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

SENSOR ELECTRONIC TECHNOLOGY, INC., Plaintiff, v. LITE-ON TECHNOLOGY CORPORATION, LITE-ON TECHNOLOGY USA, INC., LITE-ON, INC., and LITE-ON TRADING USA, INC. Defendants.	Civil Action No. 6:21-cv-322-ADA **JURY TRIAL DEMANDED**

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT AND DEMAND FOR JURY TRIAL

Plaintiff Sensor Electronic Technology, Inc. ("SETi" or "Plaintiff"), for its First Amended Complaint against defendant Lite-On Technology Corporation, Lite-On Technology USA, Inc, Lite-On, Inc., and Lite-On Trading USA, Inc. (collectively, "defendants" or Lite-On), alleges as follows:

INTRODUCTION

1. SETi brings this patent infringement action to protect its valuable patented technology related to ultraviolet light-emitting diodes ("UV LEDs").

2. A UV LED is a semiconductor device that converts electrical energy

into ultraviolet light. Ultraviolet light has many applications including optical sensors, disinfection, forensics, medical imaging, protein analysis, and polymer curing.

3. UV LEDs have many advantages over conventional UV lamps, including lower energy consumption, longer lifetime, and smaller size.

THE PARTIES

4. SETi was founded in 1999 at the Rensselaer Polytechnic Institute in New York State and relocated to Columbia, South Carolina in 2002.

5. In 2004, SETi launched the world's first commercially available deep UV LED with emission wavelengths shorter than 365 nm.

6. Today, SETi is the world's leading supplier of deep UV LEDs and has more than 300 issued U.S. patents related to this technology.

7. Defendant Lite-On Technology Corporation is a publicly held Taiwanese corporation, traded on the Taiwanese Stock Exchange. Its global headquarters is located in Taiwan, at 392 Ruey Kwang Road, Neihu, Taipei 114, Taiwan, R.O.C. Lite-On Technology Corporation is the parent company of a group of wholly-owned subsidiaries (collectively, the "Lite-On Group") that both manufactures and markets LED products that are accused of infringement herein and are offered for sale in and sold in this District.

8. Defendant Lite-On Technology USA, Inc. is a Delaware

Corporation, part of the Lite-On Group, and a wholly-owned subsidiary of Lite-On Technology Corporation. Upon information and belief, Lite-On Technology USA, Inc. sells and/or offers for sale in the United States LED products manufactured by it and/or Lite-On Technology Corporation, including in the State of Texas and in this judicial district.

9. Lite-On Technology USA, Inc. may be served through its registered agent for service of process, Incorporating Services, Ltd., 3500 S. Dupont Hwy., Dover, Delaware 19901.

10. Defendant Lite-On, Inc. is a California corporation, part of the Lite-On Group, and a wholly-owned subsidiary of Lite-On Technology USA, Inc., with its principal place of business at 720 S. Hillview Drive, Milpitas, CA 95035, with sales offices in this District.

11. Lite-On, Inc. is registered to do business in the State of Texas with a sales office at 1826 Kramer Lane, Building A, Suite D, Austin, TX 78758.

12. Upon information and belief, Lite-On, Inc. has offices in the Western District of Texas where it regularly sells, develops, and/or markets its products, including at the office in Austin.

13. Lite-On, Inc. may be served through its registered agent for service of process, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

14. Defendant Lite-On Trading USA, Inc. is a California corporation that is another wholly-owned subsidiary of Lite-On Technology USA, Inc., with its principal place of business at 720 S. Hillview Drive, Milpitas, California 95035 and offices in Austin, TX, Houston, TX, and Plano, TX.

15. Lite-On Trading USA, Inc. lists an office on its website in the State of Texas with an address of 1826 Kramer Lane, Building A, Suite D, Austin, TX 78758.

16. Lite-On Trading USA, Inc. may be served through its registered agent for service of process, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

17. Lite-On Trading USA, Inc. is registered to do business in the State of Texas.

18. The Lite-On entities referenced above are related entities that operate as part of a corporate group or common business enterprise consisting of a number of related subsidiaries that operate under the Lite-On brand and infringe the Asserted Patents by making, using, importing, offering for sale, and/or selling substantially the same products.

19. Upon information and belief, Lite-On Technology Corporation has legal and effective control over Lite-On Technology USA, Inc. and other Lite-On Group subsidiaries.

20. Upon information and belief, Lite-On Technology USA, Inc. has legal and effective control over Lite-On, Inc., Lite-On Trading USA, Inc., and other Lite-On Group subsidiaries.

JURISDICTION AND VENUE

21. This is an action for patent infringement, under the patent laws of the United States, 35 U.S.C. § 271 et seq. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

22. Venue is proper in this judicial district as to Lite-On Technology Corporation pursuant to 28 U.S.C. § 1391 because Lite-On Technology Corporation is not resident in the United States and, thus, may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See In re HTC Corp.*, 889 F.3d 1349, 1357 (Fed. Cir. 2018).

23. Venue is proper within this judicial District under 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Lite-On is registered to do business in the State of Texas, maintains a regular and established place of business in the State of Texas and in this District, and upon information and belief, has regularly transacted business in the Western District of Texas, and has committed acts of direct and indirect infringement in the Western District of Texas.

24. This Court has general and/or specific personal jurisdiction over Lite-On, Inc., Lite-On Trading USA, Inc., and Lite-On Technology Corporation

because, on information and belief, each is engaged in substantial and continuous business in this District through its conduct of business, including testing, demonstrating, selling, offering for sale, and/or importing infringing products and services to customers. On information and belief, Lite-On, Inc., Lite-On Trading USA, Inc., and Lite-On Technology Corporation also place or cause to have placed infringing products and services into the stream of commerce, with the knowledge that such products and services will be made, imported, sold, offered for sale, and/or used in this District. Therefore, Lite-On, Inc., Lite-On Trading USA, Inc., and Lite-On Technology Corporation each has purposefully availed itself of the privilege of conducting business within this District; has established sufficient minimum contacts with this District such that it should reasonably and fairly anticipate being brought into court in this District without offending traditional notions of fair play and substantial justice; and has purposefully directed activities at residents of this State. Moreover, at least a portion of the patent infringement claims alleged herein arise out of or are related to one or more of the foregoing activities. On information and belief, a substantial part of the events giving rise to SETi's claims, including acts of patent infringement, have occurred in this District.

PATENTS-IN-SUIT

25. On May 3, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,330,906 ("the '906 Patent"), entitled

"Stress Relieving Semiconductor Layer," to Shatalov *et al*. SETi is the owner by assignment of the '906 Patent.

26. Exhibit 1 is a true and correct copy of the '906 Patent.

27. On October 29, 2019, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,460,952 ("the '952 Patent"), entitled "Stress Relieving Semiconductor Layer," to Shatalov *et al*. SETi is the owner by assignment of the '952 Patent.

28. Exhibit 2 is a true and correct copy of the '952 Patent.

29. On October 8, 2013, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,552,562 ("the '562 Patent"), entitled "Profiled Contact for Semiconductor Device," to Simin *et al*. SETi is the owner by assignment of the '562 Patent.

30. Exhibit 3 is a true and correct copy of the '562 Patent.

31. On December 4, 2018, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,147,848 ("the '848 Patent"), entitled "Contact Configuration for Optoelectronic Device," to Gaevski *et al*. SETi is the owner by assignment of the '848 Patent.

32. Exhibit 4 is a true and correct copy of the '848 Patent

33. On December 1, 2020, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,854,785 ("the '785 Patent"),

entitled "Contact Configuration for Optoelectronic Device," to Dobrinsky *et al*. SETi is the owner by assignment of the '785 Patent.

34. Exhibit 5 is a true and correct copy of the '785 Patent.

35. On May 8, 2018, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,966,496 ("the '496 Patent"), entitled "Light Emitting Heterostructure with Partially Relaxed Semiconductor Layer," to Shatalov *et al*. SETi is the owner by assignment of the '496 Patent.

36. Exhibit 6 is a true and correct copy of the '496 Patent.

37. On May 26, 2015, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,042,420 ("the '420 Patent"), entitled "Device with Transparent and Higher Conductive Regions in Lateral Cross Section of Semiconductor Layer," to Shur *et al*. SETi is the owner by assignment of the '420 Patent.

38. Exhibit 7 is a true and correct copy of the '420 Patent.

39. On September 10, 2019, the United States Patent and Trademark

Office duly and legally issued U.S. Patent No. 10,411,156 ("the '156 Patent"), entitled "Device with Transparent and Higher Conductive Regions in Lateral Cross Section of Semiconductor Layer," to Shur *et al*. SETi is the owner by assignment of the '156 Patent.

40. Exhibit 8 is a true and correct copy of the '156 Patent.

41. On March 20, 2018, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,923,117 ("the '117 Patent"), entitled "Semiconductor Structure with Inhomogeneous Regions," to Shatalov *et al*. SETi is the owner by assignment of the '117 Patent.

42. Exhibit 9 is a true and correct copy of the '117 Patent.

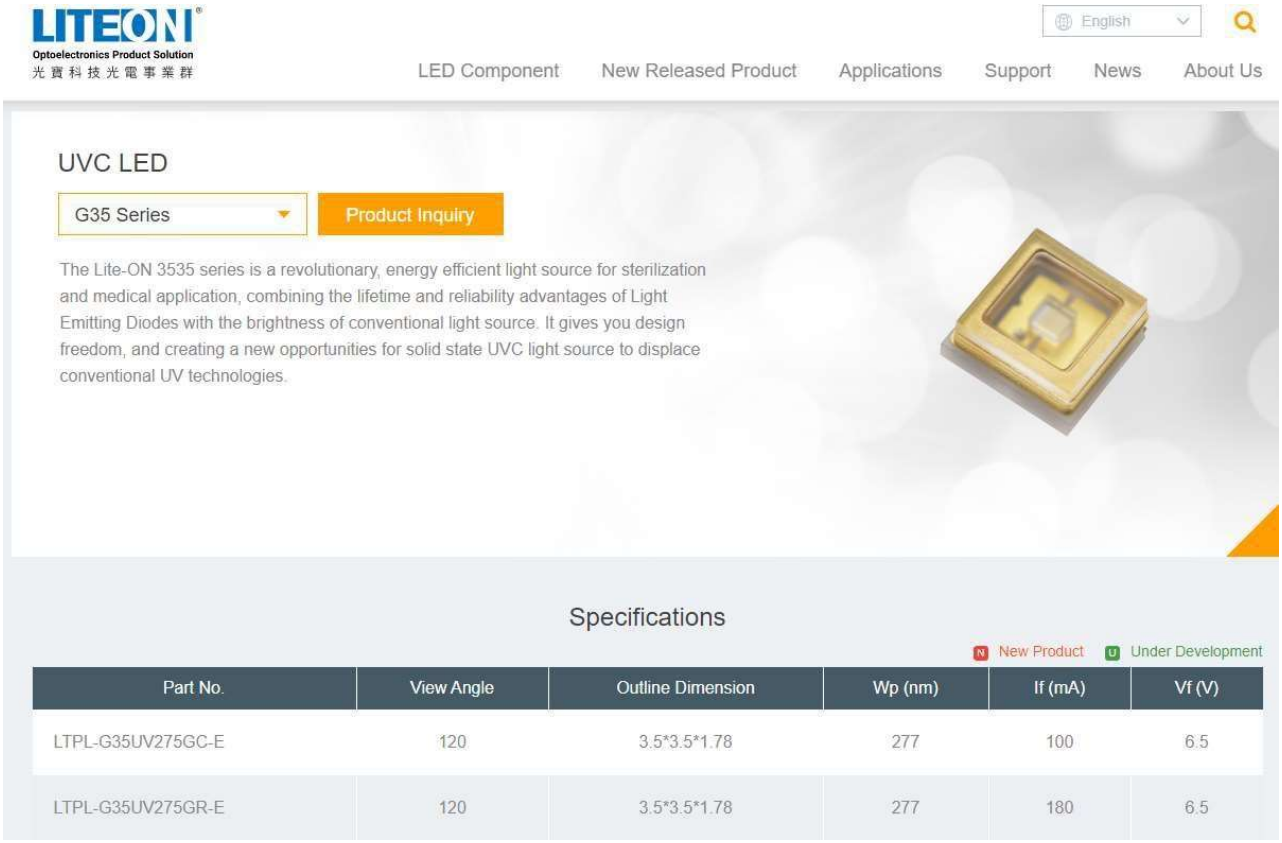
COUNT I

INFRINGEMENT OF THE '906 PATENT

43. Lite-On[1] has infringed and continues to infringe one or more claims of the '906 Patent, including but not limited to exemplary claim 1, pursuant to 35U.S.C. § 271(a) at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States. The

[1] For purposes of the factual allegations directed to infringement, the defendants are referred to collectively as "Lite-On," because, upon information and belief, no differentiation between defendants is necessary with respect to the accused product.

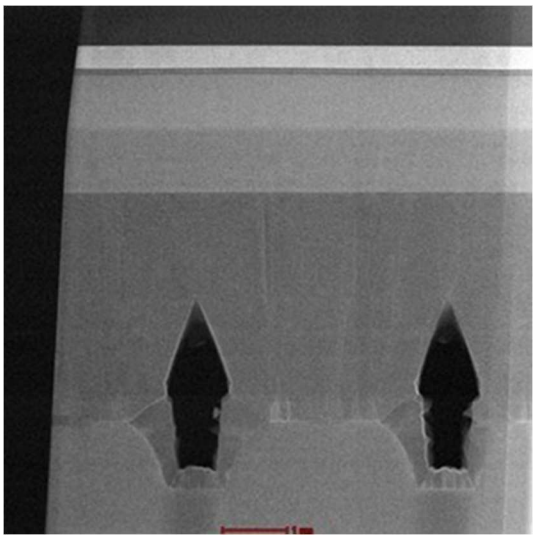
screenshot below identifies the LTPL-G35UV275GC-E UV LED.[2]



Part No.	View Angle	Outline Dimension	Wp (nm)	If (mA)	Vf (V)
LTPL-G35UV275GC-E	120	3.5*3.5*1.78	277	100	6.5
LTPL-G35UV275GR-E	120	3.5*3.5*1.78	277	180	6.5

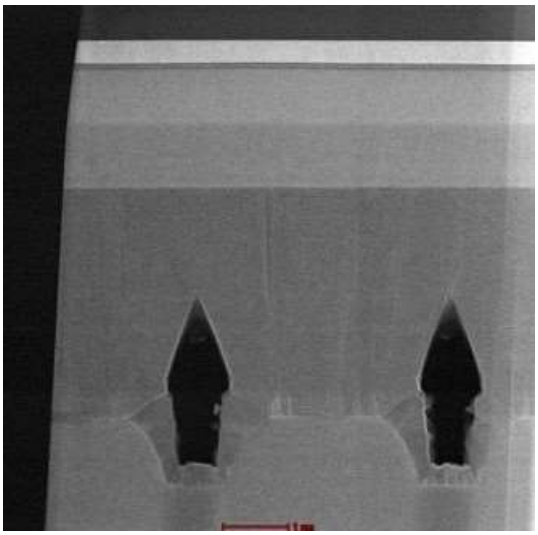
44. Below is a Transmission Electron Microscope ("TEM") image showing a cross section of a heterostructure of the LED chip from the LTPL-G35UV275GC-E.

[2] https://optoelectronics.liteon.com/en-global/led/LED-Component/Detail/1117?param4=18&param5=222.



45. The heterostructure in the TEM image shows a substrate and a nucleation layer located on the substrate, wherein the nucleation layer has a thickness of at least one nanometer and contains no large-scale cavities, and a cavity containing layer, wherein the cavity containing layer is formed of a semiconductor material, and has a thickness greater than two monolayers.

46. As shown in the magnified TEM image below, a plurality of cavities are in the cavity containing layer, and wherein the plurality of cavities have a characteristic size of at least one nanometer and a characteristic separation of at least five nanometers.



47. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

48. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

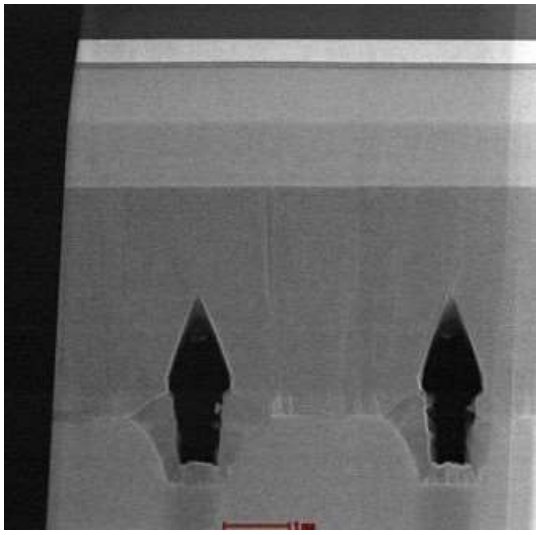
COUNT II

INFRINGEMENT OF THE '952 PATENT

49. Lite-On has infringed and continues to infringe one or more claims of the '952 Patent, including but not limited to exemplary claim 1, pursuant to 35 U.S.C. § 271(a), at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

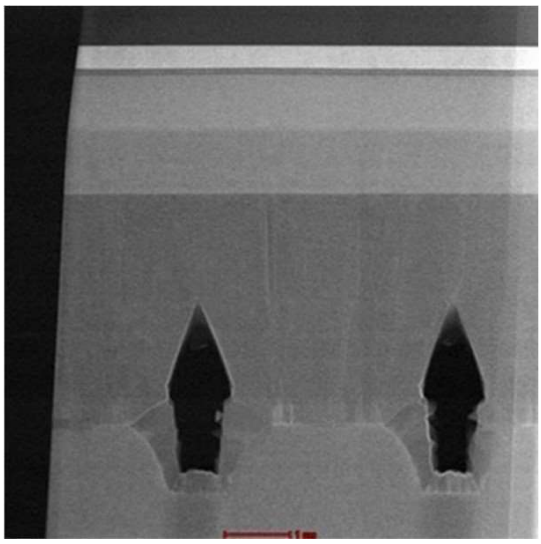
50. Below is a TEM image showing a cross section of a heterostructure

of the LED chip from the LTPL-G35UV275GC-E.



51. The heterostructure in the TEM image shows a substrate and a nucleation layer located on the substrate. The nucleation layer is formed ofa plurality of nucleation islands.

52. As shown in the magnified TEM image below, a cavity containing layer is formed of a semiconductor material, has a thickness greater than two monolayers, and a plurality of cavities are in the cavity containing layer. The plurality of cavities have a characteristic size of at least one nanometer and a characteristic separation of at least five nanometers.



53. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

54. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

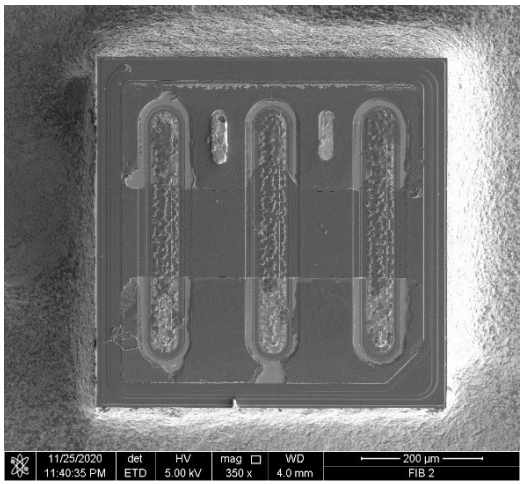
COUNT III

INFRINGEMENT OF THE '562 PATENT

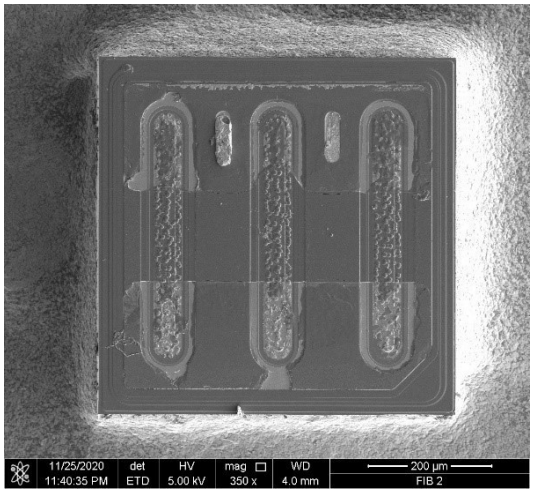
55. Lite-On has infringed and continues to infringe one or more claims of the '562 Patent, including but not limited to exemplary claim 1, pursuant to 35 U.S.C. § 271(a), at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

56. The LTPL-G35UV275GC-E UV LED includes an LED package,

which includes a light emitting diode chip. A Scanning Electron Microscope ("SEM") image of a chip from an LTPL-G35UV275GC-E UV LED is reproduced below.

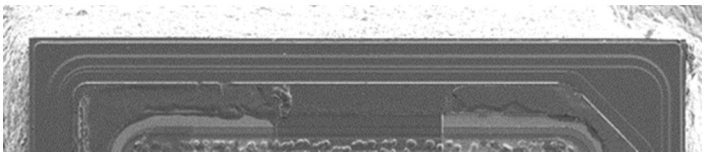


57. Two metallic contacts are deposited on the surface of the UV LED's semiconductor structure, as shown in the SEM image below. One of these contacts in the LTPL-G35UV275GC-E UV LED comprises at least two corners.

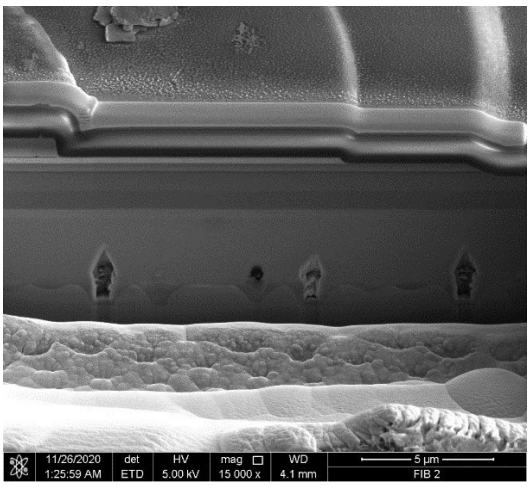


58. With respect to the semiconductor structure surface, these two corners have a substantially lateral direction along the surface of the semiconductor

structure. Along this lateral direction, the contact corners have a profiled shape. Specifically, instead of forming a sharp corner where the edges of the contact meet, the corner has a rounded profiled shape that provides a gradual transition between the two edges, as shown in the magnified SEM image of one of the contact corners below.



59. The contact corners also have depth perpendicular to the semiconductor structure surface. Along this perpendicular direction, the corners have an edge with a profiled shape perpendicular to the semiconductor surface. The perpendicular profiled shape of the contact corners provides a non-planar transition from the semiconductor structure surface to the top surface of the contact, as shown in the Focused Ion Beam ("FIB")-SEM image below.



60. Lite-On's infringement has caused and is continuing to cause

damage and irreparable injury to SETi. SETi will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

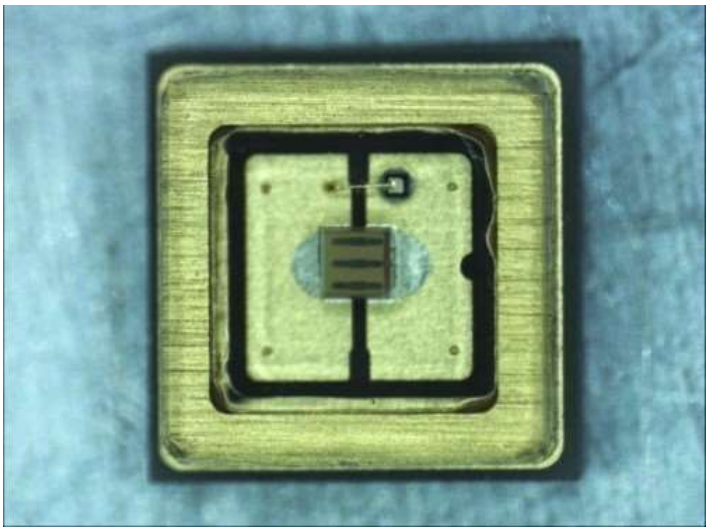
61. SETi is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT IV

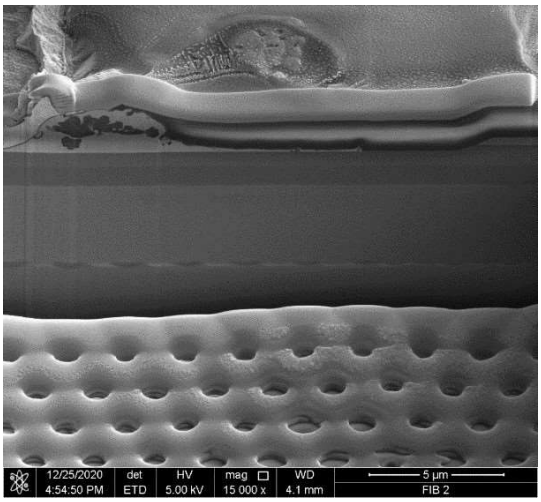
INFRINGEMENT OF THE '848 PATENT

62. Lite-On has infringed and continues to infringe one or more claims of the '848 Patent, including but not limited to exemplary claim 1, pursuant to 35 U.S.C. § 271(a), at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

63. The LTPL-G35UV275GC-E UV LED includes an optoelectronic device, which includes an LED chip. An optical microscope image of the top of the optoelectronic device from an LTPL-G35UV275GC-E UV LED is reproduced below.



64. Below is a SEM image taken after a hole was milled into the LED chip using a FIB.



65. The composite image above shows an n-type semiconductor layer having a surface, and a mesa located over a first portion of the surface of the n-type semiconductor layer, a first n-type metallic contact layer located over at least a portion of the n-type contact region in proximity of the mesa boundary and a second n-type metallic contact layer located over a second portion of the n-type

contact region. The n-type contact region is at least partially defined by the mesa boundary. The first n-type metallic contact layer forms an ohmic contact with the n-type semiconductor layer.

66. The above FIB-SEM image shows a second n-type metallic contact layer located over a second portion of the n-type contact region, and it is formed of a reflective metallic material distinct from a metallic material used to form the first n-type metallic contact layer.

67. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

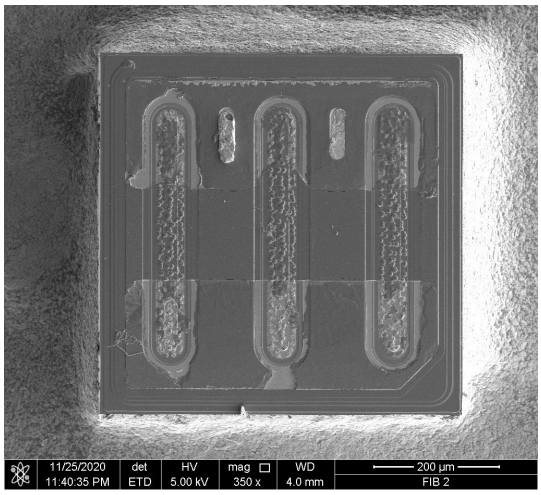
68. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT V

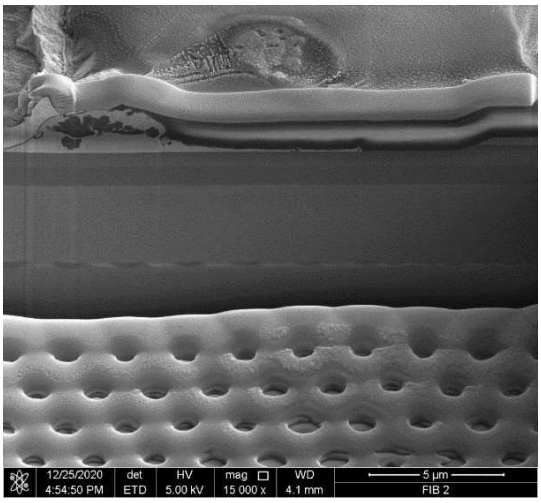
INFRINGEMENT OF THE '785 PATENT

69. Lite-On has infringed and continues to infringe one or more claims of the '785 Patent, including but not limited to exemplary claim 1, pursuant to 35 U.S.C. § 271(a) at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

70. The LTPL-G35UV275GC-E UV LED includes an optoelectronic device. A SEM image of an LED chip from an LTPL-G35UV275GC-E UV LED is reproduced below.



71. Below is a SEM image taken after a hole was milled into the LED chip using a FIB.



72. The composite image above shows an n-type semiconductor layer having a surface, and a mesa located over a first portion of the surface of the n-type semiconductor layer, a first n-type metallic contact layer located over at least a

portion of the n-type contact region in proximity of the mesa boundary and a second n-type metallic contact layer located over a second portion of the n-type contact region. The n-type contact region is at least partially defined by the mesa boundary. The first n-type metallic contact layer forms an ohmic contact with the n-type semiconductor layer.

73. The above FIB-SEM image shows a second n-type metallic contact layer located over a second portion of the n-type contact region, and it is formedof a reflective metallic material distinct from a metallic material used to form the first n-type metallic contact layer, and at least one-scattering element is arranged in the n-type semiconductor layer.

74. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

75. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

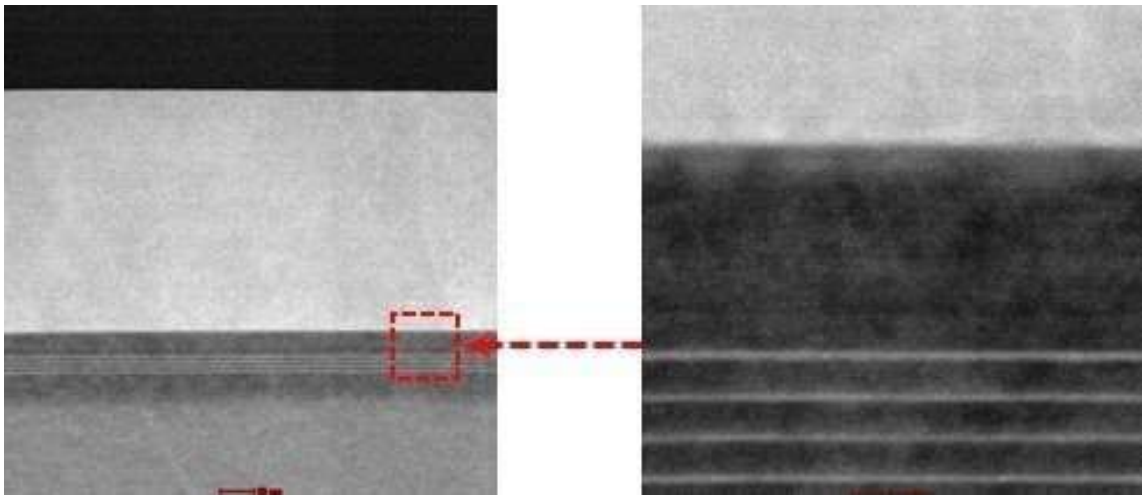
COUNT VI

INFRINGEMENT OF THE '496 PATENT

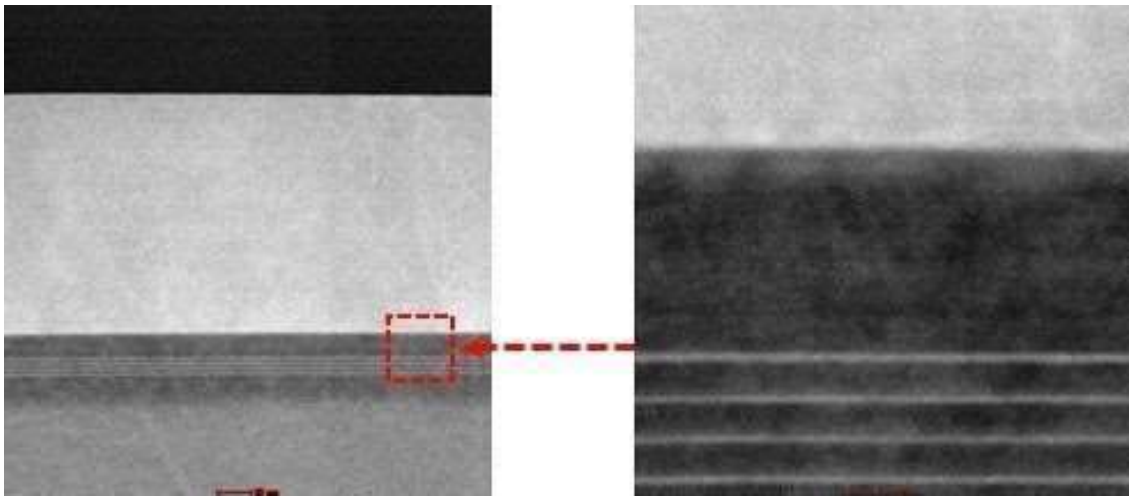
76. Lite-On has infringed and continues to infringe one or more claims of the '496 Patent, including but not limited to claim 1, pursuant to 35 U.S.C. § 271(a) at least by, without authority, making, using, offering to sell, and/or

selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

77. The LTPL-G35UV275GC-E infringes each element of exemplary claim 1 of the ’496 patent. The LTPL-G35UV275GC-E includes a UV LED chip, which contains a semiconductor heterostructure comprised of different layers. The TEM image below left shows a cross section of a UV LED chip from the LTPL-G35UV275GC-E. The stacked layers of the semiconductor heterostructure have different shades depending on their material composition. The heterostructure in the TEM image shows (1) a UV-transparent sapphire substrate as the bottom, base layer, (2) a buffer layer adjacent to the substrate, (3) a light generating structure (an active layer) near the top of the heterostructure having top and bottom sides (in the magnified TEM image), (4) an n-type contact semiconductor layer located on the bottom side of the active layer between the active layer and the buffer layer, and (5) a p-type contact semiconductor layer located on the top side of the active layer (in the magnified TEM image).



78. As shown in the TEM images below, the p-type contact semiconductor layer also includes an embedded partially relaxed sublayer, whichis darker because of the increased aluminum content. Below that sublayer, the p-type contact semiconductor layer includes a dislocation blocking structure above the active layer consisting of a lattice of alternating sublayers. The TEM image below right also shows that the dislocation blocking structure includes a graded composition that changes from the relatively light top side of the structure to the relatively dark bottom side.



79. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

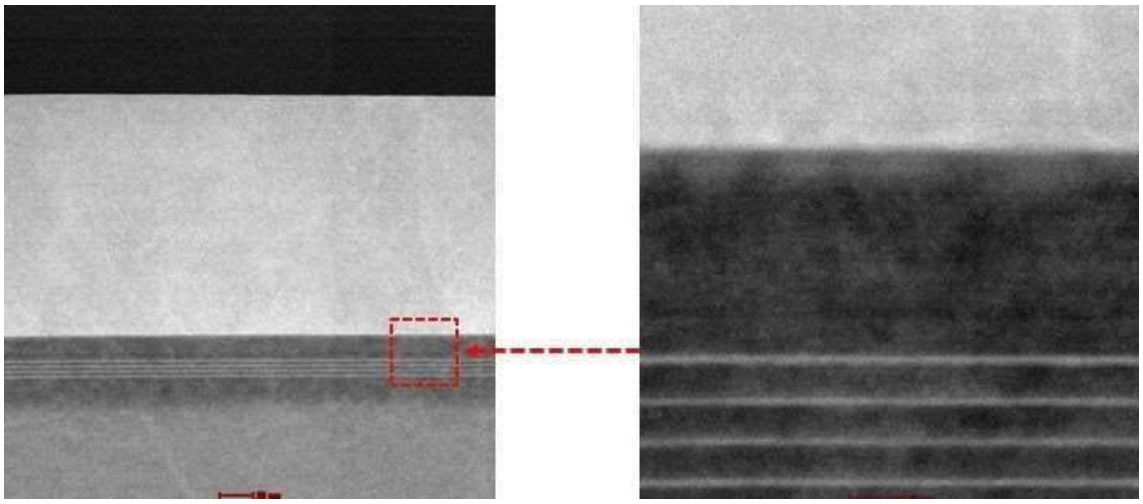
80. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT VII

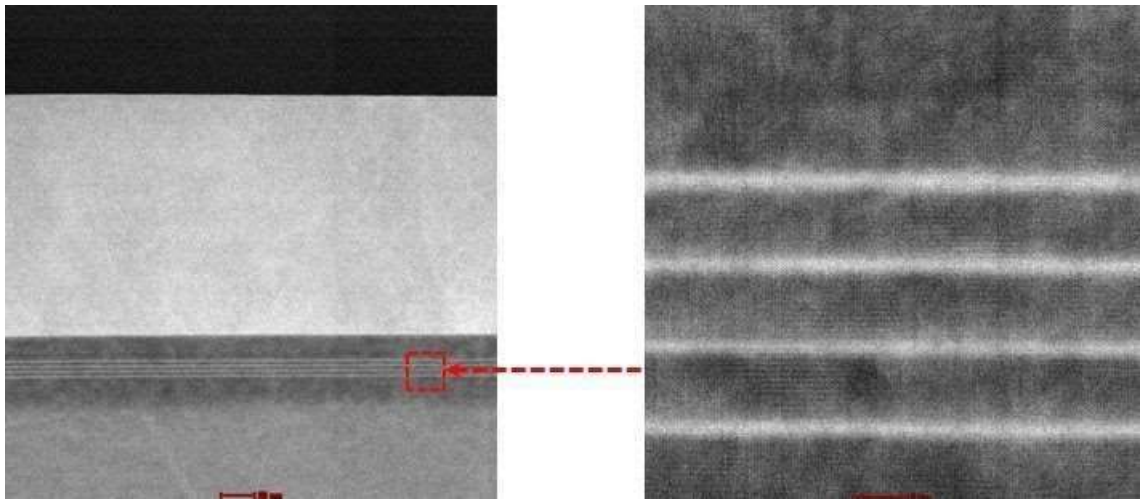
INFRINGEMENT OF THE '420 PATENT

81. Lite-On has infringed and continues to infringe one or more claims of the '420 Patent, including but not limited to exemplary claim 1, pursuant to 35 U.S.C. § 271(a) at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

82. The LTPL-G35UV275GC-E infringes each element of exemplary claim 1 of the '420 patent. The LTPL-G35UV275GC-E includes a UV LED chip that acts as an optoelectronic device. As shown in the TEM image below, the LTPL-G35UV275GC-E UV LED chip has an active layer which acts as a Short Period Superlattice ("SPSL") semiconductor layer.



83. The SPSL comprises barriers that are predominantly aluminum gallium nitride. The barriers' material composition varies laterally across the plane of the barriers, as shown in the TEM images below. The darker regions of the barriers represent a relatively high aluminum concentration; the lighter regions, a relatively low aluminum concentration. Thus, lateral inhomogeneities in the composition of the barriers forms the barriers' different regions.



84. The barriers' darker, high-aluminum regions necessarily have a

characteristic band gap (i.e., a "first characteristic band gap") that differs from the characteristic band gap of the lighter, low-aluminum regions (i.e., a "second characteristic band gap"). The high aluminum regions are more transparent to the UV-C light generated by the LTPL-G35UV275GC-E UV LED chip than the low-aluminum regions. Thus, the high-aluminum regions form a set of transparent regions in the barriers. These transparent regions are at least ten percent of the area of the lateral cross section of at least one of the SPSL barriers.

85. The barriers' low-aluminum regions are more conductive to current flow than the high-aluminum regions. Thus, the low-aluminum regions form aset of conductive regions in the barriers. These conductive regions are at least two percent of the area of the lateral cross section of at least one of the SPSL barriers.

86. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

87. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

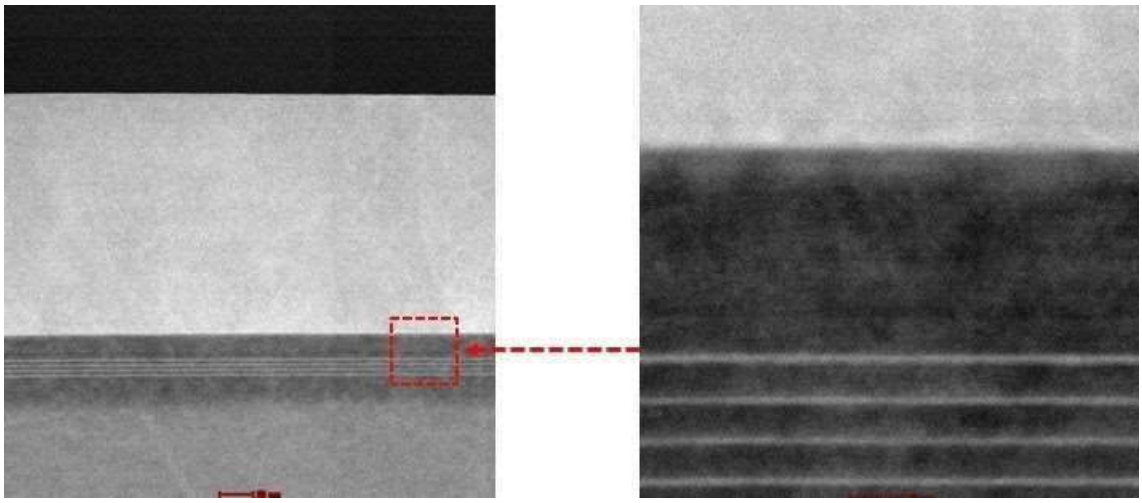
COUNT VIII

INFRINGEMENT OF THE '156 PATENT

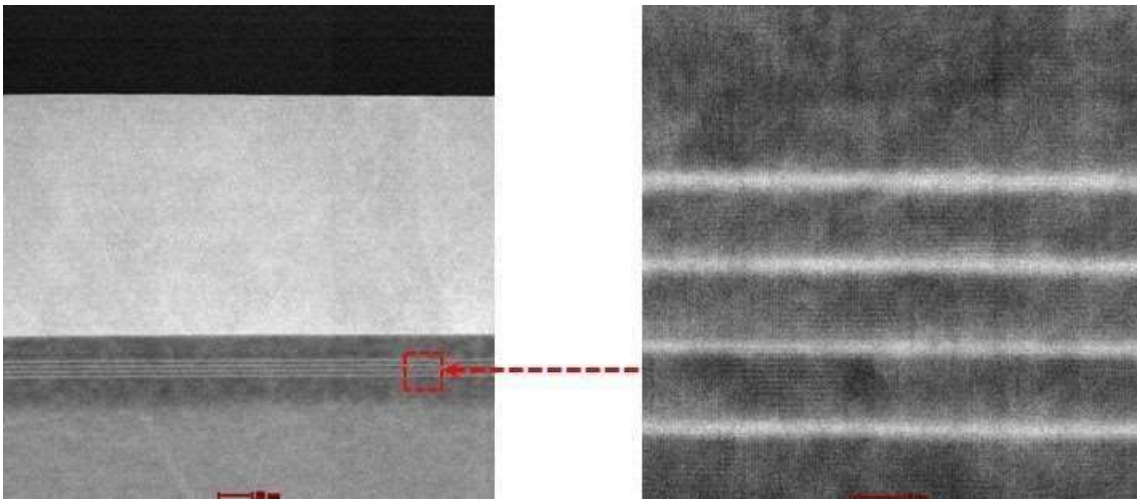
88. Lite-On has infringed and continues to infringe one or more claims of the '156 Patent, including but not limited to exemplary claim 1, pursuant to 35

U.S.C. § 271(a) at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

89. The LTPL-G35UV275GC-E infringes each element of exemplary claim 1 of the '420 patent. The LTPL-G35UV275GC-E includes a UV LED chip that acts as a device. As shown in the TEM image below, the LTPL-G35UV275GC-E UV LED chip has a set of group III nitride layers.



The TEM image shows an active layer, which comprises barriers that are predominantly aluminum gallium nitride. The barriers' material composition varies laterally across the plane of the barriers, as shown in the TEM images below. The darker regions of the barriers represent a relatively high aluminum concentration; the lighter regions, a relatively low aluminum concentration. Thus, lateral inhomogeneities in the composition of the barriers forms the barriers' different regions.



90. The barriers' darker, high-aluminum regions necessarily have a characteristic band gap (i.e., a "first characteristic band gap") that differs from the characteristic band gap of the lighter, low-aluminum regions (i.e., a "second characteristic band gap"). The high aluminum regions are more transparent to the UV-C light generated by the LTPL-G35UV275GC-E UV LED chip than the low-aluminum regions. Thus, the high-aluminum regions form a set of transparent regions in the barriers. These transparent regions are at least ten percent of the area of the lateral cross section of at least one of the barriers.

91. The barriers' low-aluminum regions are more conductive to current flow than the high-aluminum regions. Thus, the low-aluminum regions form aset of conductive regions in the barriers. These conductive regions are at least two percent of the area of the lateral cross section of at least one of the barriers. In aluminum nitride molar fraction in the set of transparent regions in at least one of the barriers is higher than an aluminum nitride molar fraction in the set of

conductive regions therein.

92. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

93. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

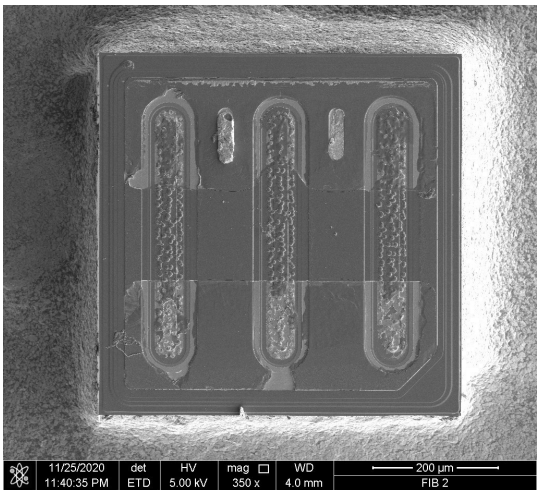
94. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

COUNT IX

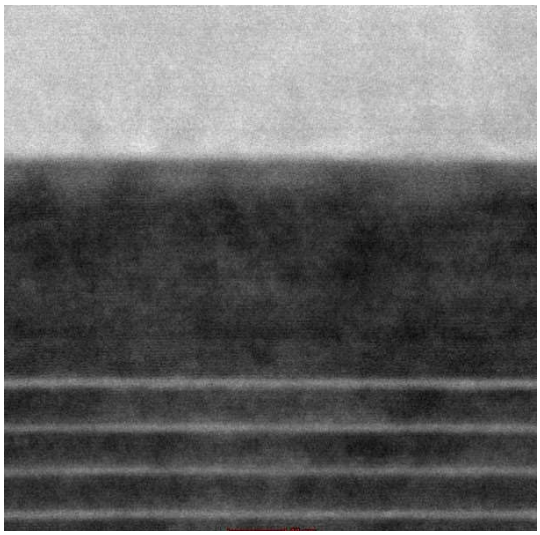
INFRINGEMENT OF THE '117 PATENT

95. Lite-On has infringed and continues to infringe one or more claims of the '117 Patent, including but not limited to exemplary claim 1, pursuant to 35 U.S.C. § 271(a), at least by, without authority, making, using, offering to sell, and/or selling the LTPL-G35UV275GC-E UV LED within the United States or importing the LTPL-G35UV275GC-E UV LED into the United States.

96. The LTPL-G35UV275GC-E UV LED includes a light emitting diode. A scanning electron microscope image of a chip from an LTPL-G35UV275GC-E UV LED is reproduced below. The image shows a metallic contact.



97. A TEM image depicting the cross section of the epitaxial layers of the LED chip from the LTPL-G35UV275GC-E UV LED shows a semiconductor heterostructure.



98. As shown in the TEM images above, the semiconductor heterostructure includes an active region, and a group III nitride semiconductor layer located between the active region, and the semiconductor layer including a plurality of inhomogeneous regions.

99. The TEM image above shows a first and second level of the semiconductor layer. The darker, high-aluminum regions has a plurality of inhomogeneous regions arranged within multiple levels of the semiconductor layer along a height direction of the semiconductor layer, the high-aluminum regions form a set of transparent regions.

100. As shown in the TEM image above, some of the inhomogeneous regions in a first level of the semiconductor layer are vertically offset from inhomogeneous regions in a second level of the semiconductor layer. Each of the inhomogeneous regions having a set of attributes differing from a group III nitride material forming the semiconductor layer.

101. Lite-On's infringement has caused and is continuing to cause damage and irreparable injury to Plaintiff. Plaintiff will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court, as a remedy at law alone would be inadequate.

102. Plaintiff is entitled to injunctive relief and damages in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

WILLFULNESS

103. Upon information and belief, defendants became aware of the existence of the patents in suit no later than on or about January 13, 2021 when plaintiff Sensor Electronic Technology, Inc. filed suit against Mouser Electronics

based on allegations of infringement directed to the LTPL-G35UV275GC-E UV LED product.

104. Upon information and belief, since becoming aware of the suit against Mouser, defendants have continued to perform acts of infringement including selling and offering for sale infringing products. Upon information and belief, the continuing infringement has been performed with knowledge and intent.

105. For at least the foregoing reasons, Plaintiff is entitled to enhancement of damages up to three times its actual damages amount, in accordance with 35 U.S.C. § 284.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court enter judgment in its favor and against defendants as follows:

A. A declaration that defendants have infringed the ’906 Patent, ’952 Patent, ’562 Patent, ’848 Patent, ’785 Patent, ’496 Patent, ’420 Patent, ’156 Patent, and ’117 Patent under 35 U.S.C. § 271, and a final judgment incorporating the same;

B. A permanent injunction, enjoining defendants and their officers, agents, servants, employees, representatives, successors, and assigns, and all others acting in concert or participation with them from continued infringement under 35 U.S.C. § 271 of the ’906 Patent, ’952 Patent, ’562 Patent, ’848 Patent, ’785 Patent,

'496 Patent, '420 Patent, '156 Patent, and '117 Patent;

C. An award of damages adequate to compensate Plaintiff for infringement the '906 Patent, '952 Patent, '562 Patent, '848 Patent, '785 Patent, '496 Patent, '420 Patent, '156 Patent, and '117 Patent, together with prejudgment and post-judgment interest and costs pursuant to 35 U.S.C. § 284;

D. Enhancement of damages for infringement up to treble the amount of actual damages pursuant to 35 U.S.C. § 284;

E. An accounting of all infringing sales and other infringing acts by Lite-On, and an order compelling an accounting for infringing acts not presented at trial and an award by the Court of additional damages for such acts; and

F. Any other relief to which Plaintiff is entitled or that the Court seems just and proper.

JURY DEMAND

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiff hereby demands trial by jury of all issues so triable

DATED: May 13, 2021

Respectfully submitted,

/s/ Kevin Kudlac

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