing the patented method.” *Joy Technologies, Inc. v. Flakt, Inc.*, 6 F.3d 770, 775 (Fed. Cir. 1993). Therefore, “an accused infringer must perform all the steps of the claimed method, either personally or through another acting under his direction or control.”

*Akamai Technologies, Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301, 1307 (Fed. Cir. 2012).

With respect to apparatus claims, “to infringe a claim that recites capability and not actual operation, an accused device ‘need only be capable of operating in the described mode.’” *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1204 (Fed. Cir. 2010) (citing *Intel Corp. v. U.S. Int’l Trade Comm’n*, 946 F.2d 821, 832 (Fed. Cir. 1991)). However, if an apparatus claim requires “software [to] be configured in a particular way to infringe,” infringement does not occur merely because the apparatus could be used in an infringing fashion. *Finjan*, 626 F.3d at 1204-05.

### **C. Anticipation**

Under 35 U.S.C. § 102(b), “[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.” The Federal Circuit has stated that “[t]here must be no difference between the claimed invention and the referenced disclosure, as viewed by a person of ordinary skill in the field of the invention.” *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). In determining whether a patented invention is explicitly anticipated, the claims are read in the context of the patent specification in which they arise and in which the invention is described. *Glaverbel Societe Anonyme v. Northlake Mktg. & Supply, Inc.*, 45 F.3d 1550, 1554 (Fed. Cir. 1995). The prosecution history and the prior art may be consulted if needed to impart clarity or to avoid ambiguity in ascertaining whether the invention is novel or was previously known in the art. *Id.* The prior art need not be ipsissimis verbis (i.e., use identical words as those



recited in the claims) to be anticipating. *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716 (Fed. Cir. 1984).

A prior art reference may anticipate without explicitly disclosing a feature of the claimed invention if that missing characteristic is inherently present in the single anticipating reference. *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991). The Federal Circuit has explained that an inherent limitation is one that is necessarily present and not one that may be established by probabilities or possibilities. *Id.* That is, “[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Id.* The Federal Circuit also has observed that “[i]nherency operates to anticipate entire inventions as well as single limitations within an invention.” *Schering Corp. v. Geneva Pharms. Inc.*, 339 F.3d 1373, 1380 (Fed. Cir. 2003). Moreover, recognition of an inherent limitation by a person of ordinary skill in the art before the critical date is not required to establish inherent anticipation. *Id.* at 1377.

An anticipation inquiry involves two steps. First, the court must construe the claims of the patent in suit as a matter of law. *Key Pharms. v. Hercon Labs Corp.*, 161 F.3d 709, 714 (Fed. Cir. 1998). Second, the finder of fact must compare the construed claims against the prior art. *Id.* A finding of anticipation will invalidate the patent. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 147 F.3d 1374, 1378 (Fed. Cir. 1998).

### **III. DISCUSSION**

The only patent subject to review in this summary judgment practice is the ‘382 patent. The ‘382 patent, entitled “Liquid Crystal Cell Retarder With Driving Beyond Retardance Value and Two Cells for High Speeds,” issued September 13, 1994 and claims priority to an April 23, 1992 filing date. The specification provides that liquid

crystal cell retarder systems known at the time of filing and “used to vary polarization by switching between intermediate values over a range of retardances” suffered from “two significant drawbacks.” (‘382 patent, col. 1:45-48)

First, a change in retardance in one direction must be effectuated by the application of an increased ac voltage, but the response speed of the retarder in that direction is limited by the responsiveness of the liquid crystal cell material. Second, a change in retardance in the other direction must be effectuated by reducing the applied voltage and allowing the liquid crystal material to relax back to a new retardance; that is, it cannot be driven by the application of a voltage. These two drawbacks greatly limit the response speed of a liquid crystal cell retarder and, therefore, the applications to which the retarder may be put. In particular, the slow response time of known liquid crystal cell retarder systems limits the speed with which they can switch between intermediate values, and corresponding polarization states, over a wide range of retardances.

(*Id.* at col. 1:49-65) The disclosed invention purports to solve these needs with “impulse switching,” or “the application of a voltage in excess of the voltage corresponding to the target retardance,” and through the use of stacked, “opposing” retarders. (*Id.* at col. 2:6-10, 2:24-27)

Increasing the applied voltage was discovered to increase the rate at which a liquid crystal cell retarder switches from one resistance to another resistance under the influence of an electric field. (*Id.* at col. 2:10-15) The invention employs this relationship to decrease switching time by: (1) initially applying a switching voltage higher than the voltage corresponding to the target retardance, causing the liquid crystal cell to move toward the target retardance rapidly; (2) before or substantially at the time when the target retardance has been reached, switching the applied voltage to the voltage corresponding to the target retardance; and (3) maintaining that voltage

(corresponding to the target retardance) until a new retardance is desired. (*Id.* at col. 2:14-23)

To decrease the switching time in the other direction, the invention discloses using two “opposed” liquid crystal cells – or two cells each having a fast axis, the fast axes disposed at  $\pi/2$  radians to one another. (*Id.* at col. 2:28-36)

The total retardance of both cells will therefore be the difference between the retardances produced by the two cells. Consequently, the retardance can be switched positively in one direction by application of a higher voltage to one cell and positively in the other direction by application of a higher voltage to the other cell. Impulse switching is applied to both cells to obtain the maximum switching speed in both directions.

(*Id.* at col. 2:36-43) The invention takes advantage of the linear manner in which the retardance relaxes and provides for the reducing of the voltage on both cells simultaneously between switching events to zero (or some other acceptable bias voltage), thereby allowing the cells to drift back to retardances corresponding to a lower voltage simultaneously, while the total retardance does not vary. (*Id.* at col. 2:44-57) The specification further provides that additional pairs of opposed retarders may be added to the stack to further decrease the delay time between retardance switching. (*Id.* at cols. 2:58-3:12)

Plaintiff alleges that defendants infringe claim 20, reproduced below:

20. A method for controlling an optical retarder for controlling the retardance of light passing therethrough along a first eigen-axis thereof relative to a second eigen-axis thereof in response to the application of signal thereto, said method comprising:

(a) supplying a signal to said retarder to control its retardance;

(b) changing said retardance from a first retardance to a second retardance by causing said signal to change, in a direction to move toward said second retardance, from a first amplitude which is required for said first retardance to a second amplitude, beyond a third which is required for said second retardance, for a period of time; and

(c) thereafter causing said signal to change to said third amplitude required for said second retardance.

(*Id.* at claim 20)

#### **A. Defendants' Motion of Non-Infringement**

Defendants move for summary judgment of non-infringement of claim 20 of the '382 patent on the basis of collateral estoppel. In *Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation*, 402 U.S. 313 (1971), the Supreme Court held that, in the patent context, defensive collateral estoppel may be used if the accused infringer shows: "(1) that a patent was found invalid in a prior case that had proceeded through final judgment and in which all procedural opportunities were available to the patentee; (2) that the issues litigated were identical; and (3) that the party against whom estoppel is applied had a full and fair opportunity to litigate." *Abbott Labs. v. Andrx Pharma., Inc.*, 473 F.3d 1196, 1203 (Fed. Cir. 2007). Regional Circuit law controls the determination of whether prior findings invoke collateral estoppel pursuant to these guidelines. *Id.* at 1202–03.

In this regard, the Third Circuit has held that collateral estoppel applies when "(1) the identical issue was previously adjudicated; (2) the issue was actually litigated; (3) the previous determination was necessary to the decision; and (4) the party being precluded from relitigating the issue was fully represented in the prior action." *Jean Alexander Cosmetics, Inc. v. L'Oreal USA, Inc.*, 458 F.3d 244, 249 (3d Cir. 2006)

(citations omitted). The Third Circuit has also considered whether the party being precluded had “a full and fair opportunity to litigate the issue in question in the prior litigation” and, in addition, whether the issue was determined by final judgment. *Id.* (citations omitted). In determining “whether a patentee has had a full and fair chance to litigate the validity of his patent,” the court should consider “whether without fault of his own the patentee was deprived of crucial evidence or witnesses in the first litigation.” *Blonder-Tongue*, 402 U.S. at 333.

The parties do not dispute that the same patent, the same claim, and the same accused products<sup>1</sup> are at issue in the present case as were at issue in the 08-568 case. Rather, the parties dispute whether: (1) the issue was actually litigated; and (2) plaintiff was “deprived of crucial evidence” in the 08-568 case and, therefore, did not have a full and fair chance to litigate the issue in question.

### **1. Actually Litigated**

Plaintiff admits that it asserted both independent claims 1 and 20 in the 08-568 case. (D.I. 190 at 19) Nonetheless, plaintiff argues that the court’s reasoning on summary judgment only applied to claim 1 because: (1) claim 20 does not require that the “first signal” must come from the “first drive means;” and (2) claim 20 is a method claim while claim 1 is a “means plus function” claim. Given the difference in claim type, plaintiff alleges that the court erred in failing to construe claim 20 or separately compare the accused devices to the limitations of claim 20.

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<sup>1</sup> In response to defendants’ requests for admission, plaintiff stated “there are no differences between the products at issue in the [08-568] case and the Accused Products in this case that are material to Claim 20.” (D.I. 169, ex. 6 at 10)

In the 08-568 case, both plaintiff and the 08-568 defendants referenced claim 20 alongside claim 1 in their summary judgment briefing, with the 08-568 defendants explaining that “[c]laim 20 is exemplary” (Civ. No. 08-568, D.I. 509 at 6) and plaintiff referencing both claims in response to defendants’ motion (Civ. No. 08-568, D.I. 530 at 10; see *also* D.I. 556 at 3). In its memorandum opinion, the court recognized that claim 1 is “exemplary” of claims 1, 20, and 22-29. (Civ. No. 08-568, D.I. 627 at 8)

Additionally, the court stated:

The asserted independent claims of the ‘382 patent require that the three amplitudes . . . are achieved ‘by causing the [first] signal to change.’ During the claim construction exercise, neither [plaintiff] nor [the 08-568 defendants] advocated construction of ‘changing’ or ‘to change’ outside of their ordinary meaning. (D.I. 487 at 5 (claim 1); *id.* at 9 (**claim 20**).

(*Id.* at 17 n.9) (emphasis added) From this statement, it is evident that the court’s analysis regarding the drive signal pertained to both claim 1 and claim 20. If plaintiff wanted to advance alternative infringement theories based on linguistic differences in claim 1 or claim 20, or based on perceived differences in the origin of the “first signal,” it had ample opportunity to do so in the 08-568 case. Moreover, on appeal to the Federal Circuit, plaintiff raised precisely this issue, arguing that “the district court erred in failing to make an independent claim 20 infringement analysis.” (*Id.* at 41) The Federal Circuit affirmed this court’s decision without opinion pursuant to Fed. Cir. R. 36. *Apeldyn Corp. v. AU Optronics Corp.*, 522 F. App’x 912, 912 (Fed. Cir. 2013). Accordingly, the court concludes that the issue presently before the court was actually litigated.

## **2. Full and Fair Opportunity to Litigate.**

Plaintiff alleges that the inventor of the ‘382 patent, Mr. Scott Rumbaugh (“Rumbaugh”), recently discovered a way to measure voltage from the circuitry on a

broken LCD. (D.I. 190 at 11) Specifically, plaintiff claims that Rumbaugh serendipitously discovered, “after much trial and error,” that the panel circuitry of a LCD operated with a broken front glass plate. (D.I. 191, ex. 1 at ¶ 13) In the 08-568 case, the 08-568 defendants’ expert testified that it would be “virtually impossible to measure” the voltage applied to the pixel electrode because, when the measurement probe is inserted, “the whole thing is so many [sic] disturbed, that you’re not measuring what you’re intending to measure.” (D.I. 191, ex. 6 at 104:4-12; see also D.I. 191, ex. 7 at 50:23-51:11 (Samsung’s engineer testified that measuring the difference between the voltage of the pixel electrode and the common electrode “is not something we can measure or that can be measurable.”)) Following summary judgment in the 08-568 case, Rumbaugh purportedly obtained a custom-made high-impedance probe that was able to measure, rather than discharge, the voltage on the storage capacitor. (D.I. 191, ex. 1 at ¶¶ 16-17) Rumbaugh used the high-impedance probe attached to an oscilloscope probe to measure the change in voltage on the retarder electrode in response to a video input and to thereafter calculate the voltage differential between the common and retarder electrodes. (D.I. 191, ex. 3 at ¶ 53, ex. 4 at 8) Using this technique, Rumbaugh reportedly detected a waveform with three amplitudes. (*Id.* at 10)

Defendants argue that the measurement was not “unavailable” because Rumbaugh conceded that “[d]uring the pendency of the [08-568] case [he] didn’t attempt to develop a method to directly measure the voltage on a pixel electrode.” (D.I. 169, ex. 11 at 30:18-22) When asked whether he could provide any “concrete reason” for why Rumbaugh could not have used the technique three years earlier, plaintiff’s technical expert testified that “[i]n hindsight, I think maybe he could have. I can’t give

you a reason why he couldn't specifically have been able to do that, in hindsight." (D.I. 169, ex. 12 at 160:4-10) Defendants' expert opined that measurements of voltages held at the pixel electrode "could have been performed by [Rumbaugh] in the [08-568] case, and thus were available to plaintiff in the earlier litigation." (D.I. 169, ex. 8 at ¶ 96)

Regardless of whether the signal measured by Rumbaugh represents "new evidence," it cannot be used to avoid collateral estoppel unless the facts are "controlling" or "essential to [the] judgment." *Raytech Corp. v. White*, 54 F.3d 187, 193 (3d Cir. 1995) (citing *Montana v. United States*, 440 U.S. 147, 155, 159 (1979)). In this vein, plaintiff argues that the signal measured by Rumbaugh is relevant because it is a more direct measurement than the signal previously analyzed by the court. In the 08-568 case, the parties disputed which signal qualifies as the supplied signal "to said retarder to control its retardance." ('382 patent, claim 20) The court considered plaintiff's evidence of an "overdrive voltage response" in the accused devices, depicting measurements of the signal "**across** the subpixels themselves." (Civ. No. 08-568, D.I. 627 at 16) CMO's expert, on the other hand, "analyzed the 'waveform of the drive signal **provided to** a pixel during each frame period.'" (*Id.*) CMO's non-infringement position rested on the finding that the drive signal provided to a pixel has a single driving voltage and does not exhibit a waveform with three different amplitudes, as required by the claims. (*Id.* at 13-14) The court resolved the dispute by reasoning that "[i]n order to adopt [plaintiff's] infringement argument, the court would need to construe the claims to allow the retardance of the cell to be changed, not by the first 'signal,' but by the 'applied voltage from the stored charge.' Such a construction is not consistent with the



language of the claims or the specification.” (*Id.* at 16) (citations omitted) The court then granted summary judgment in favor of CMO. (*Id.* at 16-17)

On appeal to the Federal Circuit, plaintiff argued that the court erred “in concluding that the accused devices did not infringe either Claim 20 or Claim 1 because, it concluded, there was a difference between applying a voltage signal ‘across’ the retarder’s electrodes and applying a signal ‘to’ the retarder.” (D.I. 169, ex. 3 at 20; *see also* D.I. 169, ex. 4. at 14 (the 08-568 defendants “erroneously focus on the signal from the source driver to the subpixel instead of the signal supplied to the retarder”)) The Federal Circuit affirmed this court’s decision without opinion pursuant to Fed. Cir. R. 36. *Apeldyn Corp.*, 522 F. App’x at 912.

Presently, plaintiff argues that the signal on the column line (measured by the defendants in the 08-568 case) cannot be the claimed signal because it is an “intermediate signal . . . that is at least one step removed from the retarder.” (D.I. 191, ex. 1 at ¶ 25; *see also* D.I. 191, ex. 4 at 141:7-143:11 (defendants’ expert admits that “there are so many steps in between” the signal on the data bus line and the ultimate change in retardance)) Plaintiff’s expert explains that the “column line transmits a signal which is used in coordination with the row line signals to generate signals to all the individual retarders on that column.” (D.I. 191, ex. 1 at ¶ 31) Plaintiff’s expert opines that, in contrast, the signal measured by Rumbaugh is supplied “directly to the retarder electrode.” (D.I. 191, ex. 3 at ¶ 83) Essentially, plaintiff’s expert distinguishes between “direct” signals (such as those measured by Rumbaugh) and “intermediate signals” (such as those supplied by the signal on the column line). (D.I. 191, ex. 1 at ¶ 32) He explains that “[t]o obtain the actual signal supplied to a given retarder, the sample and

hold signal must sample the voltage on the column line at a particular time corresponding to the given retarder at the beginning of a frame and hold the sampled voltage for the duration of the frame and repeat that step for each sequential frame. This sampled and held signal, which typically changes from frame to frame, is the actual signal supplied directly to the retarder by the output of the sample hold circuit, not by the column line.” (*Id.*)

Plaintiff’s argument rests on the assumption that the “retarder” is distinct from the “pixel or subpixel” (hereinafter referred to as the “pixel”), and that the “sample and hold circuit” (depicted as being within the pixel or subpixel but distinct from the retarder), therefore, provides a more direct signal. (D.I. 190 at 3) However, this argument is merely a reimagining of plaintiff’s original argument that it is erroneous to consider “the signal only as it is measured from the source driver, not at the point it reaches the retarder electrodes.” (Civ. No. 08-568, D.I. 530 at 10-12) The court considered and rejected this argument, implicitly equating the pixel and the retarder<sup>2</sup> and finding that the drive signal sent from the source driver to the pixel is the claimed “signal.” (Civ. No. 08-568, D.I. 627 at 15) Although Rumbaugh’s technique may be new, as Rumbaugh himself admitted, he “measured the voltage supplied to the retarder electrode, which is the same as the voltage across the retarder.” (D.I. 169, ex. 13 at 9:21-23) Notably, plaintiff fails to explain how the signal measured by Rumbaugh materially differs from the “overdrive voltage response” signal previously considered by the court. In order to find that Rumbaugh’s “new evidence” supports a finding of infringement, the court would

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<sup>2</sup> Plaintiff admits that the “retarder electrode’ is often referenced in the industry . . . as the ‘pixel electrode.’” (D.I. 190 at 2 n.4)

have to reject its previous determination that the claimed signal is the signal provided to the pixel electrodes, not the signal held across the pixel electrodes. Altogether, the court is not persuaded that plaintiff was deprived of crucial evidence that resulted in an inability to fully and fairly litigate the issue in question in the 08-568 case.<sup>3</sup> Accordingly, the court grants defendants' motion for summary judgment of non-infringement due to collateral estoppel.<sup>4</sup> (D.I. 167)

### **B. Defendants' Motion of Invalidity**

Defendants move for summary judgment of invalidity of the '382 patent, arguing that claim 20 of the '382 patent is anticipated by four separate prior art references: (1) U.S. Patent No. 4,652,087 to Bos et al. ("Bos"); (2) U.S. Patent No. 5,074,647 to Ferguson et al. ("Ferguson I"); (3) U.S. Patent No. 5,252,817 to Ferguson et al. ("Ferguson II"); and (4) Shin-Tson Wu, Nematic Liquid Crystal Modulator with Response Time Less Than 100  $\mu$ s at Room Temperature, 57 APPLIED PHYSICS LETTERS 986 (Sept. 3, 1990) ("Wu") (together, "the prior art references"). Defendants' invalidity expert submitted a detailed invalidity opinion, describing how each of the prior art references anticipates each limitation of claim 20.<sup>5</sup> (D.I. 166, ex. 8 at VIII.A) Although

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<sup>3</sup> As the court does not rely on the infringement testimony of plaintiff's technical expert in reaching its decision, the court denies defendants' motion to exclude said testimony (D.I. 150) as moot.

<sup>4</sup> Because the court grants summary judgment on the basis of collateral estoppel, the court does not consider defendants' alternative argument seeking summary judgment of non-infringement on the merits. Plaintiff's related motion to exclude certain testimony from defendants' expert (D.I. 146) is denied as moot.

<sup>5</sup> For the sake of judicial economy, the court does not summarize defendants' expert's invalidity opinion here.

all four prior art references were before the examiner during reexamination,<sup>6</sup> plaintiff's invalidity expert, Dr. Allan Kmetz ("Dr. Kmetz"), only noted a single difference between the prior art references and claim 20. (D.I. 166, ex. 2 at ¶ 75) Specifically, Dr. Kmetz opined that claim 20 requires the ability to "switch [] between intermediate retardance values across a range of retardances," whereas the four prior art references "disclose switching between an 'on' state and an 'off' state." (*Id.*) When deposed, Dr. Kmetz admitted that all the limitations found in claim 20, with the exception of "switching between intermediate retardance values," may be found in the four prior art references. (D.I. 166, ex. 3 at 15:2-17:13) Dr. Kmetz also admitted that "[t]here are not words explicitly stating a limitation for switching between intermediate retardance values across a range of retardance values" in claim 20. (*Id.* at 18:20-24) Finally, Dr. Kmetz agreed that if he is wrong and the "requirement for switching values across a range of retardance values across a range of retardance values is not part of claim 20, then claim 20 is anticipated by at the least the four [prior art] references." (*Id.* at 53:2-10)

Plaintiff cites to the same deposition testimony, arguing that Dr. Kmetz raised issues of fact that would render summary judgment inappropriate. However, plaintiff fails to cite testimony that addresses any issue other than whether claim 20 requires switching between intermediate values. (*See id.* at 27:9-17; 44:3-16) Such a question

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<sup>6</sup> The Federal Circuit has held that "[w]hen no prior art other than that which was considered by the PTO examiner is relied on by the attacker, he has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job." *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1304 (Fed. Cir. 2008) (quoting *Am. Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1359 (Fed. Cir. 1984)).

of claim scope is “a matter of law reserved entirely for the court.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996).

In light of Dr. Kmetz’s invalidity report and admissions, the court agrees with defendants that the only dispute concerns the proper construction of the term “controlling an optical retarder for controlling the retardance of light” in the preamble of claim 20. During claim construction in the 08-568 case, plaintiff argued that “controlling the retardance of light” should be construed as “[c]hanging the retardance of polarized light between intermediate values over a range of retardances.” (D.I. 166, ex. 5) The court did not construe the term in the 08-568 case, and neither party presented the term for construction in the instant case.<sup>7</sup> (See, e.g., D.I. 166, ex. 4 at 2) In order to resolve the present dispute, the court now finds it necessary to construe the disputed term, and does so according to the tenants of claim construction set forth by the United States Court of Appeals for the Federal Circuit in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), as follows:

The specification describes two aspects of the invention: (1) “impulse switching” between two values (see ‘382 patent, col. 6:27-61; figures 6A-6D); and (2) an opposing two-retarder system providing switching to selected retardances in a range of retardances (*id.* at 8:7-58; figures 10A-10I). Following the discussion of “impulse switching” between two values, the specification adds that, “in practice the retardance **may** be switched between many different, often random, values **using the same**

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<sup>7</sup> Although plaintiff does not presently identify “controlling the retardance of light” as the term that should be construed to contain the implicit limitation of changing the retardance between intermediate values, the court’s opinion is generally applicable to claim 20 as a whole, and would not be altered if plaintiff were to select an alternative limitation for construction.

**principles of this invention.**” (‘382 patent, 6:62-65) (emphasis added) Given the conditional language and the distinction between random value switching and “this invention,” the court is not persuaded that such a statement mandates switching between random values when employing the method of impulse switching.

Such an interpretation is supported by the prosecution history, in which the applicant described the impulse switching claimed in independent claim 20 as switching from a “first retardance, corresponding to a first drive voltage, to a second retardance, corresponding to a second, higher drive voltage.” (D.I. 166, ex. 7 at 2-3) The applicant distinguished the method of impulse switching recited in claim 20 from independent claim 21, where the difference between retardances “can be maintained while allowing both retarders to relax back to respective intermediate values between their maximum and minimum retardances.” (*Id.* at 3) The distinction between the two independent claims was ultimately preserved in the issued patent, where claim 20 recites “changing said retardance from a first retardance to a second retardance,” but does not mention “intermediate values,” and claim 21 discloses “adjusting the retardance . . . to respective intermediate values between said respective minimum and maximum retardances.” (‘382 patent, claims 20 and 21)

Plaintiff directs the court’s attention to the patent’s discussion of “two significant drawbacks” to the prior art, including a limited retarder response speed due to the responsiveness of the liquid crystal cell material and the inability to drive a change of retardance in the other direction by the application of a voltage. (*Id.* at col. 1:45-57) In particular, plaintiff highlights “the slow response time of known liquid crystal cell retarder systems limits the speed with which they can switch between intermediate values, and

corresponding polarization states, over a wide range of retardances.” (*Id.* at col. 1:61-65) However, plaintiff does not explain why a general discussion of the drawbacks of the prior art should be included in the scope of claim 20,<sup>8</sup> where claim 20 only discloses “impulse switching,” not switching to an intermediate value within a range of retardances. Altogether, the court concludes that “controlling the retardance of light” does not encompass changing the retardance of polarized light between intermediate values over a range of retardances. As the concept of switching between intermediate values is the only alleged difference between claim 20 and the prior art, the court grants defendants’ summary judgment of invalidity of claim 20.<sup>9</sup>

#### **IV. CONCLUSION**

For the foregoing reasons, defendants’ motion for summary judgment of non-infringement due to collateral estoppel (D.I. 167) is granted, defendants’ motion for summary judgment of invalidity (D.I. 164) is granted, defendants’ motion to exclude the infringement testimony of plaintiff’s technical expert, Arlie Conner (D.I. 150) is denied as moot, and plaintiff’s motion to exclude certain testimony from defendants’ expert (D.I. 146) is denied as moot. An appropriate order shall issue.

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<sup>8</sup> “The doctrine of claim differentiation create[s] a presumption that each claim in a patent has a different scope.” *Bradford Co. v. Conteyor N. Am., Inc.*, 603 F.3d 1262, 1271 (Fed. Cir. 2010) (citing *Comark Commc’ns v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). Moreover, “read in the context of the specification, the claims of the patent need not encompass all disclosed embodiments.” *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008).

<sup>9</sup> Defendants’ alternative argument that Ferguson II and Wu disclose switching between intermediate retardance values was un rebutted by plaintiff; therefore, even if the court were to rule differently on the issue of claim construction, summary judgment of invalidity due to anticipation would be appropriate on this basis alone. (See D.I. 165 at 19)