

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

MOLECULAR REBAR DESIGN,
LLC, AND BLACK DIAMOND
STRUCTURES, LLC,

Plaintiffs,

v.

SAMSUNG ELECTRONICS CO., LTD,
AND SAMSUNG ELECTRONICS
AMERICA, INC.,

Defendants.

Case No. _____

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

This is an action for patent infringement in which Plaintiffs Molecular Rebar Design, LLC (“MRD”) and Black Diamond Structures, LLC (“BDS”; together, “MRD/BDS”) make the following allegations against Samsung Electronics Co., Ltd. (“SEC”) and Samsung Electronics America, Inc. (“SEA”) (together, “Defendants”).

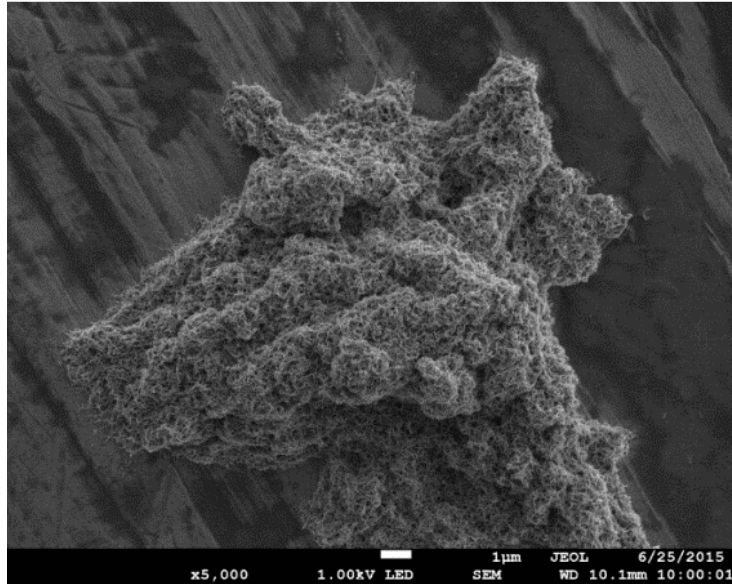
BACKGROUND

1. Formed over a decade ago in Austin, Texas, Plaintiff Molecular Rebar Design, LLC (“MRD”), is one of the world’s leading researchers in battery- and nanotechnology. The company has been granted over 35 patents in the United States and over 150 patents abroad.

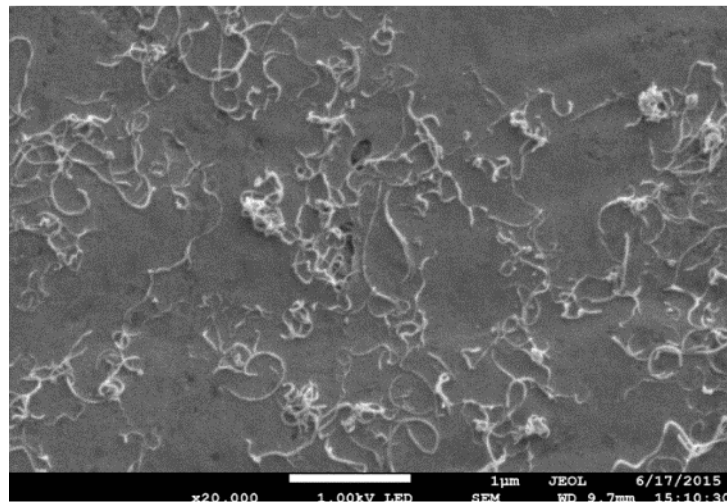
2. This case concerns what are known as detangled carbon nanotubes (“CNTs”), a proprietary technology created and commercialized by MRD to improve the performance of the batteries used in nearly every modern consumer electronic product, ranging from cell phones to automobiles. MRD’s technology works by disentangling CNTs—a core component of batteries—

thereby increasing their dispersibility. MRD's CNT materials are the world's first CNTs that are substantially disentangled, unlike typical CNTs, which are clumped and clustered.

3. Below is an example of clumped, clustered, and non-discrete CNTs:



4. By contrast, below is an example of disaggregated and de-bundled CNTs (also known as exfoliated or discrete CNTs):



5. MRD's subsidiary, Black Diamond Structures, LLC ("BDS"), was formed in 2014. BDS partners with manufacturers to create the next generation of batteries, based on MRD's CNT technology.

6. MRD is the owner of several patents that claim the underlying materials, processes, technologies, and other related information integral to its CNT technology. Those patents include U.S. Patent Nos. 8,808,909; 8,968,924; 10,153,483; 9,636,649; and 10,608,282 (together, the “Asserted Patents”).

PARTIES

7. Plaintiff MRD is a Delaware limited liability company with a principal place of business at 13477 Fitzhugh Road, Austin, TX 78736.

8. Plaintiff BDS is a Delaware limited liability company with a principal place of business at 12310 Trail Driver, Austin, TX 78737. BDS is the exclusive licensee of any and all patent applications and issued patents owned by MRD that have claims to any idea or invention related to the CNT Technology, methods of making the CNT Technology, and uses of the CNT Technology. BDS’s license is limited, however, to applications and uses related to electrical energy storage, including without limitation anodes, cathodes, electrolytes, separators for batteries, capacitors and other storage devices.

9. On information and belief, Defendant Samsung Electronics Co., Ltd. (“SEC”), is a Korean corporation with its principal place of business at 416, Maetan 3-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 443-742, South Korea. SEC can be served with process in accordance with the Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents, in accordance with Fed. R. Civ. P. 4(f).

10. On information and belief, Defendant Samsung Electronics America, Inc. (“SEA”), is a New York corporation. SEA maintains a regular and established place of business in this District at 6625 Excellence Way, Plano, TX 75023.

11. SEC and SEA are referred to herein as “Samsung” or “Defendants.”

JURISDICTION AND VENUE

12. This action arises under the patent laws of the United States, Title 35 of the United States Code.

13. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

14. This Court has personal jurisdiction over Samsung because, directly or through intermediaries, it has committed acts within Texas giving rise to this action and/or has established minimum contacts with Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

15. Specifically, SEA maintains a regular and established place of business in this District at 6625 Excellence Way, Plano, TX 75023.

16. Further, during the infringing time period, Samsung has placed one or more infringing products into the stream of commerce via an established distribution channel with the knowledge and/or understanding that such products were being offered for sale, and/or sold to customers, and/or utilized in Texas. For example, Samsung has sold and continues to sell in Texas various “Galaxy” smartphones, including the Samsung Galaxy S21 Ultra, the Samsung Galaxy S22 Ultra, the Samsung Galaxy S9, and the Samsung Galaxy S10+. In addition, Samsung maintains multiple retail stores throughout the State of Texas. *See* Samsung Experience Stores, <https://www.samsung.com/us/samsung-experience-store/locations/> (last visited February 13, 2024). Samsung also sends out “Rovers”—large Samsung branded vans—“across the Lone Star State, meeting Texans where they are and letting them test drive the latest Samsung devices,” including Galaxy smartphones. *See* Samsung, *Rovers Roll Out: Snag Some Swag*, <https://www.samsung.com/us/galaxytexas/galaxy-rover-events> (last visited February 15, 2024).

Unsurprisingly, Samsung has proclaimed “We’ve got roots in Texas.” *See Samsung, Let’s Hear it for Texas*, <https://www.samsung.com/us/galaxytexas/cheer-for-texas> (last visited February 15, 2024).

17. Because this Court has personal jurisdiction over SEC—a foreign corporation—venue is proper pursuant to 28 U.S.C. § 1391(c).

18. Venue is also proper in this district pursuant to 28 U.S.C. §§ 1391 and 1400(b). Specifically, SEA maintains a regular and established place of business in this District at 6625 Excellence Way, Plano, TX 75023 from which Samsung does business in this District, has committed acts of infringement in this District, and continues to commit acts of infringement in this District, entitling MRD and/or BDS to relief.

THE ASSERTED PATENTS

19. This lawsuit asserts causes of action for infringement of U.S. Patent Nos. 8,808,909; 8,968,924; 10,153,483; 9,636,649; and 10,608,282 (together, the “Asserted Patents”).

A. U.S. Patent No. 8,808,909 B2

20. On August 19, 2014, the United States Patent and Trademark Office (“PTO”) issued U.S. Patent No. 8,808,909 B2 (the “’909 Patent”), which is entitled “Lithium Ion Batteries Using Discrete Carbon Nanotubes, Methods for Production Thereof, and Products Obtained Therefrom.”

21. MRD owns all substantial rights to the ’909 Patent, except that MRD has granted BDS an exclusive license to the ’909 Patent in the energy storage field, including applications and uses related to electrical energy storage, including without limitation anodes, cathodes, electrolytes, separators for batteries, capacitors and other storage devices.

B. U.S. Patent No. 8,968,924 B2

22. On March 3, 2015, the PTO issued U.S. Patent No. 8,968,924 B2 (the “’924 Patent”), which is entitled “Lithium Ion Batteries Using Discrete Carbon Nanotubes, Methods for Production Thereof, and Products Obtained Therefrom.”

23. MRD owns all substantial rights to the ’924 Patent, except that MRD has granted BDS an exclusive license to the ’924 Patent in the energy storage field, including applications and uses related to electrical energy storage, including without limitation anodes, cathodes, electrolytes, separators for batteries, capacitors and other storage devices.

C. U.S. Patent No. 10,153,483 B2

24. On December 11, 2018, the PTO issued U.S. Patent No. 10,153,483 B2 (the “’483 Patent”), entitled “Lithium Ion Batteries Using Discrete Carbon Nanotubes, Methods for Production Thereof, and Products Obtained Therefrom.”

25. MRD owns all substantial rights to the ’483 Patent, except that MRD has granted BDS an exclusive license to the ’483 Patent in the energy storage field, including applications and uses related to electrical energy storage, including without limitation anodes, cathodes, electrolytes, separators for batteries, capacitors and other storage devices.

D. U.S. Patent No. 9,636,649 B2

26. On May 2, 2017, the PTO issued U.S. Patent No. 9,636,649 B2 (the “’649 Patent”), which is entitled “Dispersions Comprising Discrete Carbon Nanotube Fibers.”

27. MRD owns all substantial rights to the ’282 Patent, except that MRD has granted BDS an exclusive license to the ’282 Patent in the energy storage field, including applications and uses related to electrical energy storage, including without limitation anodes, cathodes, electrolytes, separators for batteries, capacitors and other storage devices.

E. U.S. Patent No. 10,608,282 B2

28. On March 31, 2020, the PTO issued U.S. Patent No. 10,608,282 B2 (the “’282 Patent”), which is entitled “Binders, Electrolytes and Separator Films for Energy Storage and Collective Devices Using Discrete Carbon Nanotubes.”

29. MRD owns all substantial rights to the ’282 Patent, including the right to sue and recover damages for all infringement thereof, except that BDS has been granted an exclusive license to the ’282 Patent in the energy storage field, meaning all applications and uses related to electrical energy storage, including without limitation anodes, cathodes, electrolytes, separators for batteries, capacitors and other storage devices.

COUNT 1 – INFRINGEMENT OF U.S. PATENT NO. 8,808,909 B2

30. MRD repeats and incorporates by reference each preceding paragraph as if fully set forth herein, and further states:

31. Defendants have directly infringed, and continue to directly infringe, the ’909 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, without authorization, one or more products that practice various claims of the ’909 Patent, literally or under the doctrine of equivalents (hereinafter the “’909 Accused Products”). At a minimum, such ’909 Accused Products include all devices that infringe the claims of the ’909 Patent. This includes products like the Samsung Galaxy S9, Samsung Galaxy S10+, Samsung Galaxy S21 Ultra, and Samsung Galaxy S22 Ultra.

32. As detailed below, the ’909 Accused Products are configured by Samsung to practice every element of at least Claim 1 of the ’909 Patent literally or under the doctrine of

equivalents.¹ Further, the identified components and functionality are representative of the components and functionality present in all '909 Accused Products.

33. Claim 1 of the '909 Patent recites: “[a] composition useful for lithium ion batteries comprising: discrete carbon nanotubes having crystals or layers of lithium ion active material attached to their surface, wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500 and oxidation levels from 1% to 15% by weight of the carbon nanotube.”

34. Each of the '909 Accused Products contains a composition useful for lithium-ion batteries. For example:

Samsung Galaxy S9



¹ This description is illustrative and is not intended to be an exhaustive or limiting explanation of every manner in which each '909 Accused Product infringes the '909 Patent.

Samsung Galaxy S10+



Samsung Galaxy S21U

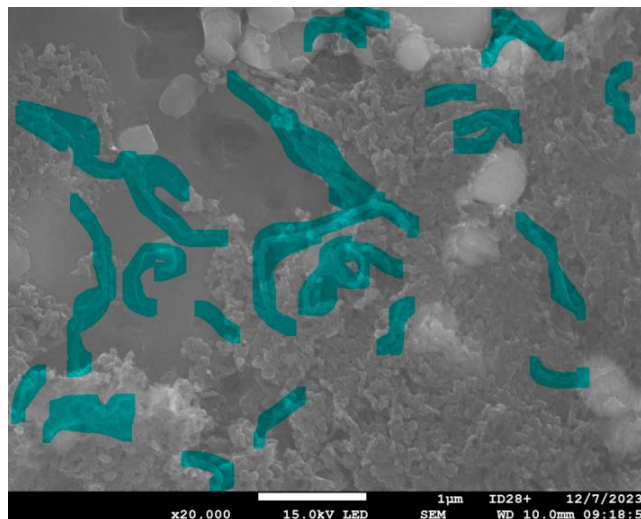


Samsung Galaxy S22U

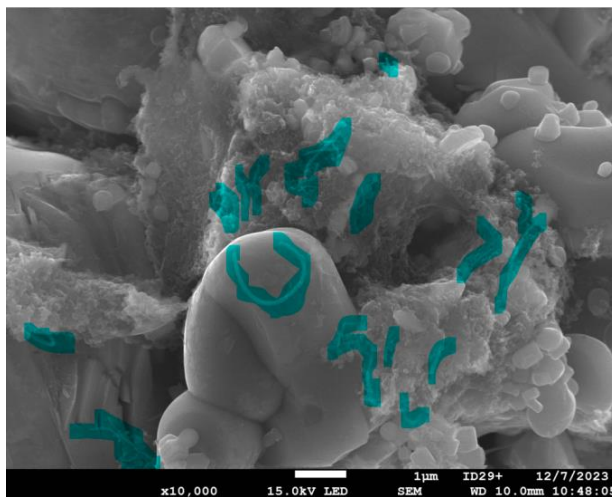


35. The composition in each of the '909 Accused Products comprises discrete carbon nanotubes having crystals or layers of lithium ion active material attached to their surface. The presence of such discrete carbon nanotubes having crystals or layers of lithium ion active material attached to their surface is shown below in blue highlighting, from scanning electron microscope (“SEM”) images of example '909 Accused Products:

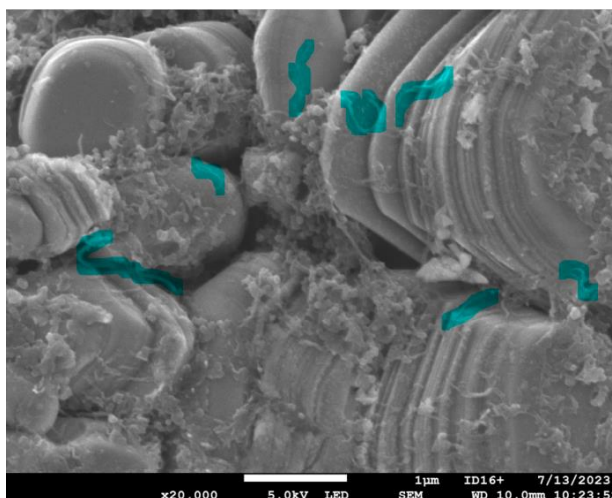
Samsung Galaxy S9



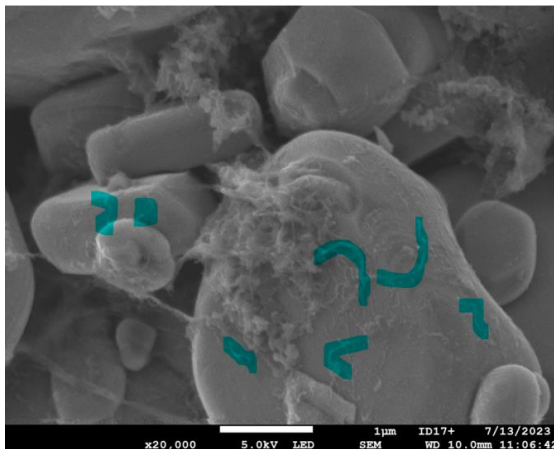
Samsung Galaxy S10+



Samsung Galaxy S21U

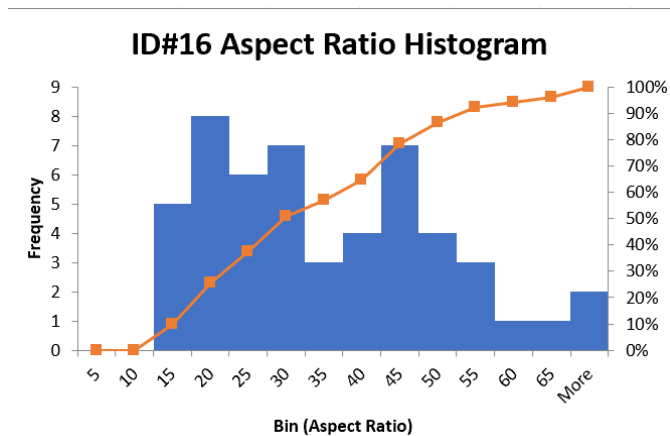


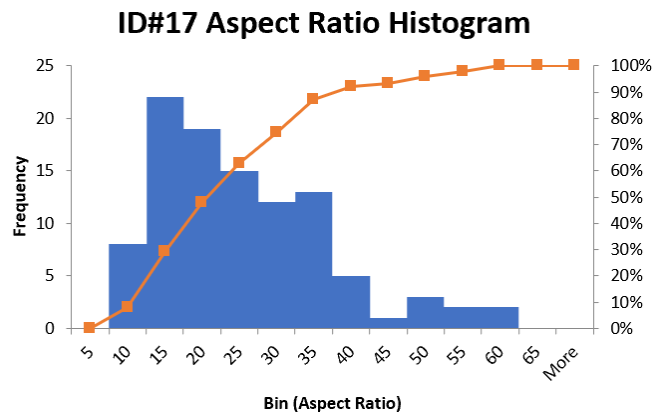
Samsung Galaxy S22U



36. The composition in each of the '909 Accused Products comprises discrete carbon nanotubes having crystals or layers of lithium ion active material attached to their surface, wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500, as indicated in the graphical illustrations of example '909 Accused Products below:

Samsung Galaxy S21U



Samsung Galaxy S22U

37. The composition in each of the '909 Accused Products comprises discrete carbon nanotubes having crystals or layers of lithium ion active material attached to their surface, wherein the discrete carbon nanotubes have oxidation levels from 1% to 15% by weight of the carbon nanotube.

38. Samsung thus directly infringed, and continues to directly infringe, each element of Claim 1 of the '909 Patent by selling and offering to sell in the United States, and by importing into the United States, without authorization, '909 Accused Products.

39. Samsung also actively induced, and will continue to actively induce after the filing of this complaint, the direct infringement of the '909 Patent by distributors, customers, and other end users of the '909 Accused Products by distributing the '909 Accused Products knowing that they will be further sold, offered for sale, and/or used in the United States, including in Texas. For instance, '909 Accused Products are distributed throughout Texas by third parties like AT&T, US Cellular, and Verizon. *See, e.g., ATT, Get Samsung Galaxy S22 in Ft. Worth, <https://www.att.com/stores/texas/ft-worth/samsung-galaxy-s22> (last visited February 15, 2024); USCellular, *Where to Buy Samsung Phones in Vernon, TX,**

<https://local.uscellular.com/texas/vernon/samsung> (last visited February 15, 2024); *Verizon, Samsung Galaxy S22 at Cellular Sales San Antonio W IH 10*, <https://www.verizon.com/stores/devices/texas/san-antonio/cellular-sales-san-antonio-w-ih-10-a00000327782/smartphones/samsung-galaxy-s22/?sku=sku5540026&productid=dev17760005> (last visited February 15, 2024).

40. In addition, Samsung's ongoing infringement of the '909 Patent is willful. As detailed herein, Samsung now has notice of the '909 Patent and its infringement of it. Nevertheless, without authorization, Samsung deliberately continues to infringe the '909 Patent and also encourages others to infringe the '909 Patent, including by selling and/or using '909 Accused Products in the United States.

41. Samsung's acts of infringement have caused damage to MRD and BDS, and MRD and BDS are entitled to recover from Defendant the damages they have sustained as a result of such wrongful acts in an amount to be proven at trial.

COUNT 2 – INFRINGEMENT OF U.S. PATENT NO. US 8,968,924 B2

42. MRD repeats and incorporates by reference each preceding paragraph as if fully set forth herein, and further states:

43. Samsung has directly infringed, and continue to directly infringe, the '924 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, without authorization, one or more products that practice various claims of the '924 Patent, literally or under the doctrine of equivalents (hereinafter the "'924 Accused Products"). At a minimum, such '924 Accused Products include all devices that infringe the claims of the '924 Patent. This includes products like the Samsung Galaxy S9, Samsung Galaxy S10+, Samsung Galaxy S21 Ultra, and Samsung Galaxy S22 Ultra.

44. As detailed below, the '924 Accused Products are configured by Samsung to practice every element of at least Claim 1 of the '924 Patent literally or under the doctrine of equivalents.² Further, the identified components and functionality are representative of the components and functionality present in all '924 Accused Products.

45. Claim 1 of the '924 Patent recites: “[a] composition used in lithium ion batteries comprising: discrete carbon nanotubes having ion active material attached to their surface, wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500 and oxidation levels from 1 % to 15% by weight of the carbon nanotube, and wherein the ion active material comprise a lithium metal salt and an element selected from the group consisting of: iron, manganese, cobalt, copper, nickel, vanadium, titanium, and mixtures thereof.”

46. Each of the '924 Accused Products contains a composition useful for lithium-ion batteries. For example:

Samsung Galaxy S9



² This description is illustrative and is not intended to be an exhaustive or limiting explanation of every manner in which each '924 Accused Product infringes the '924 Patent.

Samsung Galaxy S10+



Samsung Galaxy S21U

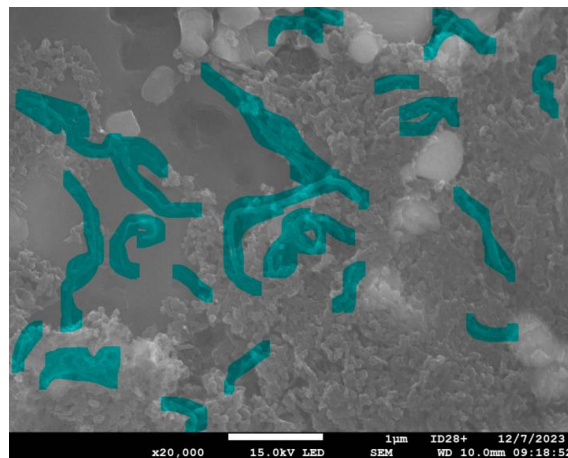


Samsung Galaxy S22U

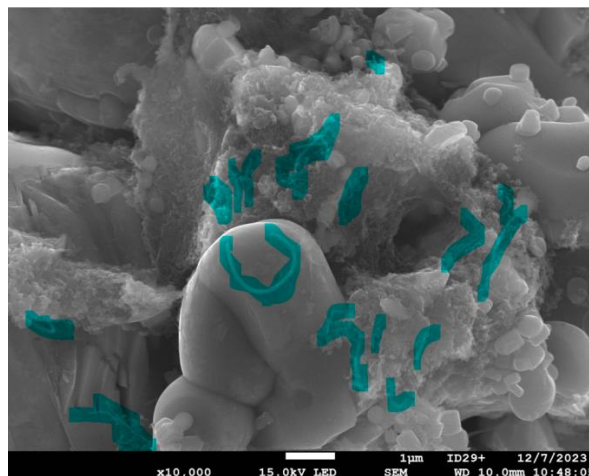


47. The composition in each of the '924 Accused Products comprises discrete carbon nanotubes having ion active material attached to their surface. The presence of such discrete carbon nanotubes having ion active material attached to their surface is shown below in blue highlighting from SEM images of example '924 Accused Products:

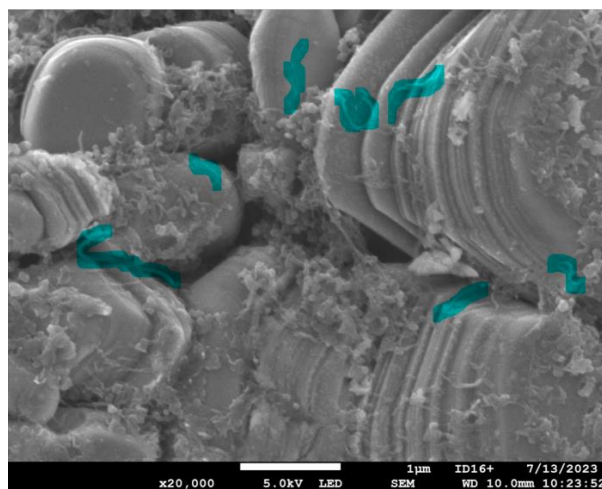
Samsung Galaxy S9



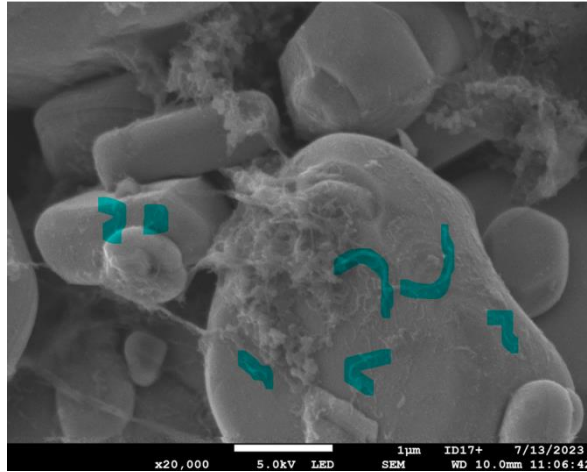
Samsung Galaxy S10+



Samsung Galaxy S21U

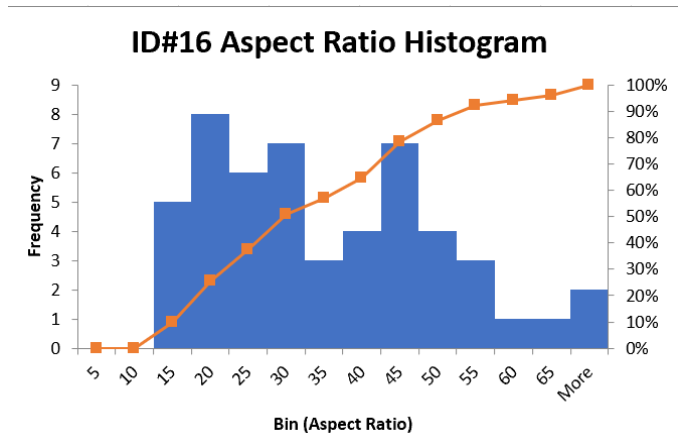


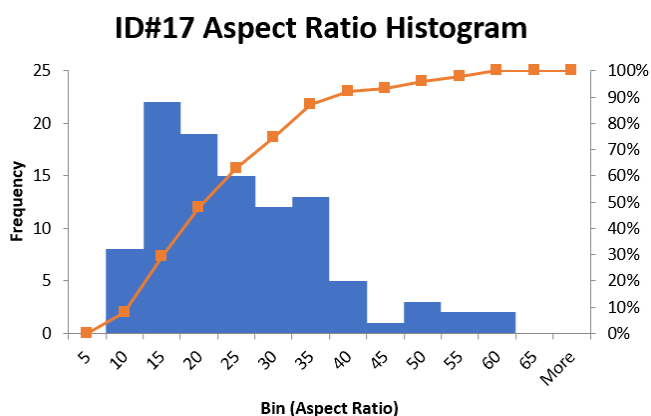
Samsung Galaxy S22U



48. The composition in each of the '924 Accused Products comprises discrete carbon nanotubes having ion active material attached to their surface, wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500, as illustrated in the graphical images below of example '924 Accused Products:

Samsung Galaxy S21U

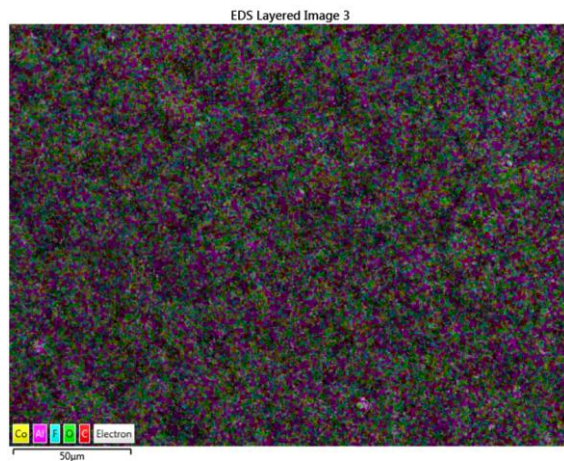


Samsung Galaxy S22U

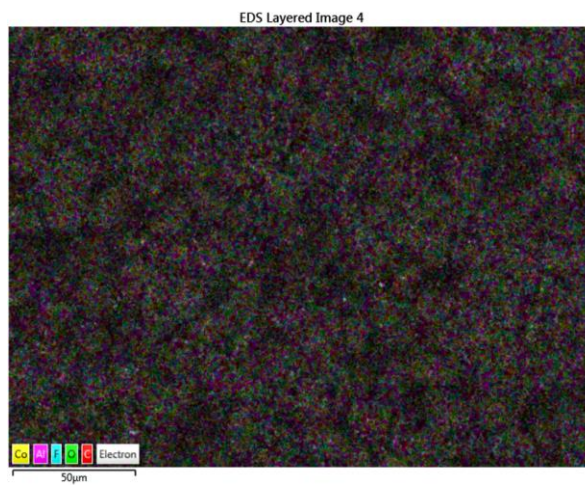
49. The composition in each of the '924 Accused Products comprises discrete carbon nanotubes having ion active material attached to their surface, wherein the discrete carbon nanotubes have oxidation levels from 1 % to 15% by weight of the carbon nanotube.

50. The composition in each of the '924 Accused Products comprises discrete carbon nanotubes having crystals or layers of lithium ion active material attached to their surface, wherein the ion active material comprise a lithium metal salt and an element selected from the group consisting of: iron, manganese, cobalt, copper, nickel, vanadium, titanium, and mixtures thereof. The presence of discrete carbon nanotubes having crystals or layers of lithium ion active material attached to their surface, wherein the ion active material comprise a lithium metal salt and an element selected from the group consisting of: iron, manganese, cobalt, copper, nickel, vanadium, titanium, and mixtures thereof is shown below through energy dispersive spectroscopy (“EDS”) imaging of example '924 Accused Products:

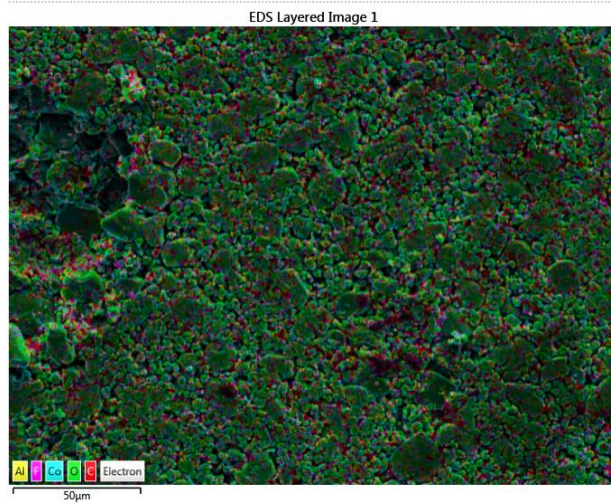
Samsung Galaxy S9



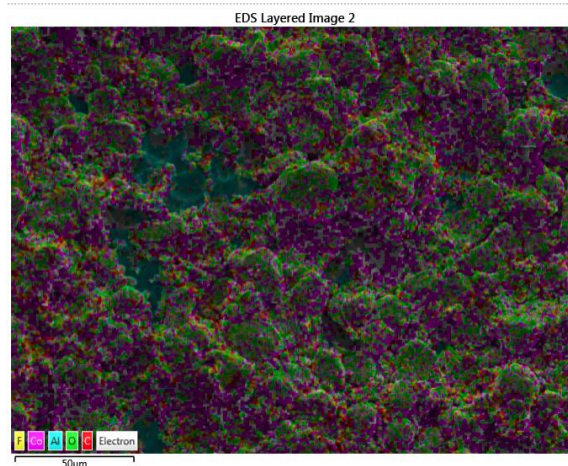
Samsung Galaxy S10+



Samsung Galaxy S21U



Samsung Galaxy S22U



51. Samsung thus directly infringed, and continues to directly infringe, each element of Claim 1 of the '924 Patent by selling and offering to sell in the United States, and by importing into the United States, without authorization, '924 Accused Products.

52. Samsung also actively induced, and will continue to actively induce after the filing of this complaint, the direct infringement of the '924 Patent by distributors, customers, and other

end users of the '924 Accused Products by distributing the '924 Accused Products knowing that they will be further sold, offered for sale, and/or used in the United States. For instance, '924 Accused Products are distributed throughout Texas by third parties like AT&T, US Cellular, and Verizon. *See, e.g., ATT, Get Samsung Galaxy S22 in Ft. Worth*, <https://www.att.com/stores/texas/ft-worth/samsung-galaxy-s22> (last visited February 15, 2024); USCellular, *Where to Buy Samsung Phones in Vernon, TX*, <https://local.uscellular.com/texas/vernon/samsung> (last visited February 15, 2024); *Verizon, Samsung Galaxy S22 at Cellular Sales San Antonio W IH 10*, <https://www.verizon.com/stores/devices/texas/san-antonio/cellular-sales-san-antonio-w-ih-10-a00000327782/smartphones/samsung-galaxy-s22/?sku=sku5540026&productid=dev17760005> (last visited February 15, 2024).

53. In addition, Samsung's ongoing infringement of the '924 Patent is willful. As detailed herein, Samsung now has notice of the '924 Patent and its infringement of it. Nevertheless, without authorization, Samsung deliberately continues to infringe the '924 Patent and also encourages others to infringe the '924 Patent, including by selling and/or using '924 Accused Products in the United States.

54. Samsung's acts of infringement have caused damage to MRD and BDS, and MRD and BDS are entitled to recover from Defendant the damages they have sustained as a result of such wrongful acts in an amount to be proven at trial.

COUNT 3 – INFRINGEMENT OF U.S. PATENT NO. 10,153,483

55. MRD repeats and incorporates by reference each preceding paragraph as if fully set forth herein and further states:

56. Samsung has directly infringed, and continue to directly infringe, the '483 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, without authorization, one or more products that practice various claims of the '483 Patent, literally or under the doctrine of equivalents (hereinafter the "'483 Accused Products"). At a minimum, such '483 Accused Products include all devices that infringe the claims of the '483 Patent. This includes products like the Samsung Galaxy S9, Samsung Galaxy S10+, Samsung Galaxy S21 Ultra, and Samsung Galaxy S22 Ultra.

57. As detailed below, the '483 Accused Products are configured by Samsung to practice every element of at least Claim 1 of the '483 Patent literally or under the doctrine of equivalents.³ Further, the identified components and functionality are representative of the components and functionality present in all '483 Accused Products.

58. Claim 1 of the '483 Patent recites: “[a] composition useful for lithium ion batteries comprising: discrete, non-agglomerated, and exfoliated carbon nanotubes having a surface, and mixtures of ion active materials comprising migratable ions said materials comprising crystals or layers of lithium ion active material, wherein a ratio of lithium ion to other total ions in the ion active materials is at least 2:1 to 25:1, and wherein the discrete carbon nanotubes have crystals or layers of lithium ion active material ionically attached to their surface and wherein the discrete carbon nanotubes comprise oxidized species selected from the group consisting of carboxylic,

³ This description is illustrative and is not intended to be an exhaustive or limiting explanation of every manner in which each '483 Accused Product infringes the '483 Patent.

ketone, or hydroxyl functionalities, and wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500 and oxidation levels from 1 % to 15% by weight of the carbon nanotube.”

59. Each of the '483 Accused Products contains a composition useful for lithium-ion batteries. For example:

Samsung Galaxy S9



Samsung Galaxy S10+



Samsung Galaxy S21U

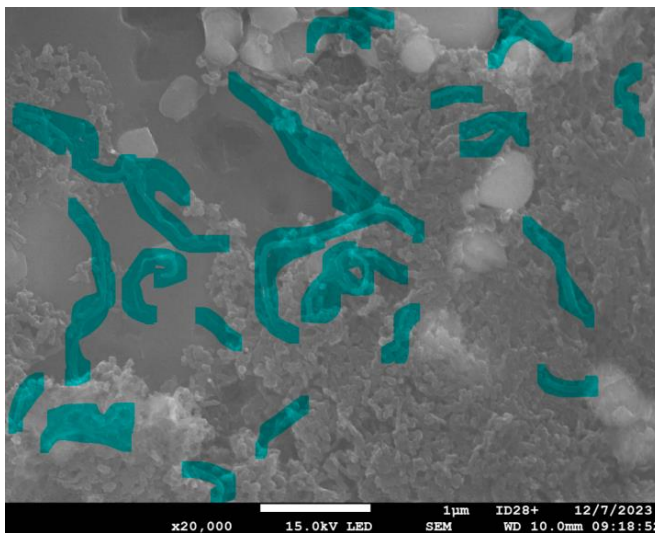


Samsung Galaxy S22U

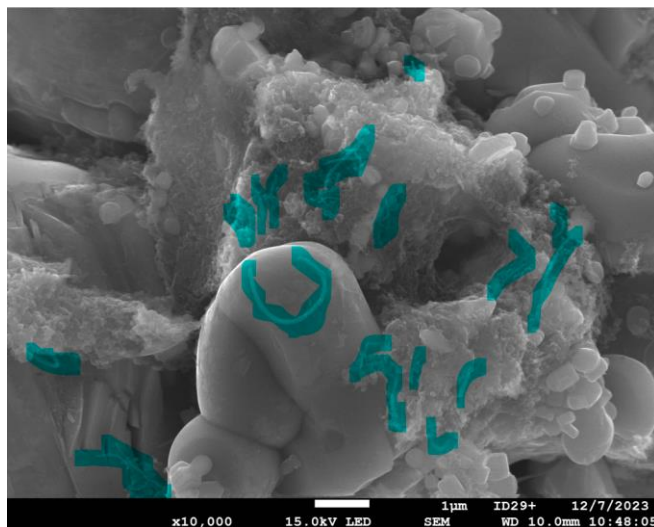


60. The composition in each of the '483 Accused Products comprises discrete, non-agglomerated, and exfoliated carbon nanotubes having a surface. The presence of such discrete, non-agglomerated, and exfoliated carbon nanotubes having a surface is shown below in blue highlighting from SEM images of example '483 Accused Products:

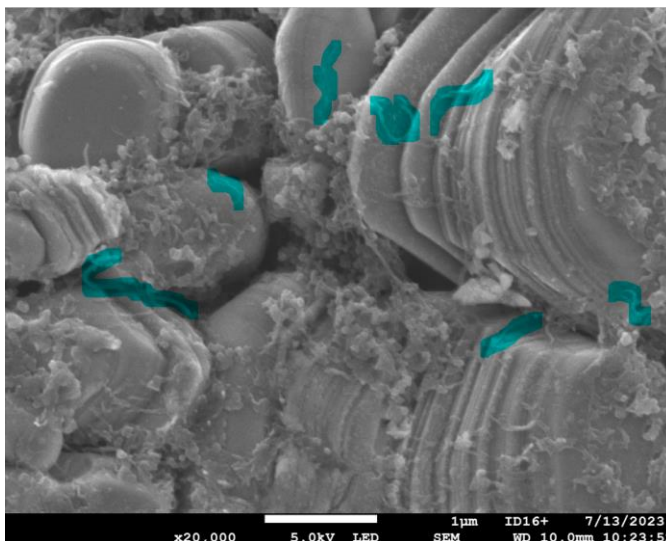
Samsung Galaxy S9



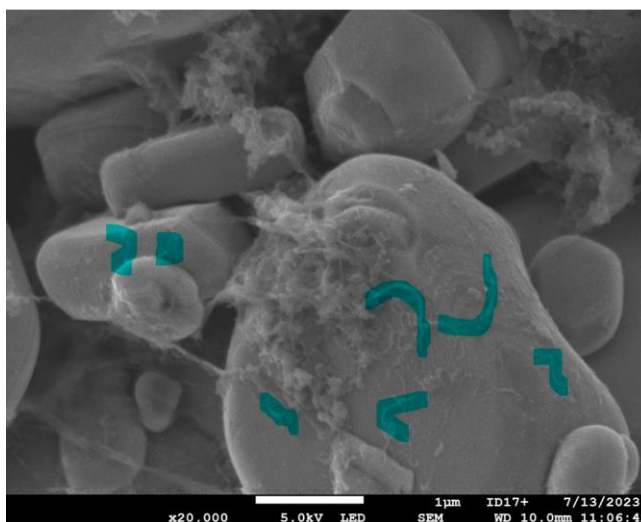
Samsung Galaxy S10+



Samsung Galaxy S21U



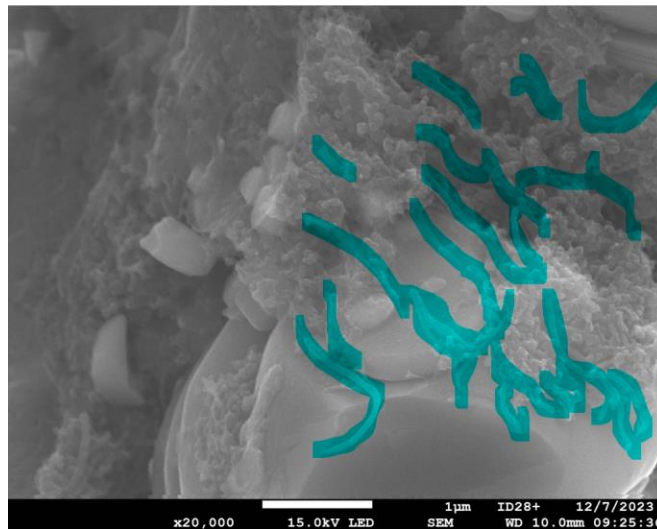
Samsung Galaxy S22U



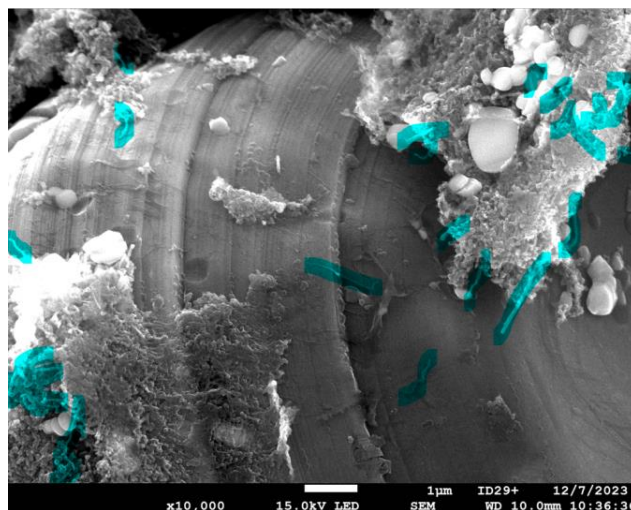
61. The composition in each of the '483 Accused Products comprises discrete, non-agglomerated, and exfoliated carbon nanotubes having a surface and mixtures of ion active materials comprising migratable ions said materials comprising crystals or layers of lithium ion active material, wherein the discrete carbon nanotubes have crystals or layers of lithium ion active

material ionically attached to their surface, as shown below in blue highlighting from SEM images of example '483 Accused Products:

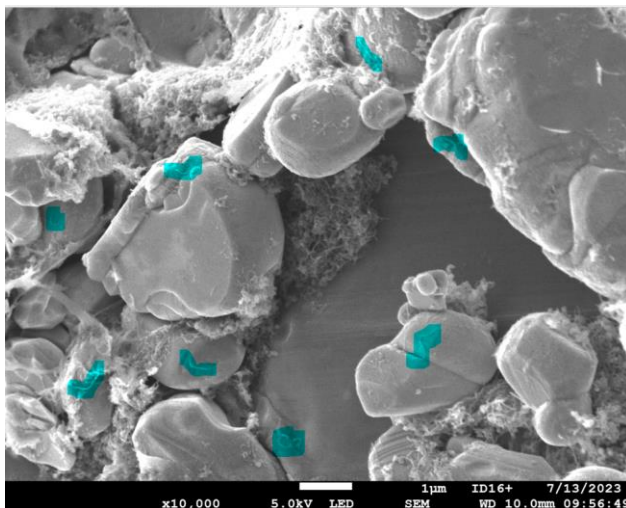
Samsung Galaxy S9



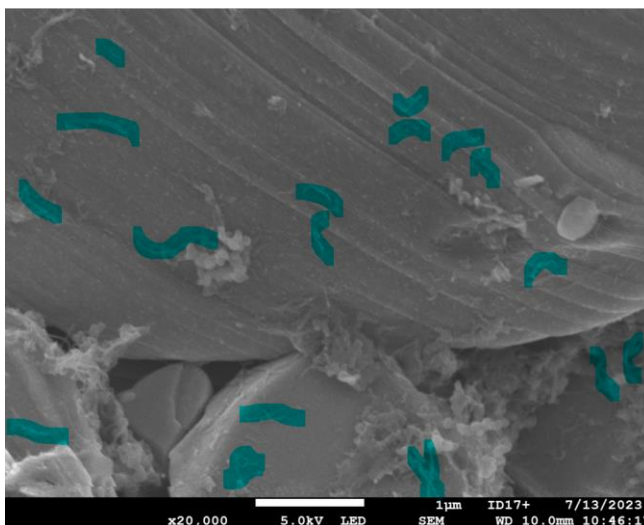
Samsung Galaxy S10+



Samsung Galaxy S21U



Samsung Galaxy S22U

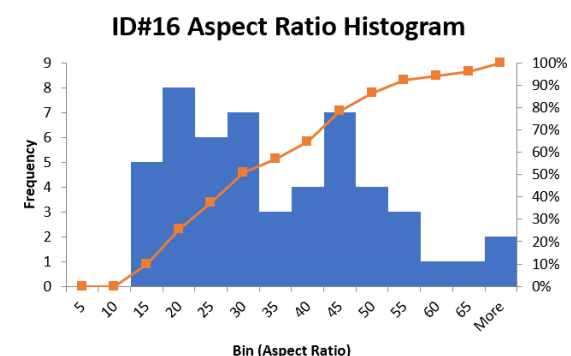


62. The composition in each of the '483 Accused Products comprises discrete, non-agglomerated, and exfoliated carbon nanotubes having a surface, and mixtures of ion active materials comprising migratable ions said materials comprising crystals or layers of lithium ion active material wherein a ratio of lithium ion to other total ions in the ion active materials is at least 2:1 to 25:1, and wherein the discrete carbon nanotubes comprise oxidized species selected

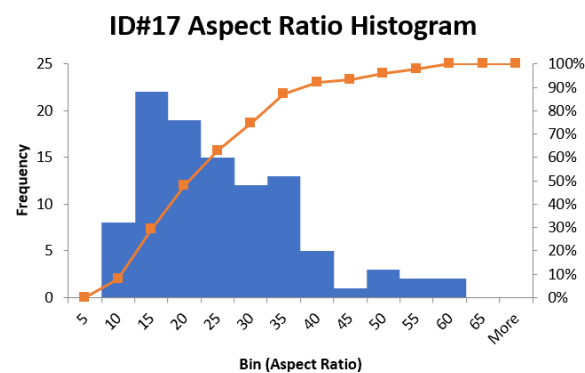
from the group consisting of carboxylic, ketone, or hydroxyl functionalities, and wherein the discrete carbon nanotubes have oxidation levels from 1 % to 15% by weight of the carbon nanotube.

63. The composition in each of the '483 Accused Products comprises discrete, non-agglomerated, and exfoliated carbon nanotubes having a surface, wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500, as illustrated below in graphical depictions of example '483 Accused Products:

Samsung Galaxy S21U



Samsung Galaxy S22U



64. Samsung thus directly infringed, and continues to directly infringe, each element of Claim 1 of the '483 Patent by selling and offering to sell in the United States, and by importing into the United States, without authorization, '483 Accused Products.

65. Samsung also actively induced, and will continue to actively induce after the filing of this complaint, the direct infringement of the '483 Patent by distributors, customers, and other end users of the '483 Accused Products by distributing the '483 Accused Products knowing that they will be further sold, offered for sale, and/or used in the United States. For instance, '483 Accused Products are distributed throughout Texas by third parties like AT&T, US Cellular, and Verizon. *See, e.g., ATT, Get Samsung Galaxy S22 in Ft. Worth*, <https://www.att.com/stores/texas/ft-worth/samsung-galaxy-s22> (last visited February 15, 2024); USCellular, *Where to Buy Samsung Phones in Vernon, TX*, <https://local.uscellular.com/texas/vernon/samsung> (last visited February 15, 2024); Verizon, *Samsung Galaxy S22 at Cellular Sales San Antonio W IH 10*, <https://www.verizon.com/stores/devices/texas/san-antonio/cellular-sales-san-antonio-w-ih-10-a00000327782/smartphones/samsung-galaxy-s22/?sku=sku5540026&productid=dev17760005> (last visited February 15, 2024).

66. In addition, Samsung's ongoing infringement of the '483 Patent is willful. As detailed herein, Samsung now has notice of the '483 Patent and its infringement of it. Nevertheless, without authorization, Samsung deliberately continues to infringe the '483 Patent and also encourages others to infringe the '483 Patent, including by selling and/or using '483 Accused Products in the United States.

67. Samsung's acts of infringement have caused damage to MRD and BDS, and MRD and BDS are entitled to recover from Defendant the damages they have sustained as a result of such wrongful acts in an amount to be proven at trial.

COUNT 4 – INFRINGEMENT OF U.S. PATENT NO. 9,636,649 B2

68. MRD repeats and incorporates by reference each preceding paragraph as if fully set forth herein, and further states:

69. Samsung has directly infringed, and continue to directly infringe, the '649 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, without authorization, one or more products that practice various claims of the '649 Patent, literally or under the doctrine of equivalents (hereinafter the "'649 Accused Products"). At a minimum, such '649 Accused Products include all devices that infringe the claims of the '649 Patent. This includes products like the Samsung Galaxy S9, Samsung Galaxy S10+, Samsung Galaxy S21 Ultra, and Samsung Galaxy S22 Ultra.

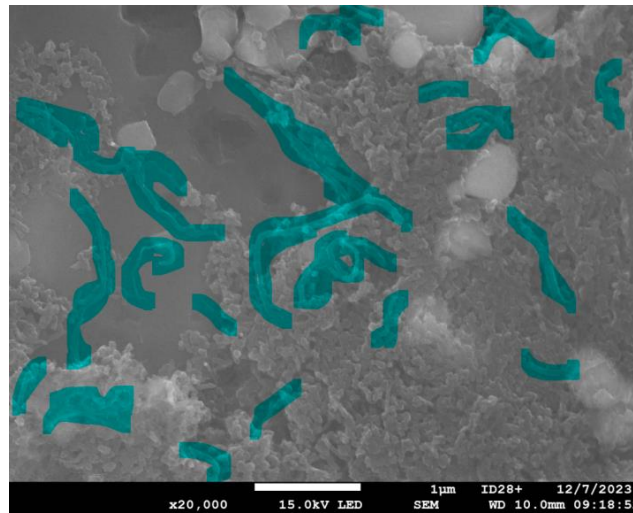
70. As detailed below, the '649 Accused Products are configured by Samsung to practice every element of at least Claim 1 of the '649 Patent literally or under the doctrine of equivalents.⁴ Further, the identified components and functionality are representative of the components and functionality present in all '649 Accused Products.

71. Claim 1 of the '649 Patent recites: "[a] dispersion comprising a plurality of oxidized, discrete carbon nanotubes and at least one additive, wherein the oxidized, discrete carbon nanotubes have an aspect ratio of 25 to 500, are multiwall, and are present in the range of greater than zero to about 30% by weight based on the total weight of the dispersion."

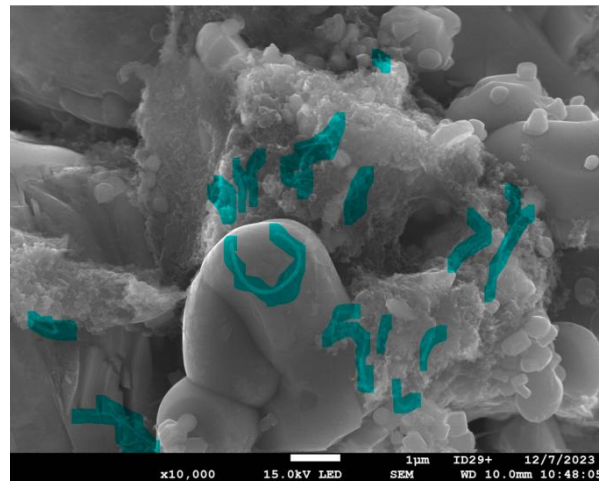
⁴ This description is illustrative and is not intended to be an exhaustive or limiting explanation of every manner in which each '649 Accused Product infringes the '649 Patent.

72. Each of the '649 Accused Products comprises “a dispersion,” as shown below in blue highlighting from SEM images of example '649 Accused Products:

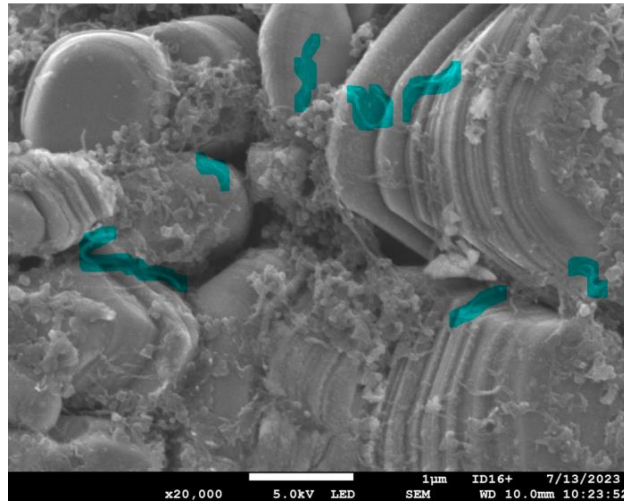
Samsung Galaxy S9



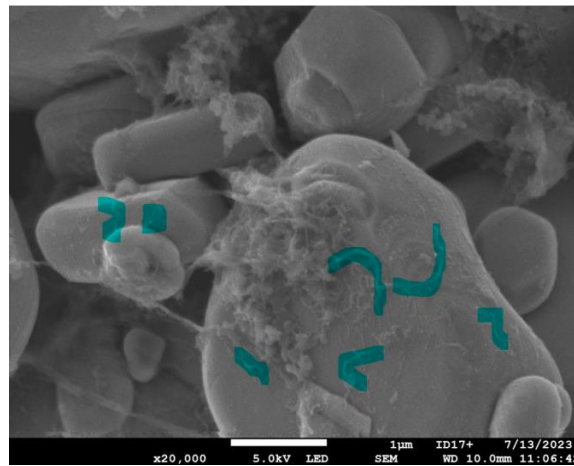
Samsung Galaxy S10+



Samsung Galaxy S21U

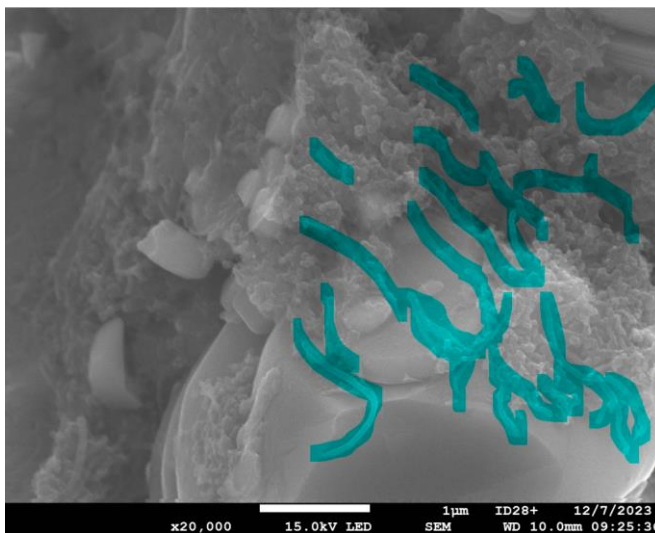


Samsung Galaxy S22U

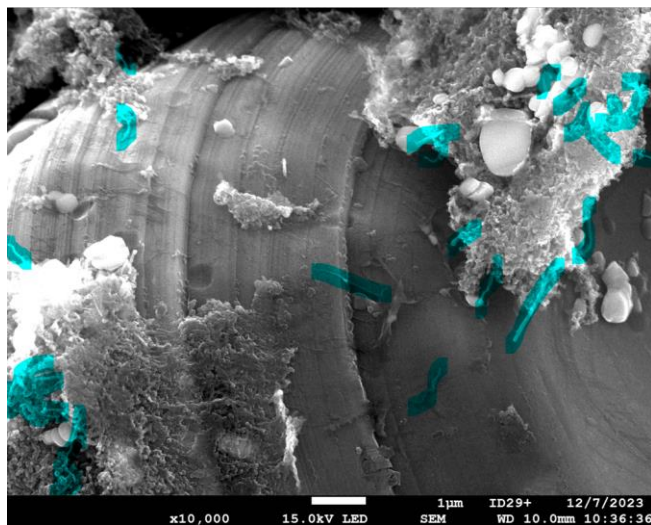


73. Each of the '649 Accused Products comprises a dispersion comprising a plurality of oxidized, discrete carbon nanotubes, as shown below in blue highlighting from SEM images of example '649 Accused Products:

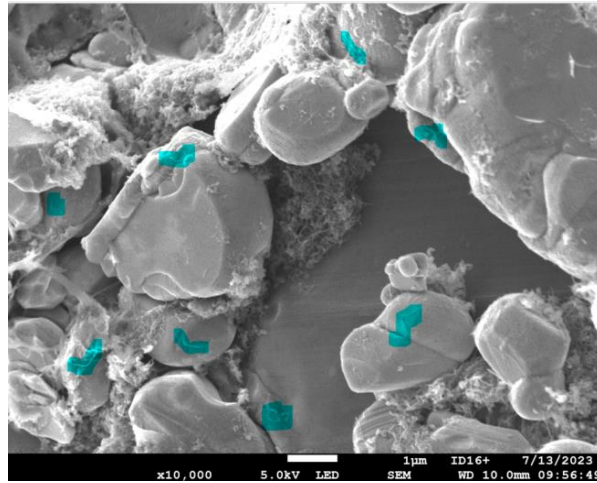
Samsung Galaxy S9



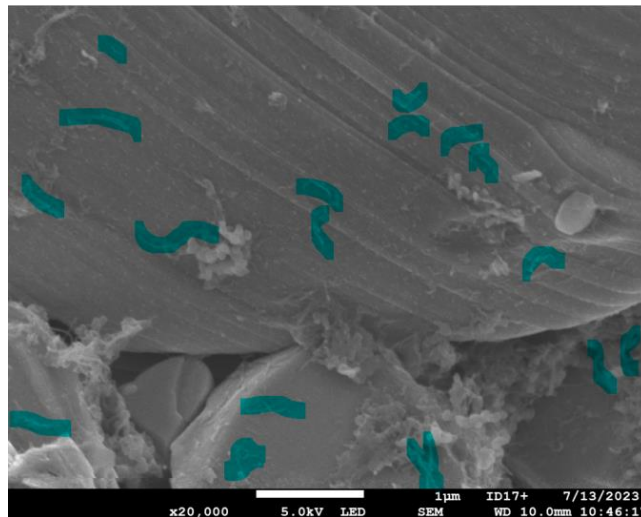
Samsung Galaxy S10+



Samsung Galaxy S21U



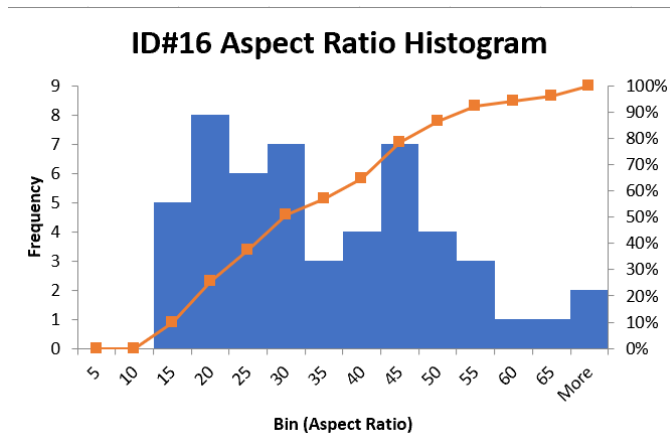
Samsung Galaxy S22U



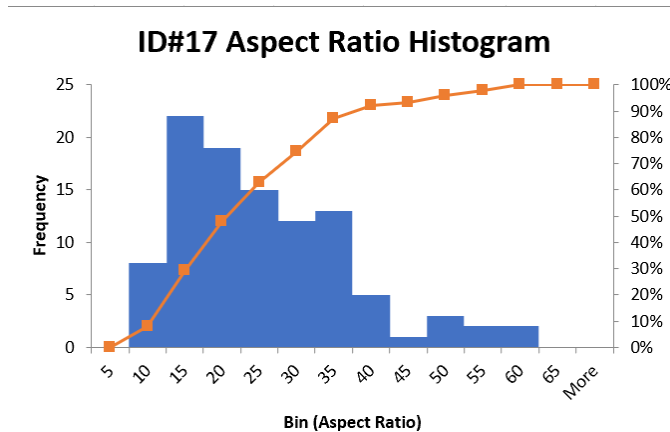
74. The dispersion in each of the '649 Accused Products is also comprised of at least one additive, such as binder molecules (for example, Poly(vinylidene fluoride) binder) or conductive additives (for example, Carbon black).

75. Further, the dispersion in each of the '649 Accused Products comprises oxidized, discrete carbon nanotubes that have an aspect ratio of 25 to 500, as illustrated in graphical depictions below of example '649 Accused Products:

Samsung Galaxy S21U



Samsung Galaxy S22U



76. Further, the dispersion in each of the '649 Accused Products comprises oxidized, discrete carbon nanotubes that are multiwall and are present in the range of greater than zero to about 30% by weight based on the total weight of the dispersion.

77. Samsung thus directly infringed, and continues to directly infringe, each element of Claim 1 of the '649 Patent by selling and offering to sell in the United States, and by importing into the United States, without authorization, '649 Accused Products.

78. Samsung also actively induced, and will continue to actively induce after the filing of this complaint, the direct infringement of the '649 Patent by distributors, customers, and other end users of the '649 Accused Products by distributing the '649 Accused Products knowing that they will be further sold, offered for sale, and/or used in the United States. For instance, '649 Accused Products are distributed throughout Texas by third parties like AT&T, US Cellular, and Verizon. *See, e.g., ATT, Get Samsung Galaxy S22 in Ft. Worth*, <https://www.att.com/stores/texas/ft-worth/samsung-galaxy-s22> (last visited February 15, 2024); USCellular, *Where to Buy Samsung Phones in Vernon, TX*, <https://local.uscellular.com/texas/vernon/samsung> (last visited February 15, 2024); Verizon, *Samsung Galaxy S22 at Cellular Sales San Antonio W IH 10*, <https://www.verizon.com/stores/devices/texas/san-antonio/cellular-sales-san-antonio-w-ih-10-a00000327782/smartphones/samsung-galaxy-s22/?sku=sku5540026&productid=dev17760005> (last visited February 15, 2024).

79. In addition, Samsung's ongoing infringement of the '649 Patent is willful. As detailed herein, Samsung now has notice of the '649 Patent and its infringement of it. Nevertheless, without authorization, Samsung deliberately continues to infringe the '649 Patent and also encourages others to infringe the '649 Patent, including by selling and/or using '649 Accused Products in the United States.

80. Samsung's acts of infringement have caused damage to MRD, and MRD is entitled to recover from Defendants the damages it has sustained as a result of such wrongful acts in an amount to be proven at trial.

COUNT 5 – INFRINGEMENT OF U.S. PATENT NO. 10,608,282 B2

81. MRD repeats and incorporates by reference each preceding paragraph as if fully set forth herein, and further states:

82. Samsung has directly infringed, and continues to directly infringe, the '282 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, without authorization, one or more products that practice various claims of the '282 Patent literally or under the doctrine of equivalents (hereafter "'282 Accused Products"). At a minimum, such '282 Accused Products include all devices that infringe the claims of the '282 Patent. This includes products like the Samsung Galaxy S9, Samsung Galaxy S10+, Samsung Galaxy S21 Ultra, and Samsung Galaxy S22 Ultra.

83. As detailed below, the '282 Accused Products are configured by Samsung to practice every element of at least Claim 1 of the '282 Patent literally or under the doctrine of equivalents.⁵ Further, the identified components and functionality are representative of the components and functionality present in all '282 Accused Products.

84. Claim 1 of the '282 Patent recites "[a] composition for use as a binder material, an electrolyte material or a separator film material of an energy storage or collection device, comprising: a plurality of discrete carbon nanotube fibers, said fibers having an aspect ratio of from about 10 to about 500, and wherein at least a portion of the discrete carbon nanotube fibers

⁵ This description is illustrative and is not intended to be an exhaustive or limiting explanation of every manner in which each '282 Accused Product infringes the '282 Patent.

are open ended and wherein 40% to 90% by number of the discrete carbon nanotubes have an aspect ratio of 30-70 and wherein from 1 % to 30% by number of discrete carbon nanotubes have an average aspect ratio 80-140.”

85. Each of the '282 Accused Products are “energy storage or collection devices.”

Samsung Galaxy S9



Samsung Galaxy S10+



Samsung Galaxy S21U

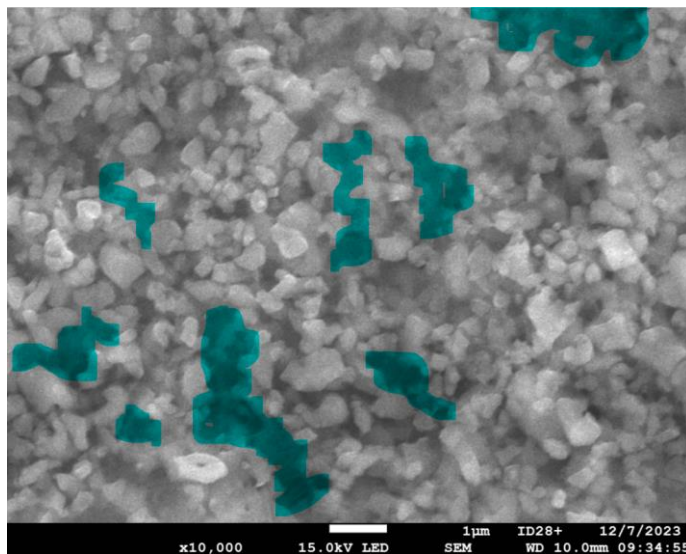


Samsung Galaxy S22U

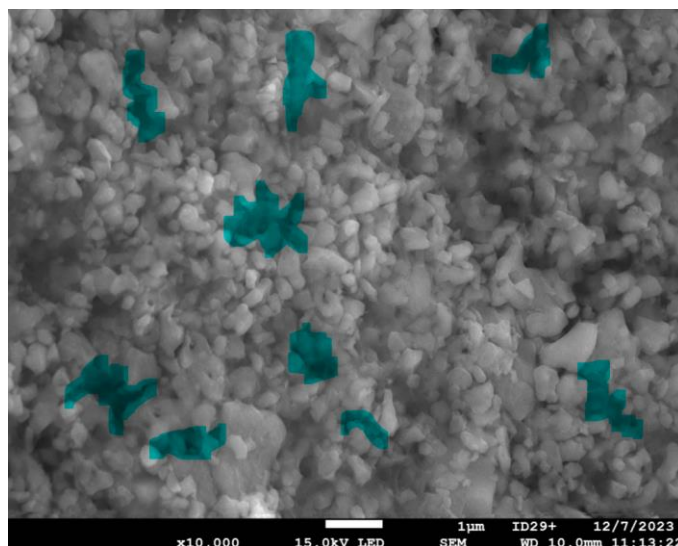


86. Further, each of the '282 Accused Products contains a composition for use as a binder material, an electrolyte material, or a separator film. Such binder material is depicted below in blue highlighting derived from SEM imaging of exemplar '282 Accused Products:

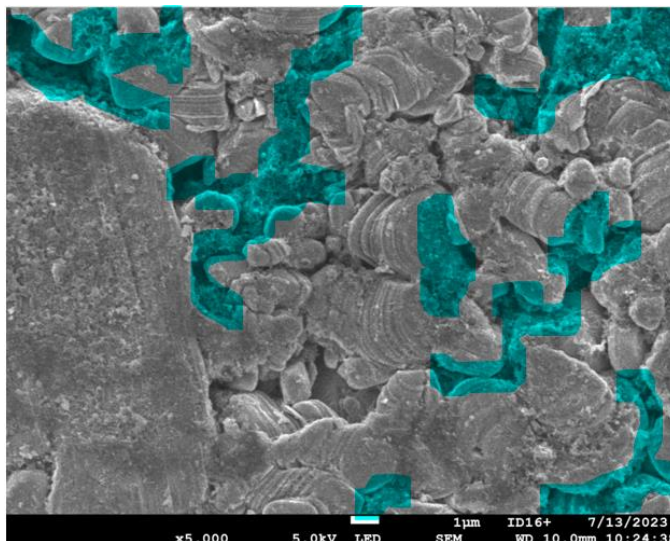
Samsung Galaxy S9



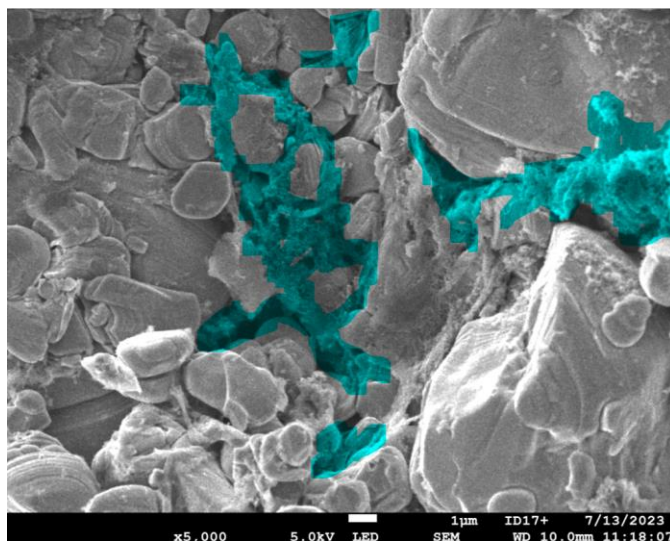
Samsung Galaxy S10+



Samsung Galaxy S21U



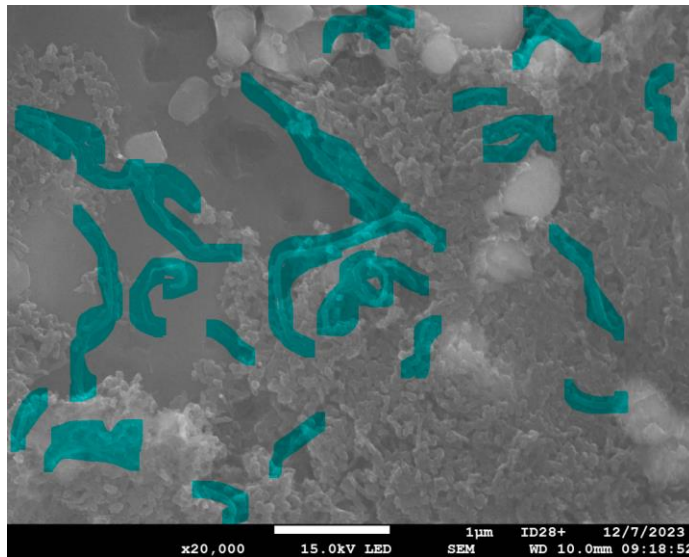
Samsung Galaxy S22U



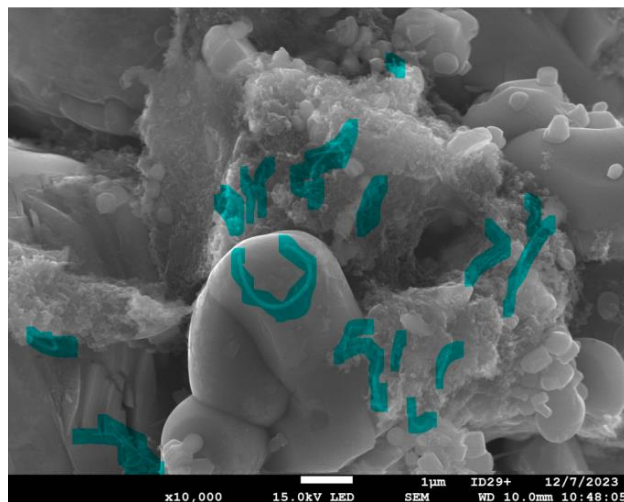
87. Further, the electrolyte material or a separator film material in each the of '282 Accused Products comprises a plurality of discrete carbon nanotube fibers. Below are examples of the electrolyte material or a separator film material comprising a plurality of discrete carbon

nanotube fibers from exemplar '282 Accused Products (reflected in blue highlighting, derived from SEM imaging):

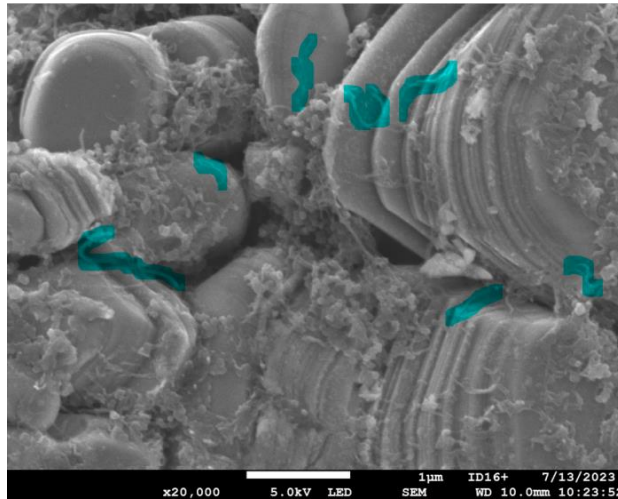
Samsung Galaxy S9



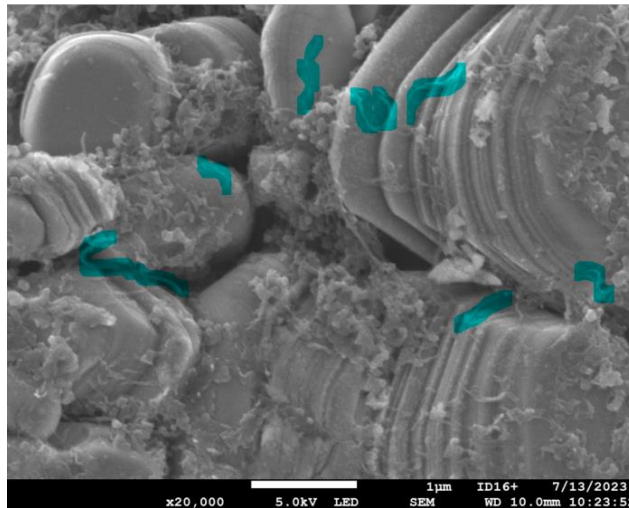
Samsung Galaxy S10+



Samsung Galaxy S21U



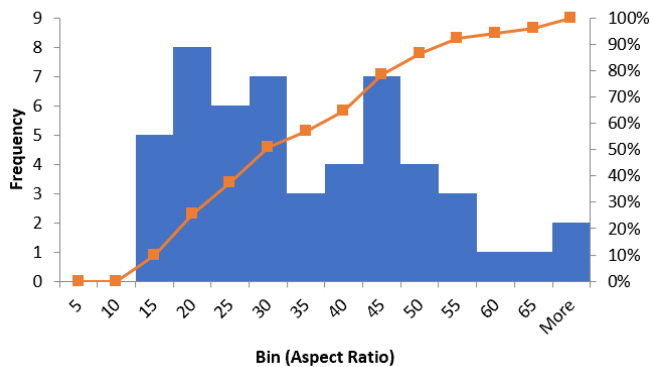
Samsung Galaxy S22U



88. Further, at least a portion of the plurality of discrete carbon nanotubes used in the '282 Accused Products fibers have an aspect ratio from about 10 to about 500, as demonstrated in the graphical depictions of example '282 Accused Products below:

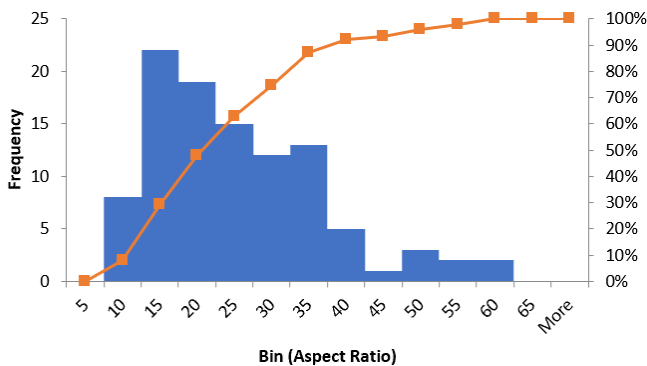
Samsung Galaxy S21U

ID#16 Aspect Ratio Histogram



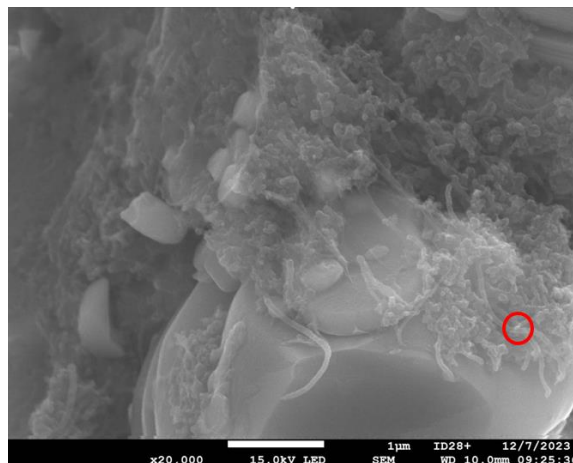
Samsung Galaxy S22U

ID#17 Aspect Ratio Histogram

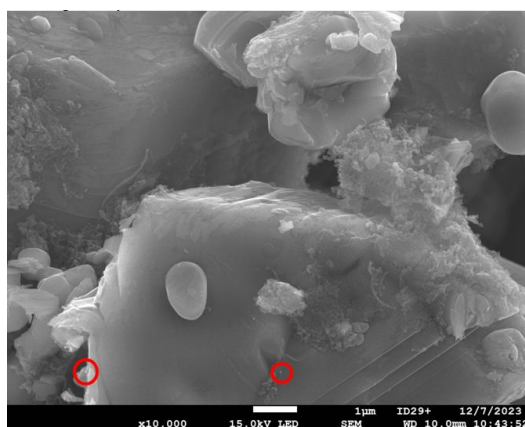


89. Further, at least a portion of the discrete carbon nanotube fibers are open ended, as depicted below in red circles from SEM imaging of example '282 Accused Products:

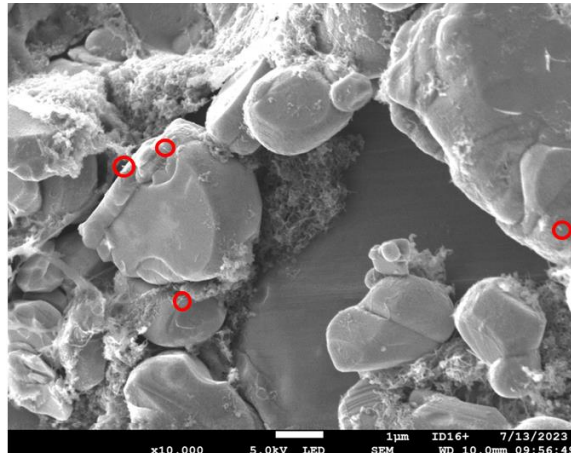
Samsung Galaxy S9



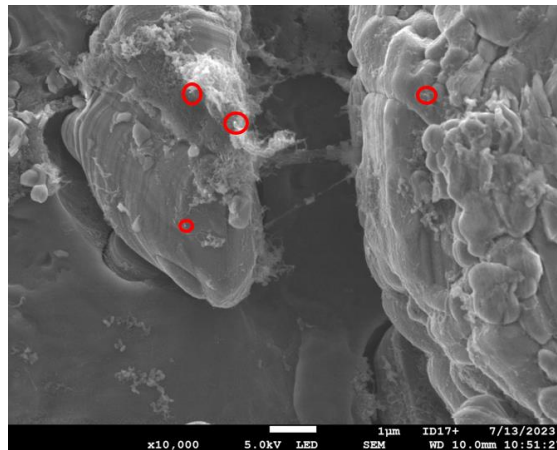
Samsung Galaxy S10+



Samsung Galaxy S21U



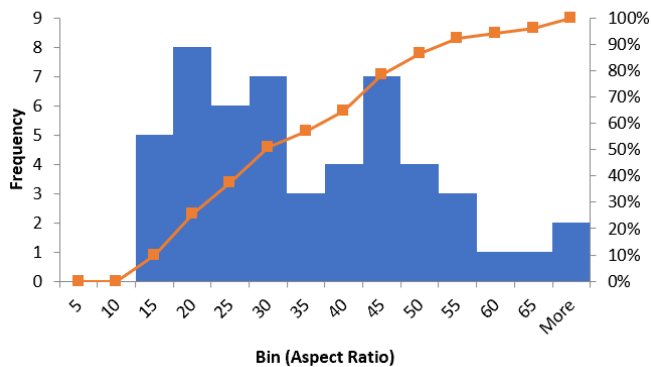
Samsung Galaxy S22U



90. Further, 40% to 90% by number of the discrete carbon nanotubes within the '282 Accused Products have an aspect ratio of 30-70, as indicated in the graphical depictions below of example '282 Accused Products:

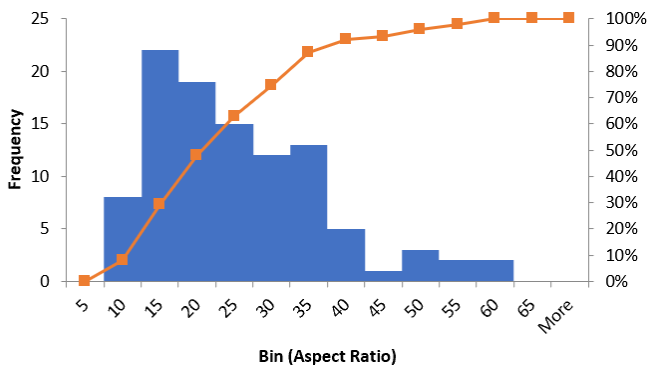
Samsung Galaxy S21U

ID#16 Aspect Ratio Histogram



Samsung Galaxy S22U

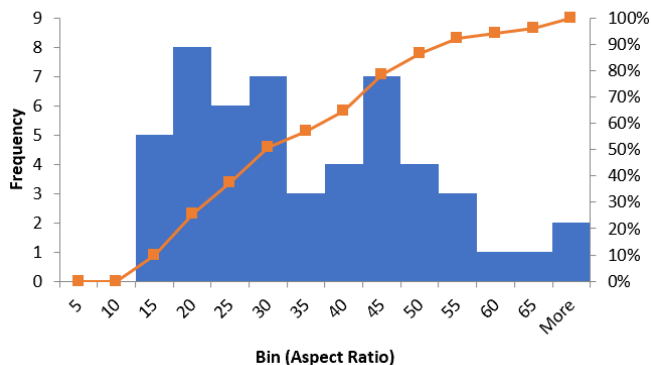
ID#17 Aspect Ratio Histogram



91. Further, from 1% to 30% by number of discrete carbon nanotubes within the '282 Accused Products have an average aspect ratio 80-140, as indicated in the graphical depictions below of example '282 Accused Products:

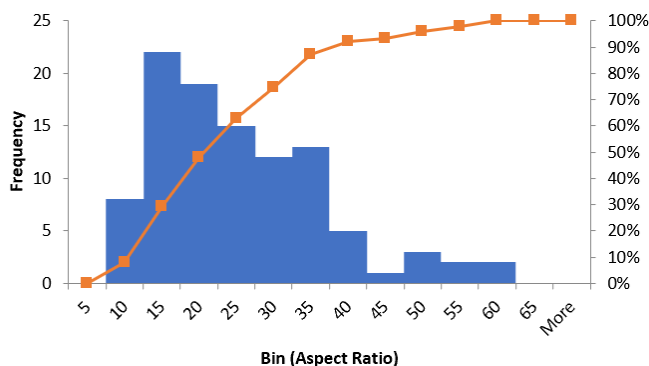
Samsung Galaxy S21U

ID#16 Aspect Ratio Histogram



Samsung Galaxy S22U

ID#17 Aspect Ratio Histogram



92. Samsung thus directly infringed, and continues to directly infringe, each element of Claim 1 of the '282 Patent by selling and offering to sell in the United States, and by importing into the United States, without authorization, '282 Accused Products.

93. Samsung also actively induced, and will continue to actively induce after the filing of this complaint, the direct infringement of the '282 Patent by distributors, customers, and other end users of the '282 Accused Products by distributing the '282 Accused Products knowing that they will be further sold, offered for sale, and/or used in the United States. For instance, '282 Accused Products are distributed throughout Texas by third parties like AT&T, US Cellular, and Verizon. *See, e.g., ATT, Get Samsung Galaxy S22 in Ft. Worth,*

<https://www.att.com/stores/texas/ft-worth/samsung-galaxy-s22> (last visited February 15, 2024); USCellular, *Where to Buy Samsung Phones in Vernon, TX*, <https://local.uscellular.com/texas/vernon/samsung> (last visited February 15, 2024); Verizon, *Samsung Galaxy S22 at Cellular Sales San Antonio W IH 10*, <https://www.verizon.com/stores/devices/texas/san-antonio/cellular-sales-san-antonio-w-ih-10-a00000327782/smartphones/samsung-galaxy-s22/?sku=sku5540026&productid=dev17760005> (last visited February 15, 2024).

94. In addition, Samsung's ongoing infringement of the '282 Patent is willful. As detailed herein, Samsung now has notice of the '282 Patent and its infringement of it. Nevertheless, without authorization, Samsung deliberately continues to infringe the '282 Patent and also encourages others to infringe the '282 Patent, including by selling and/or using '282 Accused Products in the United States.

DEMAND FOR JURY TRIAL

95. Plaintiffs hereby demand a jury trial for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs pray for judgment as follows:

- A. Declaring that Samsung infringed each of the Asserted Patents;
- B. Awarding damages to MRD and BDS for such infringement, including enhanced damages pursuant to 35 U.S.C. § 284, pre- and post-judgment interest without any limitation by 35 U.S.C § 287, and going-forward damages through the life of each Asserted Patent;
- C. Awarding MRD and BDS their attorneys' fees pursuant to 35 U.S.C. § 285 or as otherwise permitted by law;
- D. Awarding all other costs and relief that the Court deems just and proper.

Date: February 16, 2024

Respectfully submitted,

/s/ Andres C. Healy

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