UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

Solas OLED Ltd., an Irish corporation, *Plaintiff*, vs. Apple Inc., a California corporation; *Defendant*.	CASE NO. 6:19-cv-00537 **Complaint for Patent Infringement** **JURY DEMANDED**

Complaint for Patent Infringement

Plaintiff Solas OLED Ltd. ("Solas") files this complaint against Defendant Apple Inc. ("Apple"), alleging infringement of U.S. Patent Nos. 6,072,450, 7,446,338, and 7,573,068 ("Patents-in-Suit"). The accused products are Apple products with organic light-emitting diode ("OLED") displays.

Plaintiff Solas OLED and the Patents-in-Suit.

1. Plaintiff Solas is a technology licensing company organized under the laws of Ireland, with its headquarters at 4-5 Burton Hall Road, Sandyford, Dublin 18.

2. Solas is the owner of U.S. Patent No. 6,072,450, entitled "Display Apparatus," which issued June 6, 2000 (the "'450 patent"). A copy of the '450 patent is attached to this complaint as Exhibit 1.

3. Solas is the owner of U.S. Patent No. 7,446,338, entitled "Display Panel," which issued November 4, 2008 (the "'338 patent"). A copy of the '338 patent is attached to this complaint as Exhibit 2.

4. Solas is the owner of U.S. Patent No. 7,573,068, entitled "Transistor array substrate and display panel," which issued August 11, 2009 (the "'068 patent"). A copy of the '068 patent is attached to this complaint as Exhibit 3.

Defendant and the Accused Products.

5. Defendant Apple Inc. is a California corporation with regular and established places of business in this district.

6. The accused products are Apple products with organic light-emitting diode ("OLED") displays. As illustrative examples, this includes iPhone, Apple Watch, and MacBook Pro models.

Jurisdiction, venue, and joinder.

7. Solas asserts claims for patent infringement against Apple under the patent laws of the United States, including 35 U.S.C. §§ 271 and 281, et seq. The Court has original jurisdiction over Solas' patent infringement claims under 28 U.S.C. §§ 1331 and 1338(a).

8. The Court has personal jurisdiction over Apple. Apple has regular and established places of business within this district and has committed acts of infringement within this district (e.g., selling and using Accused Products). Apple has established minimum contacts with the State of Texas such that the exercise of jurisdiction over Apple would not offend traditional notions of fair play and substantial justice.

9. Venue is proper in this district under 28 U.S.C. §1400(b) and 28 U.S.C. §§ 1391(c). Apple has regular and established places of business in this district at: 12545 Riata

Vista Cir, Austin, TX 78727; 2901 S. Capital of Texas Hwy, Austin, TX 78746; 3121 Palm Way, Austin, TX 78758; 8401 Gateway Boulevard West, El Paso, TX 79925; 15900 La Cantera Parkway, San Antonio, TX 78256; and 7400 San Pedro Avenue, San Antonio, TX 78216.

Count 1 – Claim for infringement of the '450 patent.

10. Solas incorporates by reference each of the allegations in the above paragraphs and further alleges as follows:

11. On June 6, 2000, the United States Patent and Trademark Office issued U.S. Patent No. 6,072,450, entitled "Display Apparatus." Ex. 1.

12. Solas is the owner of the '450 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

13. Each claim of the '450 patent is valid, enforceable, and patent-eligible.

14. Solas and its predecessors in interest have satisfied the requirements of 35 U.S.C. § 287(a) with respect to the '450 patent, and Solas is entitled to damages for Apple's past infringement.

15. Apple has directly infringed (literally and equivalently) and induced others to infringe the '450 patent and, unless enjoined, will continue to do so by making, using, selling, offering for sale, or importing products that infringe the claims of the '450 patent and by inducing others to infringe the claims of the '450 patent without a license or permission from Solas.

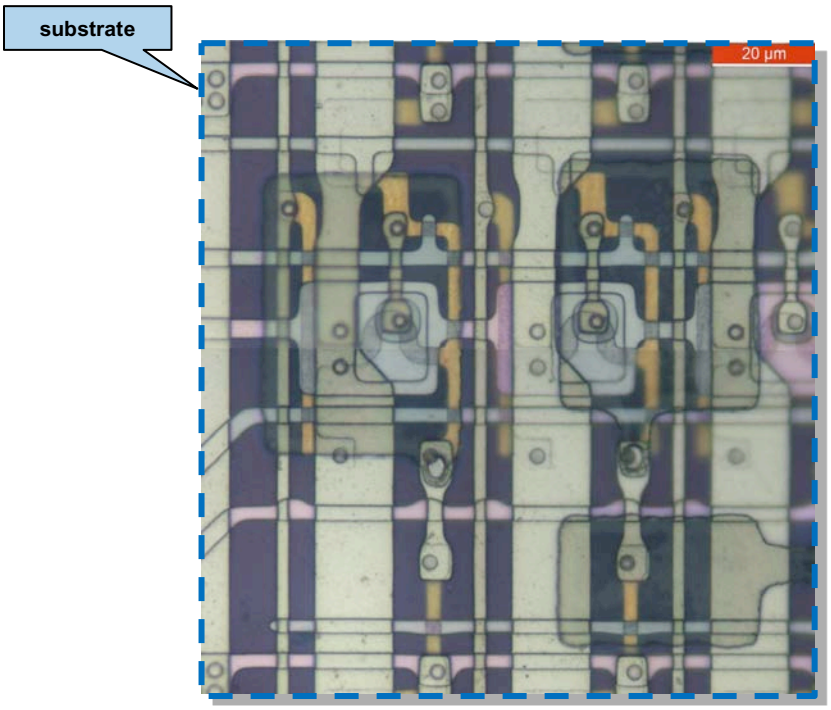
Direct Infringement

16. Apple has directly infringed (literally and equivalently) at least one claim of the '450 patent by making, using, offering to sell, selling, and importing the Accused Products. Apple has infringed multiple claims of the '450 patent, including independent claim 1. By way

of example only, the Apple MacBook Pro infringes an exemplary claim of the '450 patent, as in the following description, which Solas provides without the benefit of information about the accused device obtained through discovery. For example, claim 1 claims a display apparatus as follows:

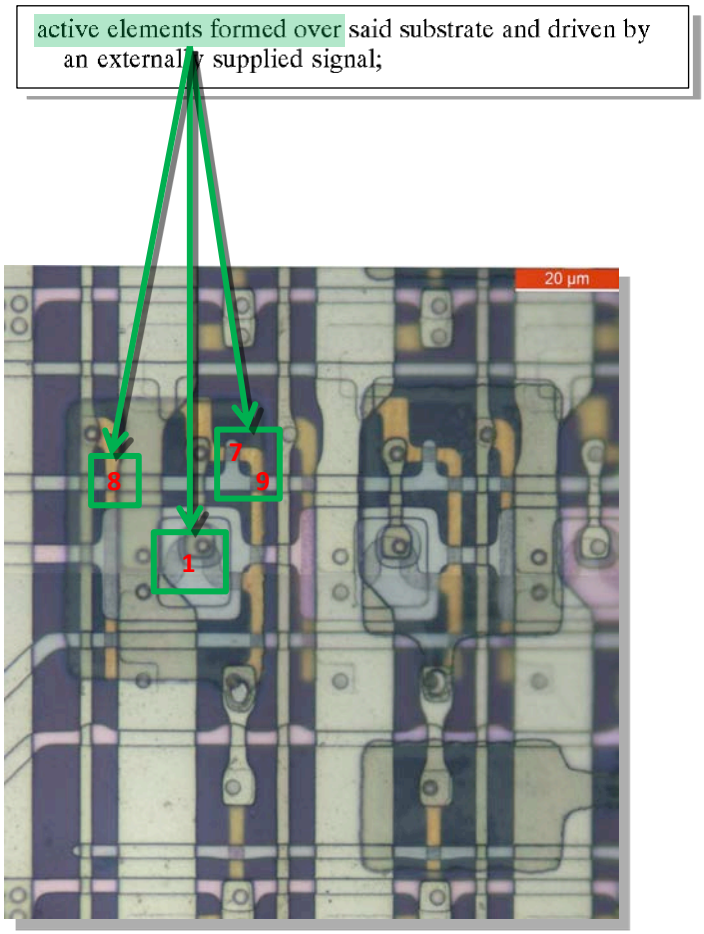
[1a] "a substrate;"

The accused MacBook Pro laptops include Organic Light Emitting Diode (OLED) panels that include a polyimide substrate:

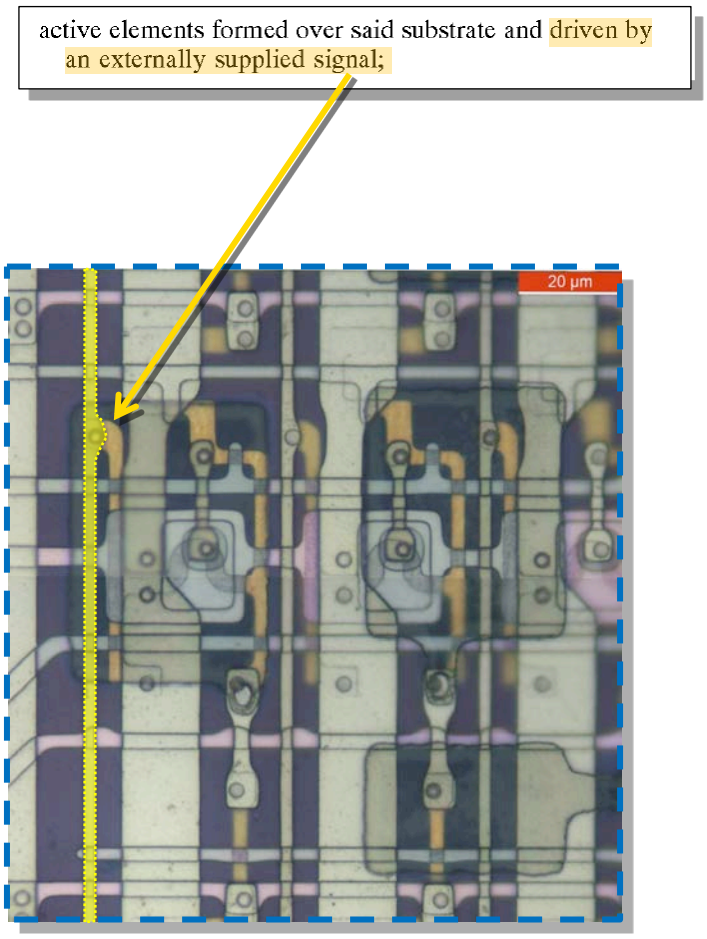


[1b] "active elements formed over said substrate and driven by an externally supplied signal;"

The accused MacBook Pro laptops include active elements formed over the substrate:

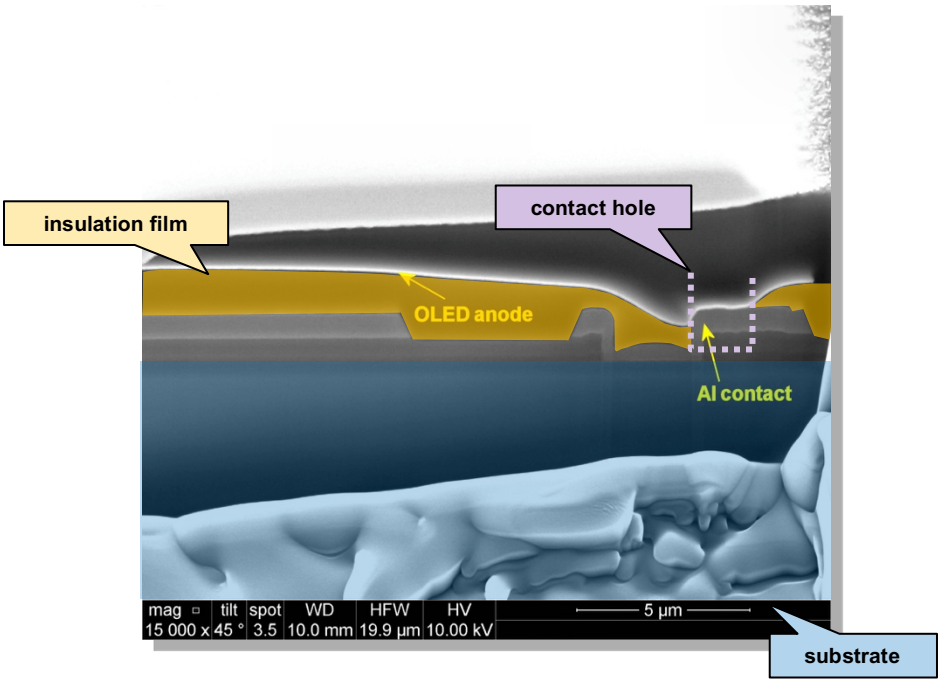


These active elements are driven by an externally supplied signal:



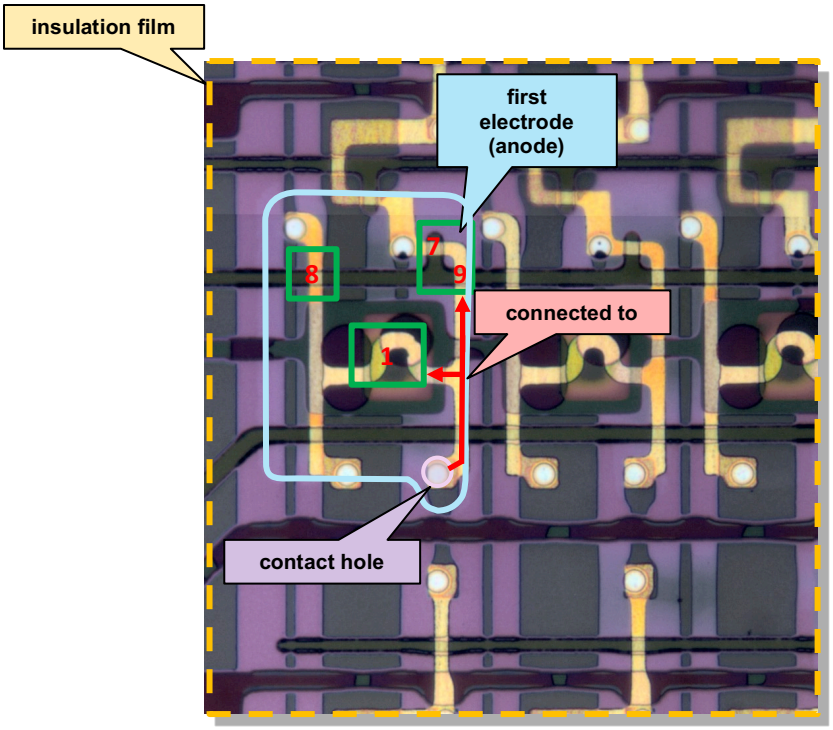
[1c] "an insulation film formed over said substrate so as to cover said active elements, said insulation having at least one contact hole;"

In the accused MacBook Pro laptops, an insulation film is formed over the substrate, covers the active elements, and has contact holes:

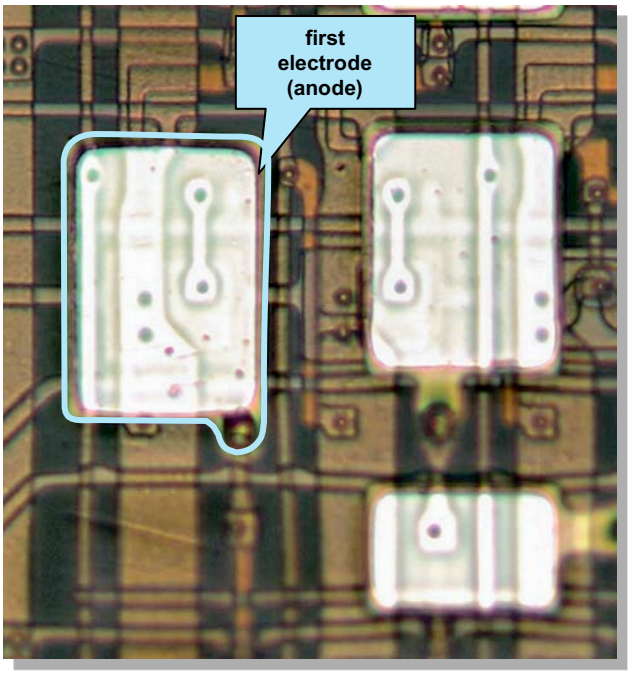


[1d] "at least one first electrode formed on said insulation film so as to cover said active elements, and connected to said active elements through said at least one contact hole, said at least one first electrode being made of a material which shields visible light;"

In the accused MacBook Pro laptops, an electrode is formed on the insulation film, covers active elements, and is connected to active elements through contact holes:



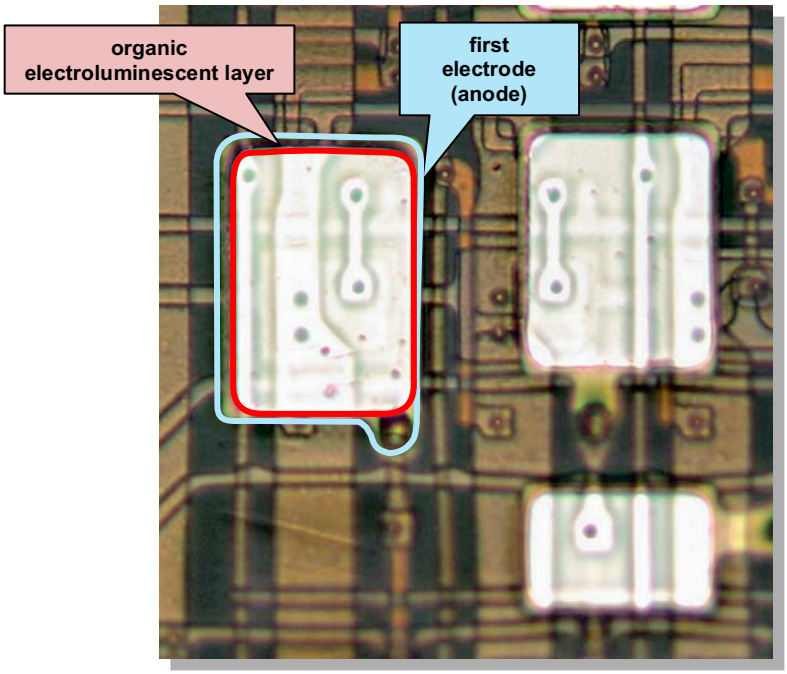
This electrode is formed of a material which shields visible light:



[1e] "an organic electroluminescent layer having an organic electroluminescent material formed on said at least one first electrode so as to cover said active elements and

including at least one layer which emits light in accordance with a voltage applied to said at least one layer;"

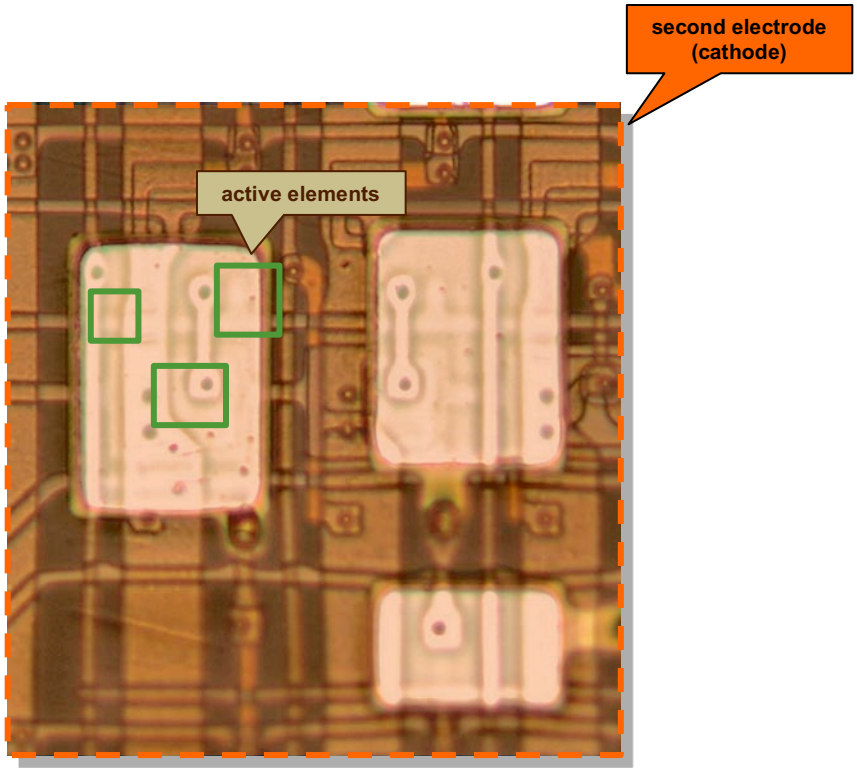
In the accused MacBook Pro laptops, a layer of organic electroluminescent material is formed on the electrode, and covers active elements:



This organic electroluminescent layer emits in accordance with a voltage applied to the layer using the OLED cathode and anode.

[1f] "and at least one second electrode formed on said organic electroluminescent layer which covers said active elements."

In the accused MacBook Pro laptops, a second electrode is formed on the organic electroluminescent layer:



Indirect infringement

17. Apple has had knowledge of the '450 patent, from a date no later than the date it receives this complaint. Apple has known how the Accused Products are made and has known, or have been willfully blind to the fact, that making, using, offering to sell, and selling the accused products within the United States, or importing the Accused Products into the United States, would constitute infringement.

18. Apple has induced, and continues to induce, infringement of the '450 patent by actively encouraging others (including distributers and end customers) to use, offer to sell, sell, and import the Accused Products. On information and belief, these acts include providing information and instructions on the use of the Accused Products; providing information, education and instructions supporting sales by distributers; providing the Accused Products to distributers; and indemnifying patent infringement within the United States.

Damages

19. Solas has been damaged by Apple's infringement of the '450 patent and is entitled to damages as provided for in 35 U.S.C. § 284, including reasonable royalty damages.

Count 2 – Claim for infringement of the '338 patent.

20. Solas incorporates by reference each of the allegations in the above paragraphs and further alleges as follows:

21. On November 4, 2008, the United States Patent and Trademark Office issued U.S. Patent No. 7,446,338, entitled "Flexible touch sensor." Ex. 2.

22. Solas is the owner of the '338 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

23. Each claim of the '338 patent is valid, enforceable, and patent-eligible.

24. Solas and its predecessors in interest have satisfied the requirements of 35 U.S.C. § 287(a) with respect to the '338 patent, and Solas is entitled to damages for Apple's past infringement.

25. Apple has directly infringed (literally and equivalently) and induced others to infringe the '338 patent and, unless enjoined, will continue to do so by making, using, selling, offering for sale, or importing products that infringe the claims of the '338 patent and by inducing others to infringe the claims of the '338 patent without a license or permission from Solas.

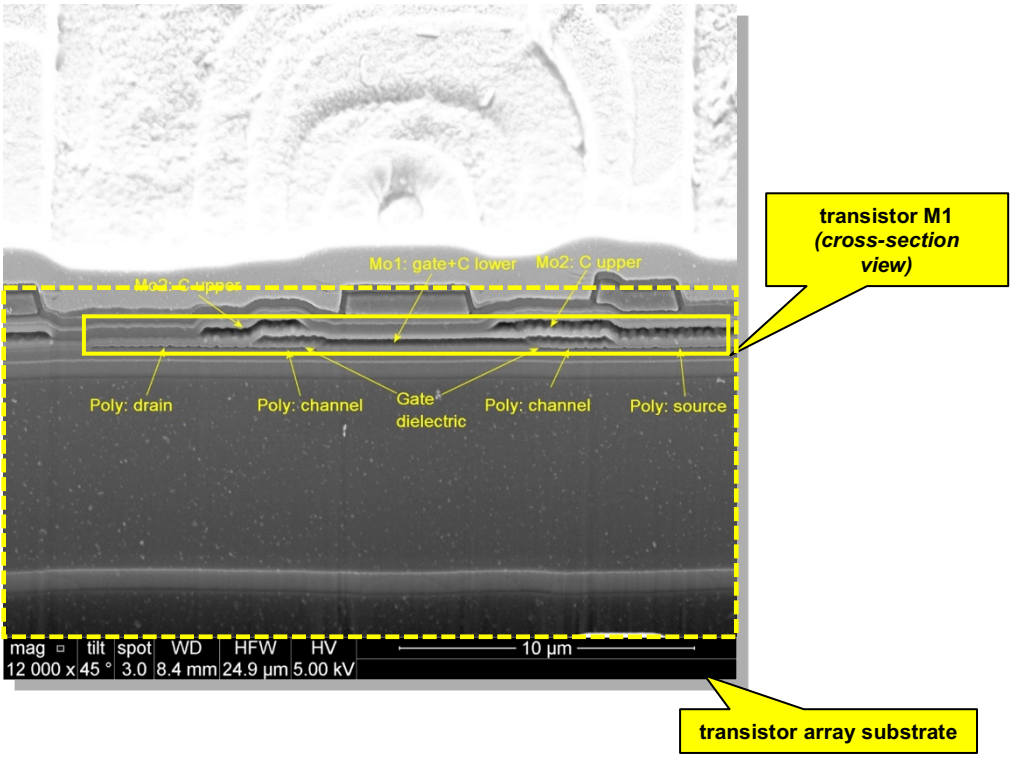
Direct Infringement

26. Apple has directly infringed (literally and equivalently) at least one claim of the '338 patent by making, using, offering to sell, selling, and importing the Accused Products. Apple has infringed multiple claims of the '338 patent, including independent claim 1. By way

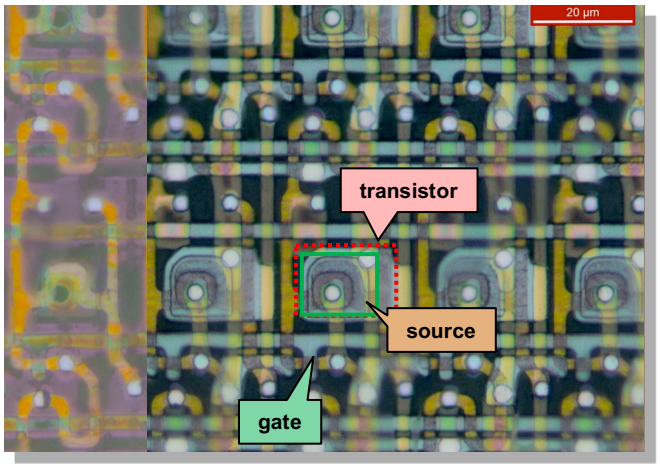
of example only, the Apple iPhone X infringes an exemplary claim of the '338 patent, as in the following description, which Solas provides without the benefit of information about the accused device obtained through discovery. For example, claim 1 claims a display apparatus as follows:

[1a] "a transistor array substrate which includes a plurality of pixels and comprises a plurality of transistors for each pixel, each of the transistors including a gate, a gate insulating film, a source, and a drain;"

The accused iPhone X contains a transistor array substrate:

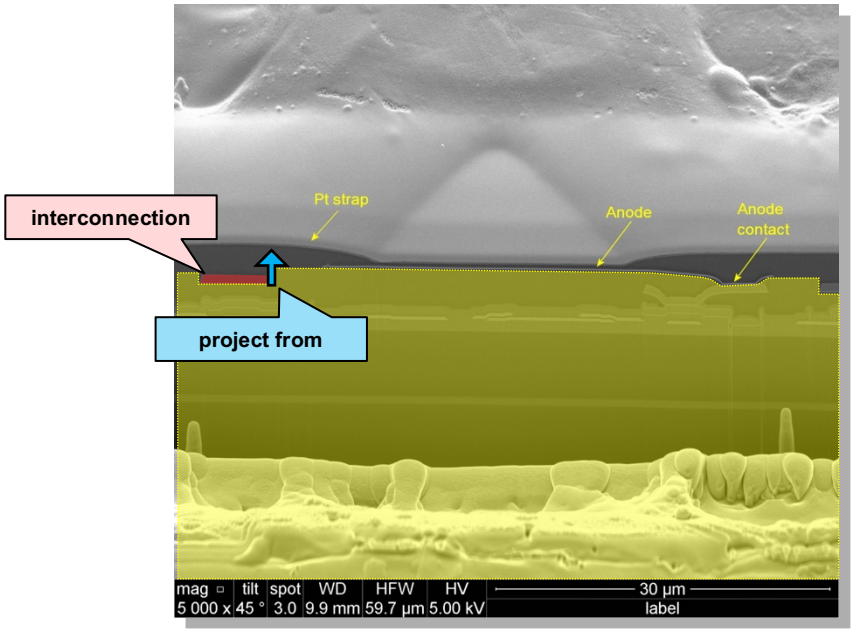


The transistor array substrate includes a plurality of pixels and comprises a plurality of transistors for each pixel, each of the transistors including a gate, a gate insulating film, a source, and a drain:

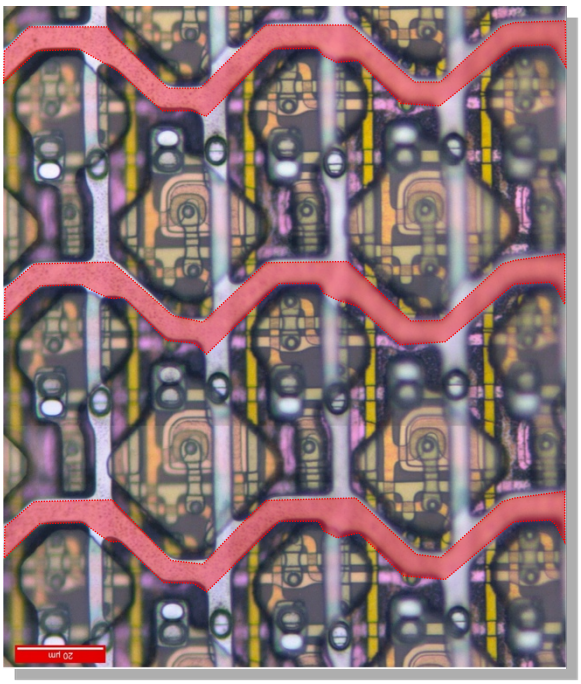


[1b] "a plurality of interconnections which are formed to project from a surface of the transistor array substrate, and which are arrayed in parallel to each other;"

The accused iPhone X includes a plurality of interconnections which are formed to project from a surface of the transistor array substrate:

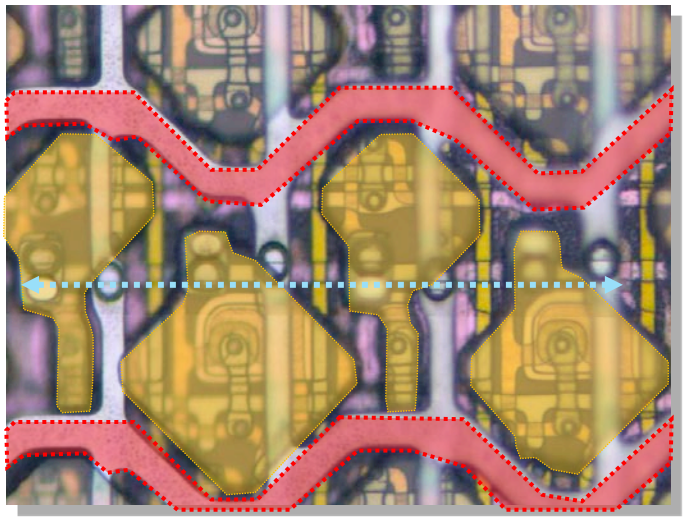


These interconnections are arrayed in parallel to each other:



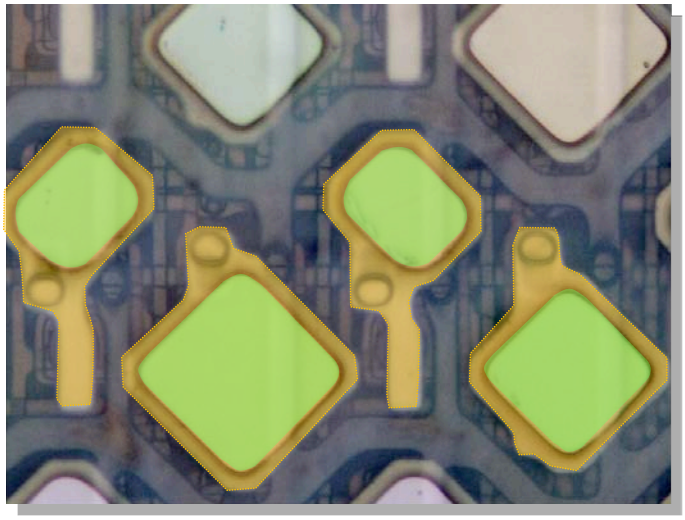
[1c] "a plurality of pixel electrodes for the plurality of pixels, respectively, the pixel electrodes being arrayed along the interconnections between the interconnections on the surface of the transistor array substrate;"

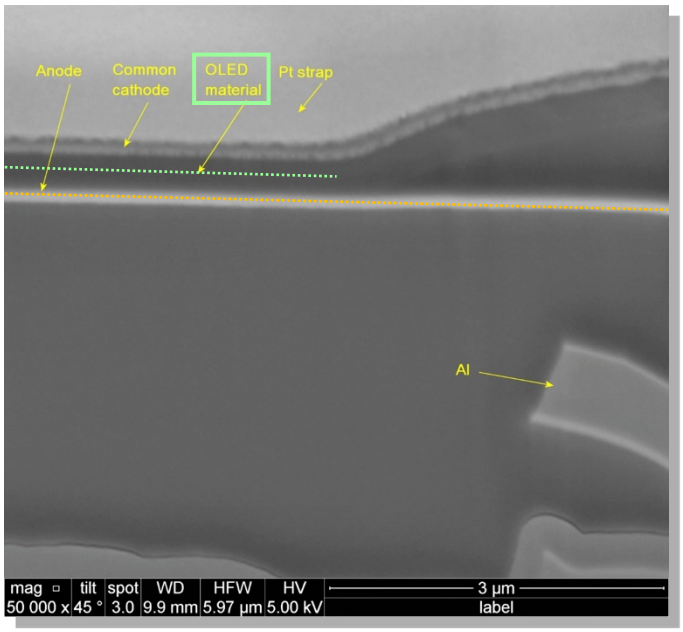
The accused iPhone X includes a plurality of pixel electrodes for the plurality of pixels, respectively, the pixel electrodes being arrayed along the interconnections between the interconnections on the surface of the transistor array substrate:



[1d] "a plurality of light-emitting layers formed on the pixel electrodes, respectively;"

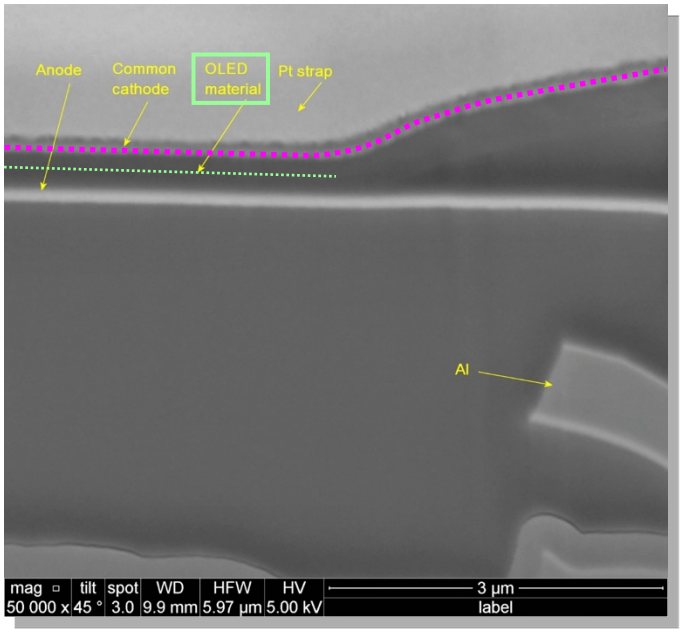
The accused iPhone X includes a plurality of light-emitting layers formed on the pixel electrodes, respectively:





[1e] "and a counter electrode which is stacked on the light-emitting layers,"

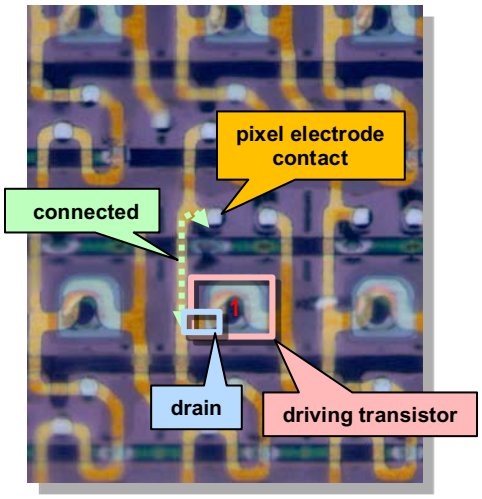
The accused iPhone X includes a counter electrode which is stacked on the light-emitting layers:



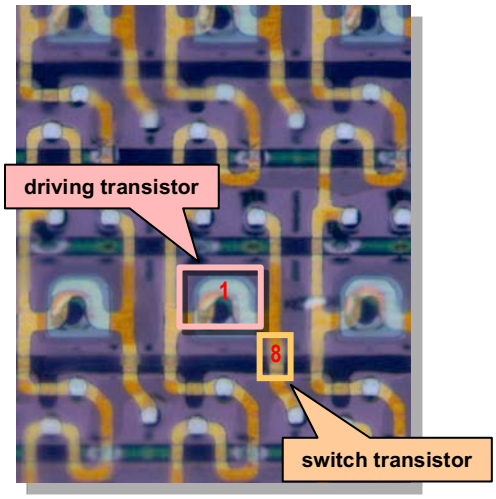
[1f] "wherein said plurality of transistors for each pixel include a driving transistor, one of the source and the drain of which is connected to the pixel electrode, a switch transistor which makes a write current flow between the drain and the source of the

driving transistor, and a holding transistor which holds a voltage between the gate and source of the driving transistor in a light emission period."

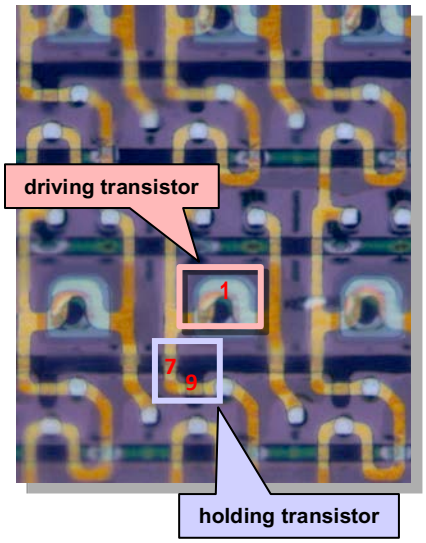
In the accused iPhone X, the plurality of transistors for each pixel includes a driving transistor, one of the source and the drain of which is connected to the pixel electrode:



The plurality of transistors includes a switch transistor which makes a write current flow between the drain and the source of the driving transistor:



The plurality of transistors includes a holding transistor which holds a voltage between the gate and source of the driving transistor in a light emission period:



Indirect infringement

27. Apple has had knowledge of the '338 patent, from a date no later than the date it receives this complaint. Apple has known how the Accused Products are made and has known, or have been willfully blind to the fact, that making, using, offering to sell, and selling the accused products within the United States, or importing the Accused Products into the United States, would constitute infringement.

28. Apple has induced, and continues to induce, infringement of the '338 patent by actively encouraging others (including distributers and end customers) to use, offer to sell, sell, and import the Accused Products. On information and belief, these acts include providing information and instructions on the use of the Accused Products; providing information, education and instructions supporting sales by distributers; providing the Accused Products to distributers; and indemnifying patent infringement within the United States.

Damages

29. Solas has been damaged by Apple's infringement of the '338 patent and is entitled to damages as provided for in 35 U.S.C. § 284, including reasonable royalty damages.

Count 3 – Claim for infringement of the ’068 patent.

30. Solas incorporates by reference each of the allegations in the above paragraphs and further alleges as follows:

31. On August 11, 2009, the United States Patent and Trademark Office issued U.S. Patent No. 7,573,068, entitled “Transistor array substrate and display panel.” Ex. 3.

32. Solas is the owner of the ’068 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

33. Each claim of the ’068 patent is valid, enforceable, and patent-eligible.

34. Solas and its predecessors in interest have satisfied the requirements of 35 U.S.C. § 287(a) with respect to the ’068 patent, and Solas is entitled to damages for Apple’s past infringement.

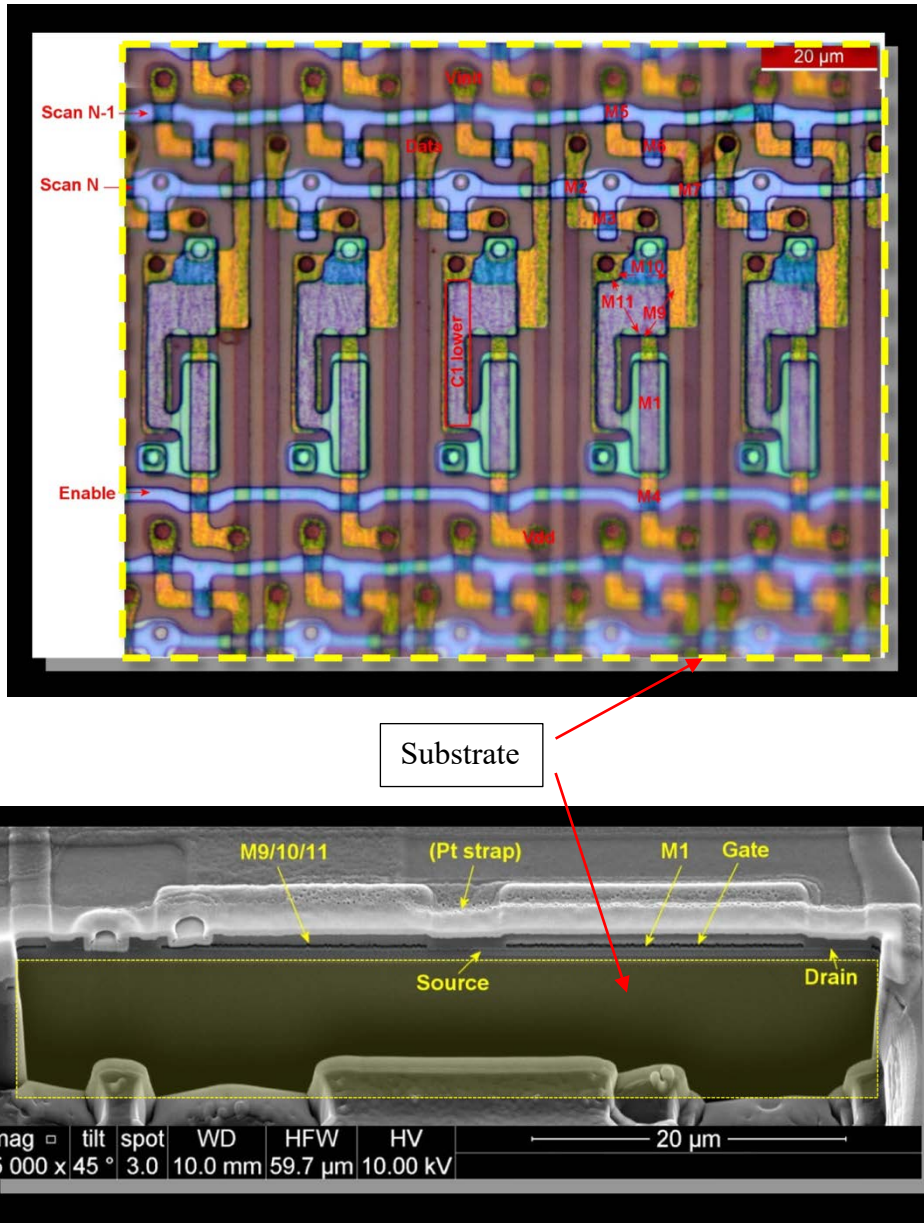
35. Apple has directly infringed (literally and equivalently) and induced others to infringe the ’068 patent and, unless enjoined, will continue to do so by making, using, selling, offering for sale, or importing products that infringe the claims of the ’068 patent and by inducing others to infringe the claims of the ’068 patent without a license or permission from Solas.

Direct Infringement

36. Apple has directly infringed (literally and equivalently) at least one claim of the '068 patent, and continue to do so, by making, using, offering to sell, selling, and importing the Accused Products. By way of example only, the Apple Watch Series 3 infringes an exemplary claim of the '068 patent, as in the following description, which Solas provides without the benefit of information about the accused device obtained through discovery. For example, claim 13 claims a display panel as follows:

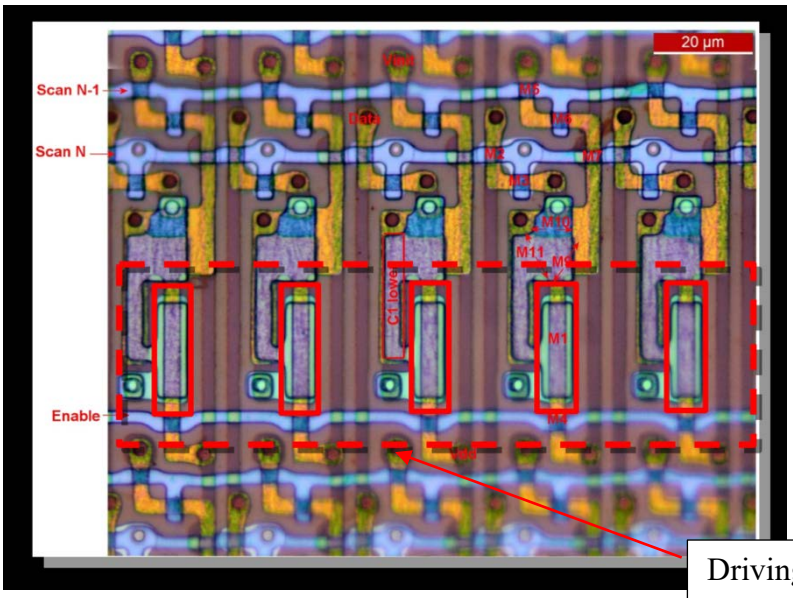
"A display panel comprising: a substrate."

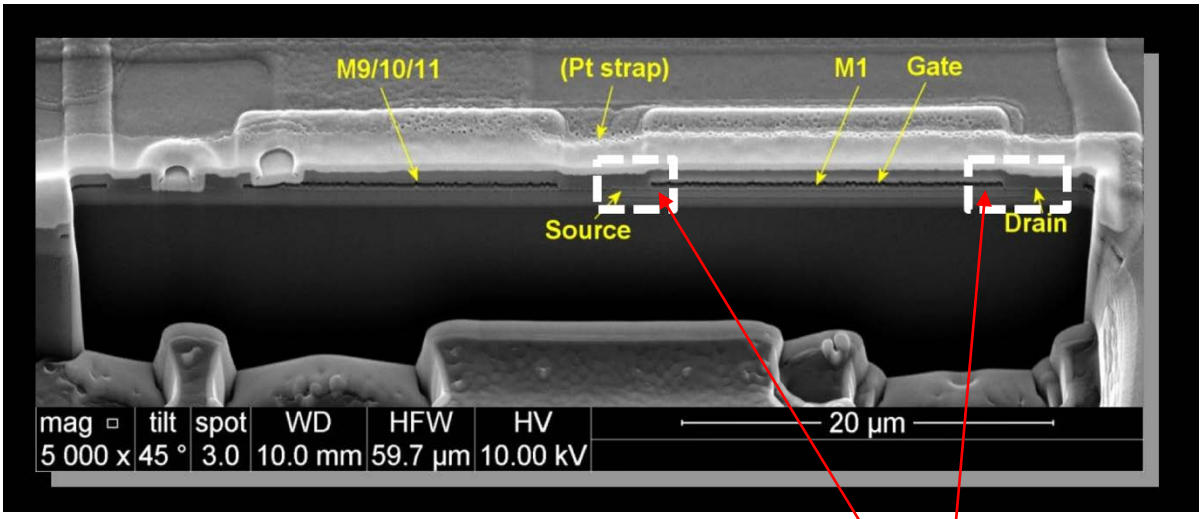
For example, the Apple Watch Series 3 has a display panel comprising a substrate, as shown below.



"a plurality of driving transistors which are arrayed in a matrix on the substrate, each of the driving transistors having a gate, a source, a drain, and a gate insulating film inserted between the gate, and the source and drain."

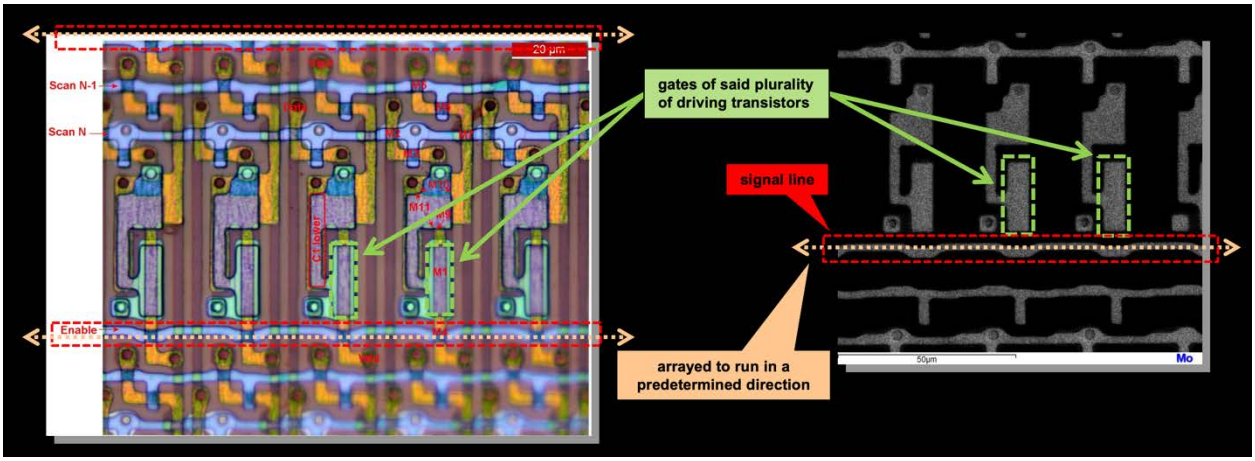
For example, the display panel of the Apple Watch Series 3 comprises a plurality of driving transistors arrayed in a matrix on the substrate, each having a gate, a source, a drain, and a gate insulating film between the gate, and the source and drain, as shown below.





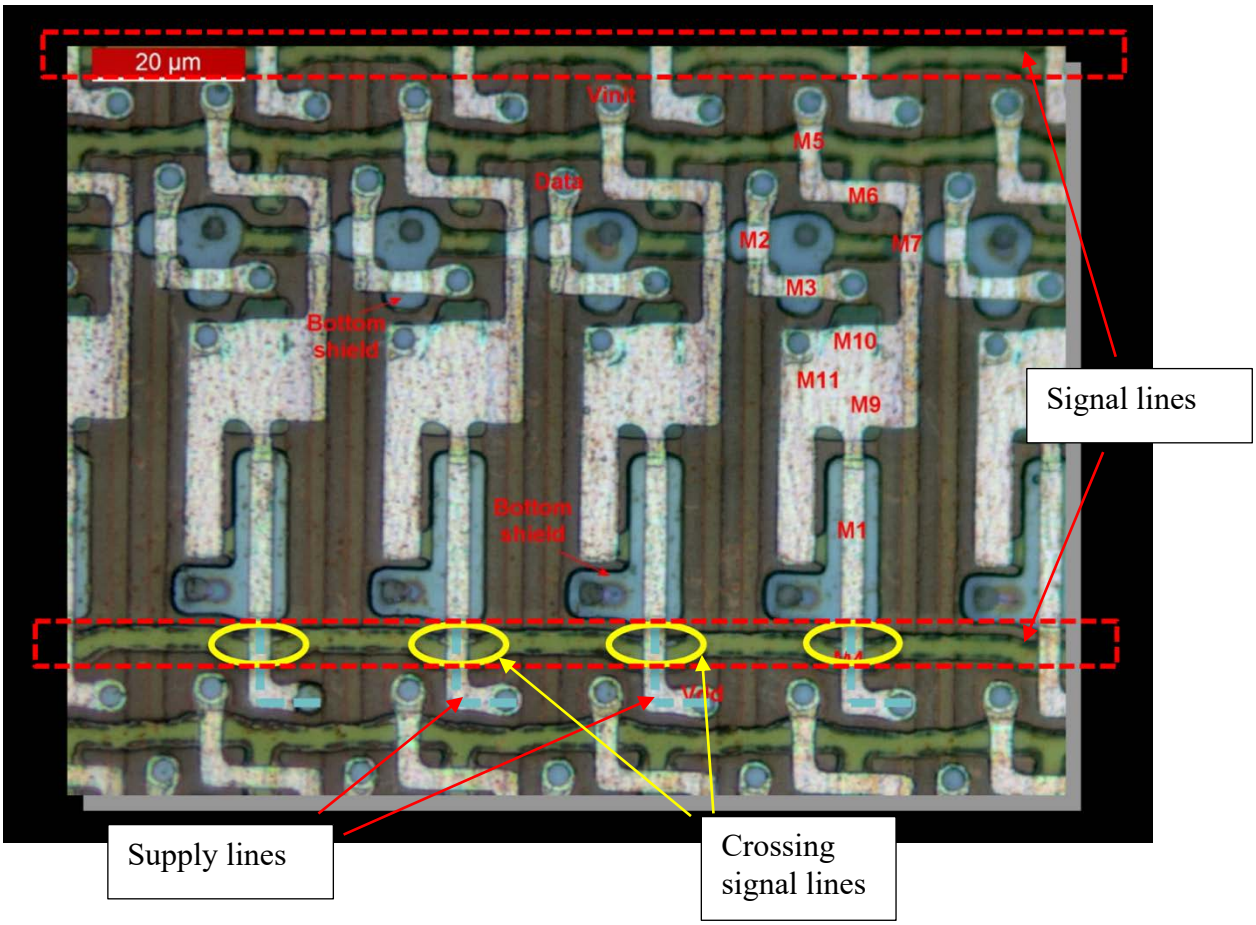
"a plurality of signal lines which are patterned together with the gates of said plurality of driving transistors and arrayed to run in a predetermined direction on the substrate."

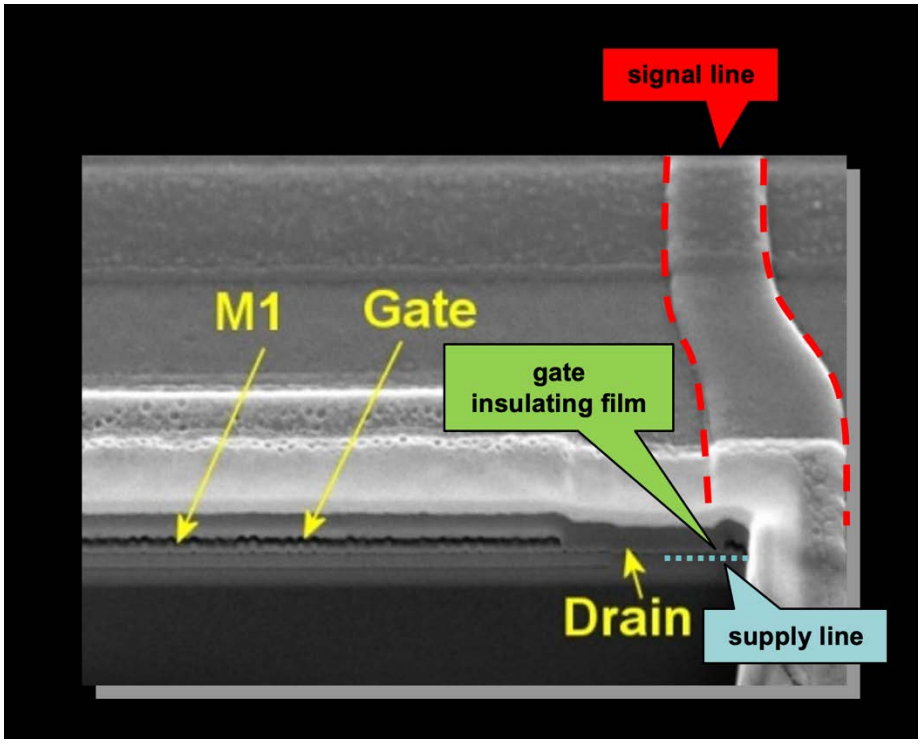
For example, the display panel of the Apple Watch Series 3 comprises a plurality of signal lines that are patterned together with the gates of the driving transistors and arrayed to run in a predetermined direction on the substrate, as shown below.

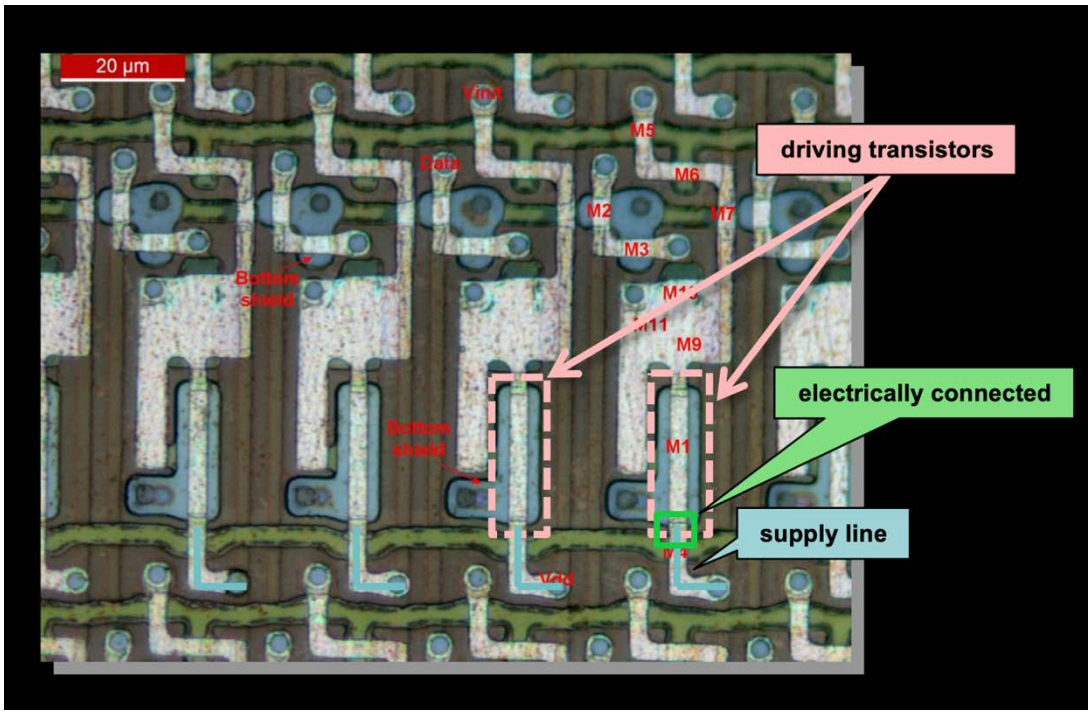


"a plurality of supply lines which are patterned together with the sources and drains of said plurality of driving transistors and arrayed to cross said plurality of signal lines via the gate insulating film, one of the source and the drain of each of driving transistors being electrically connected to one of the supply lines."

For example, the display panel of the Apple Watch Series 3 comprises a plurality of supply lines that are patterned together with the sources and drains of the driving transistors and arrayed to cross the signal lines via the gate insulating film, where one of the source and the drain of the driving transistors are electrically connected to one of the supply lines, as shown below.

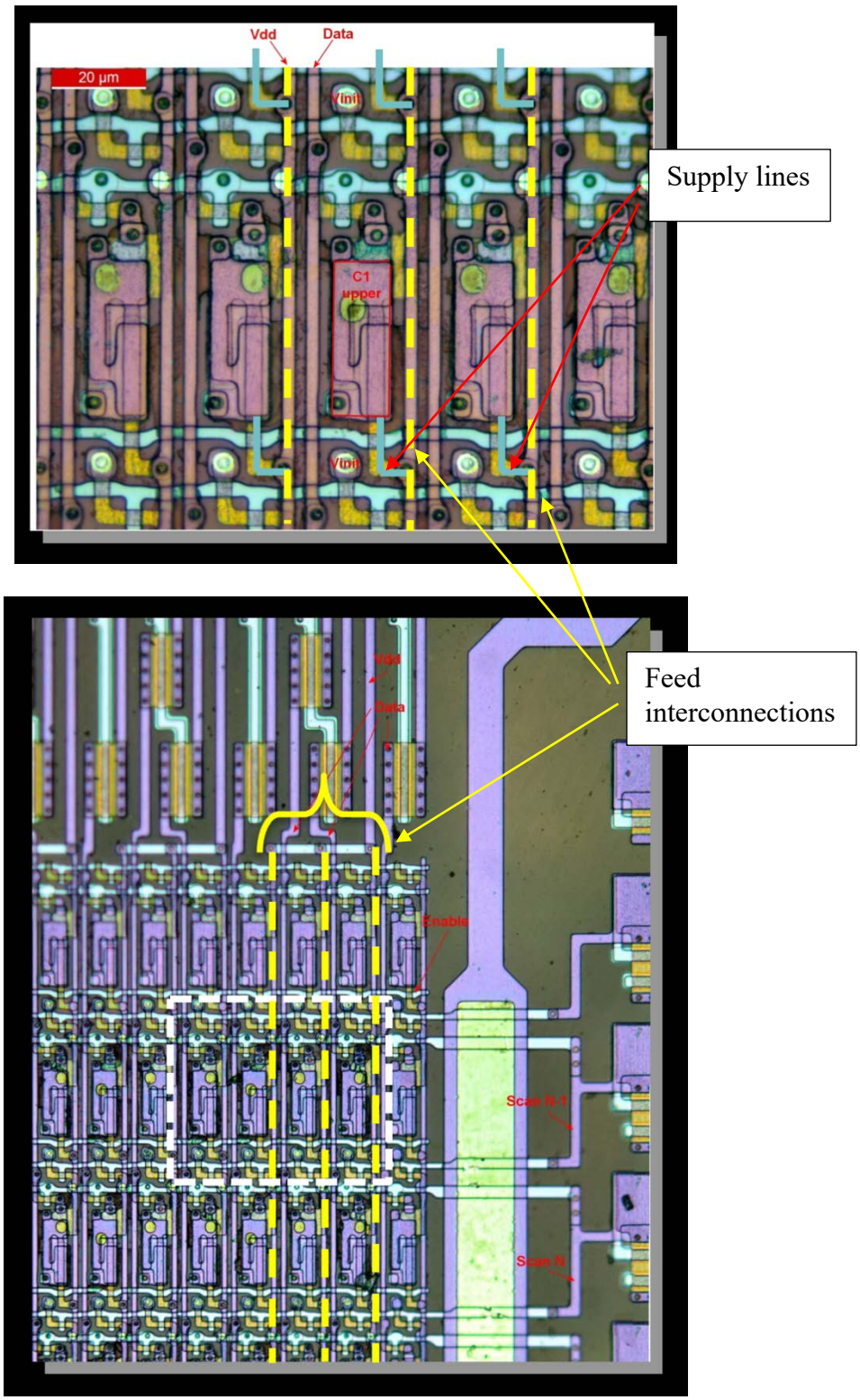

20 µm
Vint
M5
Data
M6
M2
M7
M3
Bottom shield
M10
M11
M9
Bottom shield
M1
Signal lines
Supply lines
Crossing signal lines


signal line
M1
Gate
gate insulating film
Drain
supply line



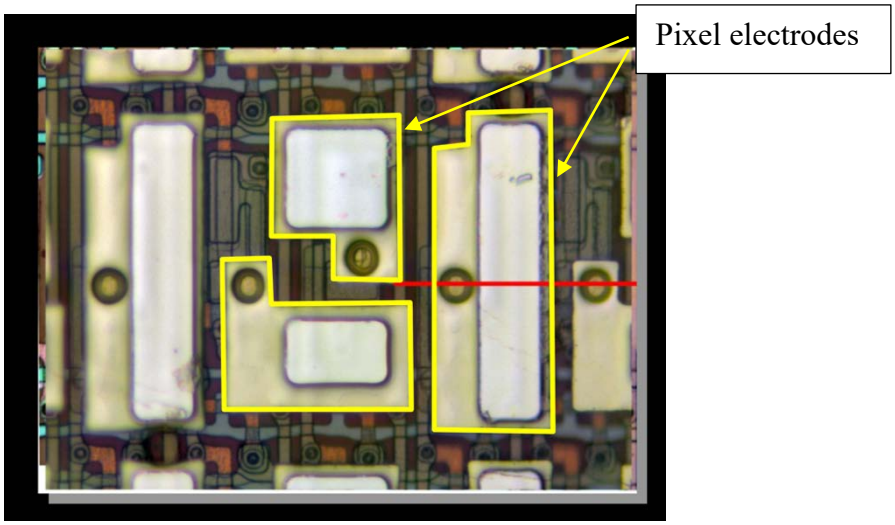
"a plurality of feed interconnections which are connected to said plurality of supply lines along said plurality of supply lines."

For example, the display panel of the Apple Watch Series 3 comprises a plurality of feed interconnections which are connected to the supply lines along the supply lines, as shown below.


Vdd
Data
20 µm
Vinit
C1
upper
Vinit
Supply lines
Vdd
Data
Feed
interconnections
Enable
Scan N-1
Scan N

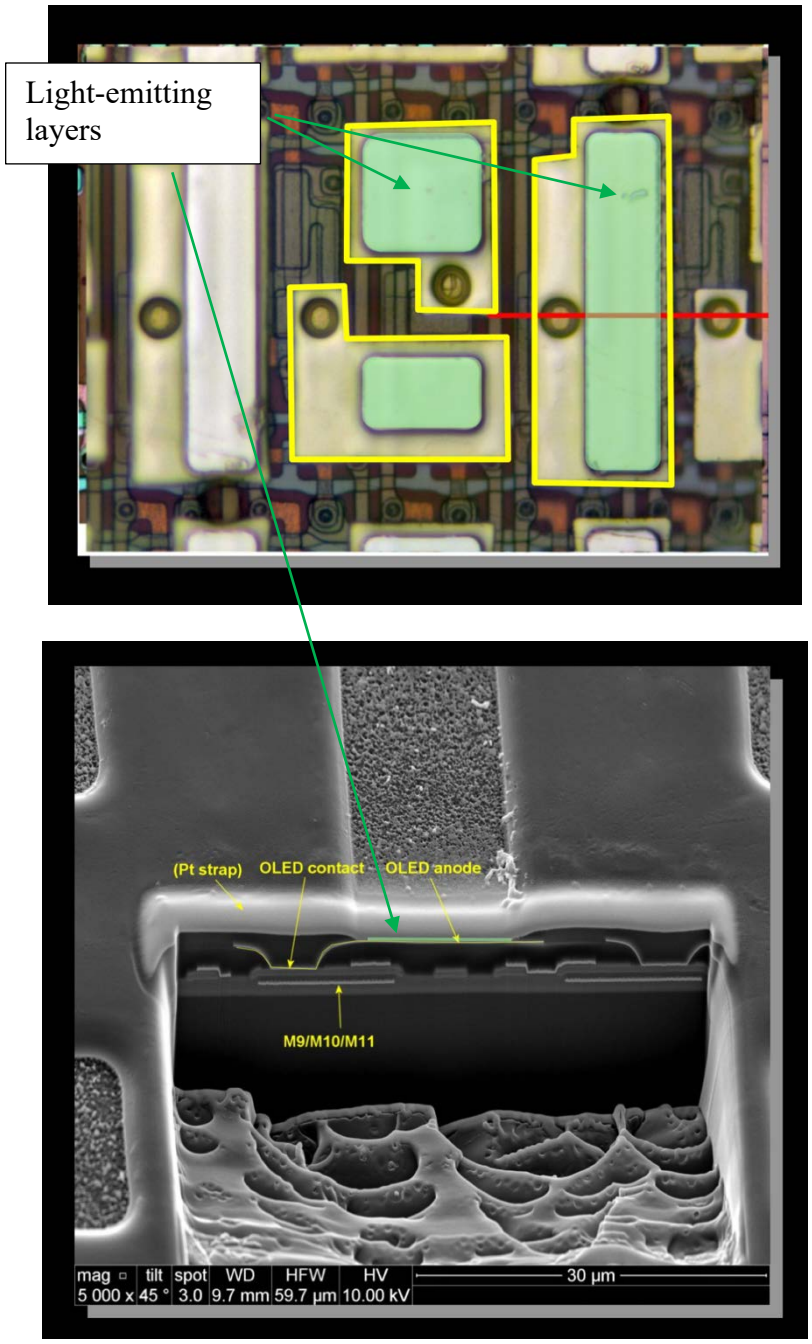
"a plurality of pixel electrodes each of which is electrically connected to the other of the source and the drain of a corresponding one of said plurality of driving transistors."

For example, the display panel of the Apple Watch Series 3 comprises a plurality of pixel electrodes that are electrically connected to the other of the source and the drain of corresponding driving transistors, as shown below.



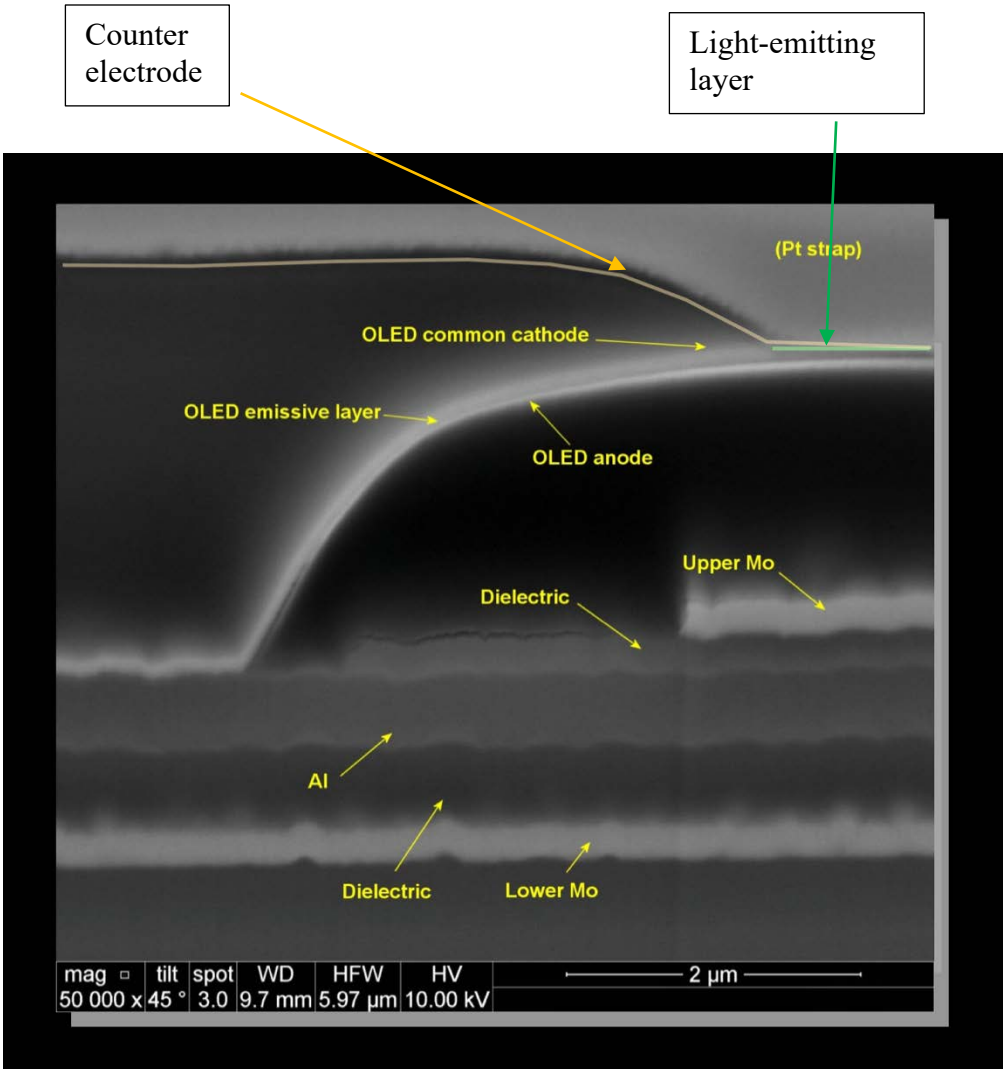
"a plurality of light-emitting layers which are formed on said plurality of pixel electrodes, respectively."

For example, the display panel of the Apple Watch Series 3 comprises a plurality of light-emitting layers that are formed on the pixel electrodes respectively, as shown below.


Light-emitting layers
(Pt strap)
OLED contact
OLED anode
M9/M10/M11
mag
tilt
spot
WD
HFW
HV
5 000 x
45 °
3.0
9.7 mm
59.7 µm
10.00 kV
30 µm

"a counter electrode which covers said plurality of light-emitting layers."

For example, the display panel of the Apple Watch Series 3 comprises a counter electrode that covers the light-emitting layers, as shown below.



Indirect infringement

37. Apple has had knowledge of the '068 patent, from a date no later than the date it receives this complaint. Apple has known how the Accused Products are made and has known, or have been willfully blind to the fact, that making, using, offering to sell, and selling the accused products within the United States, or importing the Accused Products into the United States, would constitute infringement.

38. Apple has induced, and continues to induce, infringement of the ’068 patent by actively encouraging others (including distributers and end customers) to use, offer to sell, sell, and import the Accused Products. On information and belief, these acts include providing information and instructions on the use of the Accused Products; providing information, education and instructions supporting sales by distributers; providing the Accused Products to distributers; and indemnifying patent infringement within the United States.

Damages

39. Solas has been damaged by Apple’s infringement of the ’068 patent and is entitled to damages as provided for in 35 U.S.C. § 284, including reasonable royalty damages.

Jury demand.

40. Solas demands trial by jury of all issues.

Relief requested.

Solas prays for the following relief:

A. A judgment in favor of Solas that Apple has infringed the ’450 patent, the ’338 patent, and the ’068 patent and that the ’450 patent, the ’338 patent, and the ’068 patent are valid, enforceable, and patent-eligible;

B. A judgment and order requiring Apple to pay Solas all damages provided for under 35 U.S.C. § 284, including compensatory damages, costs, expenses, and pre- and post-judgment interest for its infringement of the asserted patents;

D. A permanent injunction prohibiting Apple from further acts of infringement of the ’450 patent, the ’338 patent, and ’068 patent;

E. A judgment and order requiring Apple to provide an accounting and to pay supplemental damages to Solas, including, without limitation, pre-judgment and

post-judgment interest;

F. A finding that this case is exceptional under 35 U.S.C. § 285, and an award of Solas' reasonable attorney's fees and costs; and

G. Any and all other relief to which Solas may be entitled.

Dated: September 12, 2019

Respectfully submitted,

/s/ Reza Mirzaie

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