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. LG ENERGY SOLUTION, LTD., Defendant.	Case No. 2:24-cv-00107-JRG (Lead Case) **JURY TRIAL DEMANDED**
MOLECULAR REBAR DESIGN, LLC, AND BLACK DIAMOND STRUCTURES, LLC, Plaintiffs, v. SAMSUNG ELECTRONICS CO., LTD, AND SAMSUNG ELECTRONICS AMERICA, INC., Defendants.	Case No. 2:24-cv-00108-JRG (Member Case) **JURY TRIAL DEMANDED**

PLAINTIFFS' DISCLOSURE OF ASSERTED CLAIMS AND INFRINGEMENT CONTENTIONS PURSUANT TO LOCAL PATENT RULES 3-1 AND 3-2

Pursuant to Local Patent Rules 3-1 and 3-2, Plaintiffs Molecular Rebar Design, LLC and Black Diamond Structures, LLC (collectively, "MRD"), hereby serve their Disclosure of Asserted Claims and Infringement Contentions and accompanying documents on Defendant LG Energy Solution, Ltd., ("LG").

MRD makes these contentions based on the information reasonably available to it at this time and reserves the right to supplement and/or amend these contentions.

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I. Patent Rule 3-1(a) Disclosures

Based upon information presently available, MRD asserts that Defendant directly and indirectly infringes the claims identified in the claim charts that accompany these disclosures. MRD makes this disclosure based on information reasonably available to it at this time and reserves its right to supplement and/or amend its disclosure of Asserted Claims.

II. Patent Rule 3-1(b) Disclosures

In Exhibit 1 included herein, MRD identifies, for each asserted claim, each accused infringing apparatus, product, device, process, method, act, or other instrumentality of LG of which MRD is aware. MRD makes this disclosure based on information reasonably available to it at this time and reserves its right to supplement and/or amend its disclosure of the Accused Instrumentalities, including to identify additional Accused Instrumentalities.

III. Patent Rule 3-1(c) Disclosures

MRD's detailed infringement assertions are contained in the claim charts that accompany these disclosures. MRD makes this disclosure based on information reasonably available to it at this time and reserves its right to supplement and/or amend its disclosure.

IV. Patent Rule 3-1(d) Disclosures

MRD asserts that Defendant literally infringes each asserted claim. To the extent that any particular element is shown not to be met literally, MRD contends that Defendant infringes under the Doctrine of Equivalents as there would be no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, *i.e.*, the corresponding functionality in the Accused Products does substantially the same thing, in substantially the same way, to achieve substantially the same result(s) as the claimed elements.

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MRD makes this disclosure based on information reasonably available to it at this time and reserves its right to supplement and/or amend its disclosure.

V. Patent Rule 3-1(e) Disclosures

The Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than September 17, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than September 27, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than October 5, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than October 7, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than October 8, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than October 19, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than October 21, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than November 3, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than November 16, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 are entitled to a priority date no later than February 7, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than February 10, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than February 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than March 2, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than May 1, 2009. In the alternative, the Asserted Claims of U.S.

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Patent No. 8,808,909 B2 are entitled to a priority date of no later than August 24, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than September 4, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than October 26, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than December 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than March 15, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than May 12, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than June 9, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than July 25, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than November 7, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than December 17, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than March 2, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than March 11, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than April 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than June 23, 2011, including through the filing of Provisional Application No. 61/500560. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than November 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than March 15, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909

B2 are entitled to a priority date of no later than March 26, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date of no later than May 30, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 8,808,909 B2 are entitled to a priority date no later than June 21, 2012, including through the filing of Application No. 14/128,392.

The Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than September 17, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than September 27, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than October 5, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than October 7, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than October 8, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than October 19, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than October 21, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than November 3, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than November 16, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than February 7, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than February 10, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than February 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no

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later than March 2, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than May 1, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than August 24, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than September 4, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than October 26, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than December 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than March 15, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than May 12, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than June 9, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than July 25, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than November 7, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than December 17, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than March 2, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than March 11, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than April 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than November 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than March 15, 2012. In the alternative, the Asserted Claims of U.S.

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Patent No. 10,608,282 B2 are entitled to a priority date of no later than March 26, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date of no later than May 30, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than June 21, 2012, including through the filing of Provisional Application No. 61/663,513. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than June 22, 2012, including through the filing of Provisional Application No. 61/662,393. In the alternative, the Asserted Claims of U.S. Patent No. 10,608,282 B2 are entitled to a priority date no later than June 21, 2013, including through the filing of Application No. 14/390,902.

The Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than September 17, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than September 27, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than October 5, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than October 7, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than October 8, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than October 19, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than October 21, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than November 3, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 are entitled to a priority date no later than November 16, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than February 7, 2009. In the

alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than February 10, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than February 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than March 2, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than May 1, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than August 24, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than September 4, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than October 26, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than December 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than March 15, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than May 12, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than June 9, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than July 25, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than November 7, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than December 14, 2010, including through the filing of Provisional Application No. 61/423,033. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than December 17, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than March 2, 2011. In the

alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than March 11, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than April 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than November 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than December 12, 2011, including through the filing of Patent Application No. 13/993,206. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than March 15, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than March 26, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date of no later than May 30, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than October 27, 2015, including through the filing of Patent Application No. 14/924,246. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than May 27, 2016, including through the filing of Patent Application No. 15/166,931. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than August 1, 2016, including through the filing of Patent Application No. 15/166,931. In the alternative, the Asserted Claims of U.S. Patent No. 9,636,649 B2 are entitled to a priority date no later than October 7, 2016, including through the filing of Patent Application No. 15/288/553.

The Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than September 17, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than September 27, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than

October 5, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than October 7, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than October 8, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than October 19, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than October 21, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than November 3, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than November 16, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than February 7, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than February 10, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than February 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than March 2, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than May 1, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than August 24, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than September 4, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than October 26, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than December 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than March 15, 2010. In the alternative, the Asserted Claims

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of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than May 12, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than June 9, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than July 25, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than November 7, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than December 17, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than March 2, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than March 11, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than April 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than June 23, 2011, including through the filing of Provisional Application No. 61/500560. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than November 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than March 15, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than March 26, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date of no later than May 30, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 8,968,924 B2 are entitled to a priority date no later than June 21, 2012, including through the filing of Application No. 14/128,392.

The Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than September 17, 2008. In the alternative, the Asserted Claims of U.S. Patent No.

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10,153,483 B2 are entitled to a priority date of no later than September 27, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than October 5, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than October 7, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than October 8, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than October 19, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than October 21, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than November 3, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than November 16, 2008. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than February 7, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than February 10, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than February 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than March 2, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than May 1, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than August 24, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than September 4, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than October 26, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later

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than December 12, 2009. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than March 15, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than May 12, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than June 9, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than July 25, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than November 7, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than December 17, 2010. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than March 2, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than March 11, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than April 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than June 23, 2011, including through the filing of Provisional Application No. 61/500,560. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than November 10, 2011. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than March 15, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than March 26, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date of no later than May 30, 2012. In the alternative, the Asserted Claims of U.S. Patent No. 10,153,483 B2 are entitled to a priority date no later than June 21, 2012, including through the filing of Application No. 13/529,797.

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VI. Patent Rule 3-1(f) Disclosures

With respect to the ’649 Patent, MRD identifies the following products, devices, processes, methods, acts, or other instrumentalities that incorporate or reflect Claims 1, 2, and 11 of that Patent: Pb1xx0 Series (Auto); Pb2xx0 Series (Deep Cycle); Pb3xx0 Series (Storage); Pb4xx0 Series (Traction); PbAC (AntiCorrosion); PbLite (Process Aid); Li2151; and Li3281. With respect to the ’282 Patent, MRD identifies the following products, devices, processes, methods, acts, or other instrumentalities that incorporate or reflect Claims, 1, 5, 6, 7, and 8 of that Patent: Pb1xx0 Series (Auto); Pb2xx0 Series (Deep Cycle); Pb3xx0 Series (Storage); Pb4xx0 Series (Traction); PbAC (AntiCorrosion); PbLite (Process Aid); Li2151; and Li3281. MRD makes this disclosure based on information reasonably available to it at this time and reserve its right to supplement and/or amend its disclosure.

VII. Patent Rule 3-2(a) Documents

MRD presently is not relying on documents evidencing any discussion with, disclosure to, or other manner of providing to a third party, or sale of or offer to sell, the claimed invention prior to the date of application for the patent in suit. MRD makes this disclosure based on information reasonably available to it at this time and reserve its right to supplement and/or amend its disclosure.

VIII. Patent Rule 3-2(b) Documents

Non-privileged documents evidencing the conception, reduction to practice, design, and development of each claimed invention and their respective families, which were created on or before the date of application for the patent in suit or the priority date identified pursuant to Patent Rule 3-1(e) are being concurrently produced bearing Bates numbers MRD-0000003083–MRD-0000003698.

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MRD makes this disclosure based on information reasonably available to it at this time and reserve its right to supplement and/or amend its disclosure.

IX. Patent Rule 3-2(c) Documents

A copy of the file history and issued patent for each of the Asserted Patents is being concurrently produced bearing Bates numbers MRD-0000000001–MRD-0000003082.

Date: May 15, 2024

Respectfully submitted,
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Exhibit 1

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Molecular Rebar Design, LLC et al. v. LG Energy Solution, LTD., No. 2:24-cv-107 **(E.D. Tex.)**

Infringement of Asserted Patents; U.S. Patent No. 3.1(b)

This chart identifies for each asserted claim, each accused apparatus, product, device, process, method, act, or other instrumentality ("Accused Product") of LG Energy Solution, Ltd, ("LG") of which Molecular Rebar Design, LLC and Black Diamond Structures, LLC (collectively, "MRD") is aware.

MRD notes that the below chart contains an exemplary, non-limiting identification of each Accused Product. MRD makes these contentions based on the information reasonably available to it at this time and before LG has provided any technical materials or source code. MRD reserves the right to modify, supplement, and/or amend these contentions as additional evidence and information become available, including in light of discovery, invalidity, prior art, claim construction, or any information provided.

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

Accused Product
• HG2 battery • HG6 battery • MJ1 18650INR battery • E78 battery • Gram Laptop '18 battery • Gram Laptop '22 battery • G8 Cell Phone '19 battery • Any variants, precursor, or subsequent models of each of the above Accused Products; • Any fast-charging batteries using, including, or incorporating carbon nanotubes ("CNTs"); • Any high-rate discharge batteries using, including, or incorporating CNTs; • Any e-vehicle, computer, electronic wearable, cellular device, home battery backup, residential energy storage, or similar or related product, instrumentality, device, or technology using, including, or incorporating CNTs.

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

Accused Product
• HG2 battery • HG6 battery • MJ1 18650INR battery • E78 battery • Gram Laptop '18 battery • Gram Laptop '22 battery • G8 Cell Phone '19 battery • Any variants, precursor, or subsequent models of each of the above Accused Products; • Any fast-charging batteries using, including, or incorporating CNTs; • Any high-rate discharge batteries using, including, or incorporating CNTs; • Any e-vehicle, computer, electronic wearable, cellular device, home battery backup, residential energy storage, or similar or related product, instrumentality, device, or technology using, including, or incorporating CNTs.

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

Accused Product
• HG2 battery • HG6 battery • MJ1 18650INR battery • E78 battery • Gram Laptop '18 battery • Gram Laptop '22 battery • G8 Cell Phone '19 battery • Any variants, precursor, or subsequent models of each of the above Accused Products; • Any fast-charging batteries using, including, or incorporating CNTs; • Any high-rate discharge batteries using, including, or incorporating CNTs; • Any e-vehicle, computer, electronic wearable, cellular device, home battery backup, residential energy storage, or similar or related product, instrumentality, device, or technology using, including, or incorporating CNTs.

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

Accused Product
• HG2 battery • HG6 battery • MJ1 18650INR battery • E78 battery • Gram Laptop '18 battery • Gram Laptop '22 battery • G8 Cell Phone '19 battery • Any variants, precursor, or subsequent models of each of the above Accused Products; • Any fast-charging batteries using, including, or incorporating CNTs; • Any high-rate discharge batteries using, including, or incorporating CNTs; • Any e-vehicle, computer, electronic wearable, cellular device, home battery backup, residential energy storage, or similar or related product, instrumentality, device, or technology using, including, or incorporating CNTs.

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

Accused Product
• HG2 battery • HG6 battery • MJ1 18650INR battery • E78 battery • Gram Laptop '18 battery • Gram Laptop '22 battery • G8 Cell Phone '19 battery • Any variants, precursor, or subsequent models of each of the above Accused Products; • Any fast-charging batteries using, including, or incorporating CNTs; • Any high-rate discharge batteries using, including, or incorporating CNTs; • Any e-vehicle, computer, electronic wearable, cellular device, home battery backup, residential energy storage, or similar or related product, instrumentality, device, or technology using, including, or incorporating CNTs.

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Molecular Rebar Design, LLC et al. v. LG Energy Solution, Ltd., No. 2:24-cv-107 (E.D. Tex.)

Infringement of U.S. Patent No. 8,808,909

This chart shows on an element-by-element basis how Molecular Rebar Design, LLC and Black Diamond Structures, LLC (collectively, "MRD") contend that LG Energy Solution, Ltd. ("LG") infringes Claims 1, 2, 5, 6, 7, and 8 of U.S. Patent No. 8,808,909 (the "'909 Patent") through the making, using, offering for sale, sale, and/or importation of the products identified on Exhibit 1, as well as any other products that LG makes, uses, offers for sale, sells, and/or imports that operate in the manner set forth below, including any subsequent versions or releases of such products (collectively, the "'909 Accused Products").

LG also indirectly infringes each asserted claim in violation of 35 U.S.C. §271(b) by taking active steps to encourage and facilitate direct infringement by third parties in the United States, including customers, partners, and service providers, through the dissemination of the '909 Accused Products and the creation and dissemination of marketing and promotional materials, supporting materials, instructions, product manuals, and/or technical information relating to such products with knowledge and the specific intent that its efforts would result in the direct infringement of the '909 Patent. For example, LG announced in 2023 that it expected to triple energy storage "division's global sales in five years, fueled by the remarkable expansion of the U.S. market." LG Energy Solution, *LG Energy Solution Announces U.S. Market Strategies for ESS*, https://news.lgensol.com/companynews/press-releases/2108 (last visited February 15, 2024). It also announced in 2023 that it was "set to launch a new residential energy storage system in the U.S. in November." LG, *LG Energy Solution enblock S to Make U.S. Debut in November*, https://news.lgensol.com/companynews/press-releases/2210 (last visited February 15, 2024). It also announced in 2023 that it had "signed a supply agreement for lithium-ion battery modules to be used in Toyota battery electric vehicles (BEVs) that will be assembled in the United States." LG, *LG Energy Solution and Toyota Sign Long-term Battery Supply Agreement to Power Electric Vehicles in the U.S.*, https://news.lgensol.com/company-news/press-releases/2177 (last visited February 15, 2024). LG thus induced, and continues to actively induce, the direct infringement of the '909 Patent by service providers and other customers by distributing the '909 Accused Products and by, among other things, creating and distributing various programs that train customers to use them in an infringing manner.

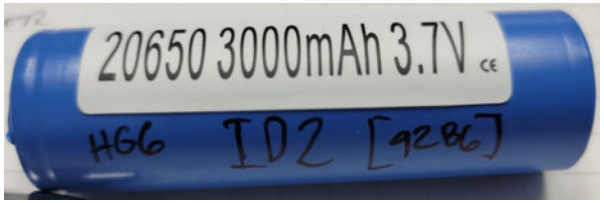
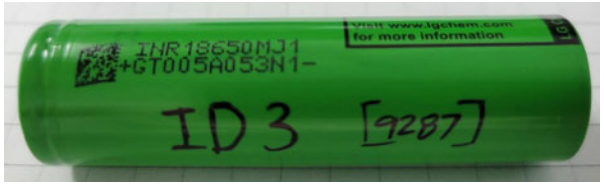
MRD notes that the below chart contains an exemplary, non-limiting description of how each '909 Accused Product infringes the '909 Patent. MRD makes these contentions based on the information reasonably available to it at this time and before LG has provided any technical materials or source code. MRD reserves the right to modify, supplement, and/or amend these contentions as additional evidence and information become available, including in light of discovery, invalidity, prior art, claim construction, or any information provided.

As demonstrated below, MRD contends that each element of each asserted claim is literally infringed by the '909 Accused Products. MRD further contends that, to the extent that any particular element is not met literally by the '909 Accused Products, each '909 Accused Product infringes under the doctrine of equivalents for the reasons set forth below because there would be no substantial difference between the elements of the asserted claims and the corresponding functionality in the accused instrumentality, i.e., the corresponding

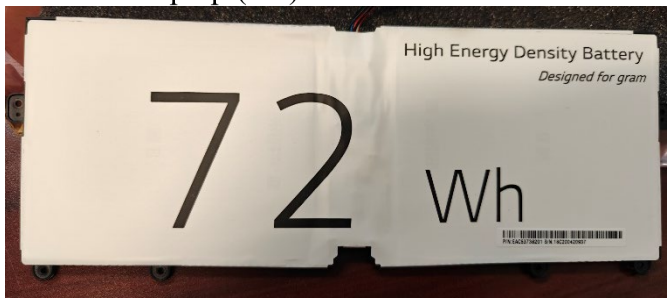
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functionality in the ’909 Accused Products does substantially the same thing, in substantially the same way, to achieve substantially the same result(s) as the claimed elements.

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Claim		Contention
1	A composition useful for lithium-ion batteries comprising:	To the extent that the preamble is limiting, it is met by the '909 Accused Products, each of which comprises "[a] composition useful for lithium-ion batteries." Specifically, each of the'909 Accused Products is a battery that comprises lithium-ion cells and/or pouches. For example, LG has stated that "the two most widely used mixtures are NCM (**Li**, O, Ni, Co, Mn) and NCA (**Li**, Ni, Co, Al, O)." https://blog.lgchem.com/en/2023/05/31_cathode_material/. Further, LG also utilizes a mixture comprised of LCO (**Li**, Co, O) and LFP (**Li**, Iron, Phosphate). Examples of such batteries are depicted below. LG HG2:  LG HG6:  LG MJ1:  LG Gram Laptop ('22):

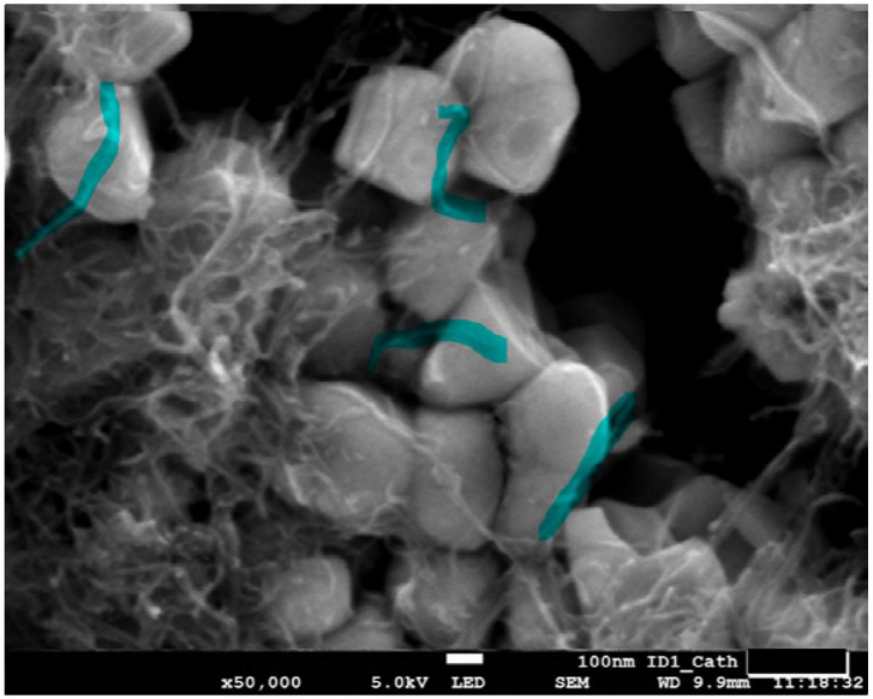
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Claim		Contention
		 LG E78 eVehicle/ESS Pouch:  LG Gram Laptop (’19): 

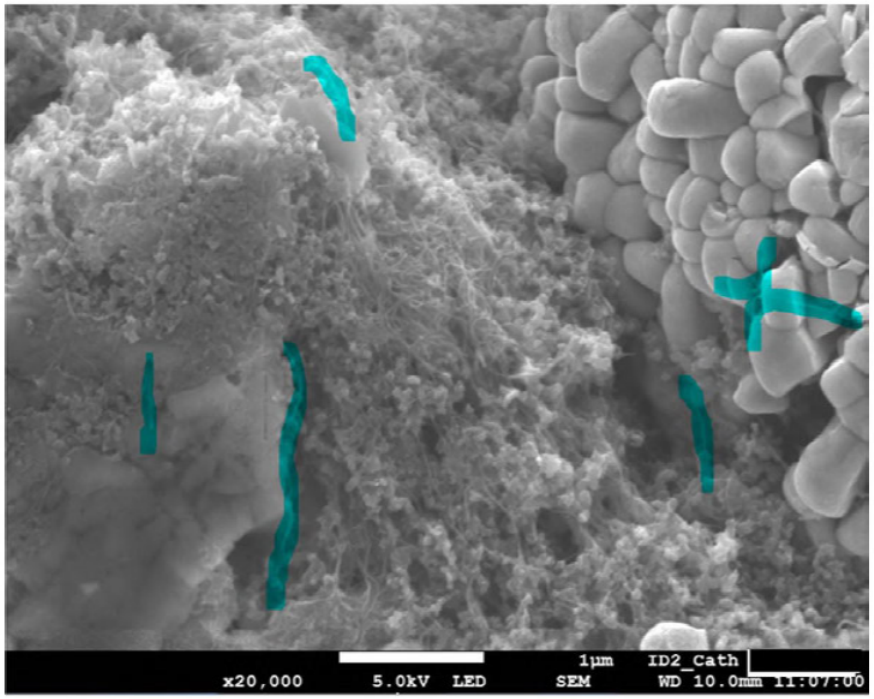
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Claim		Contention
		LG G8 Cellphone Battery (’19): 
	discrete carbon nanotubes having crystals or layers of lithium-ion active material attached to their surface,	This element is met by the ’909 Accused Products, each of which comprises “discrete carbon nanotubes having crystals or layers of lithium-ion active material attached to their surface.” Specifically, each of the ’909 Accused Products comprises crystals of lithium-ion active material, including crystals comprised of NCM, NCA, LCO, and/or LFP.

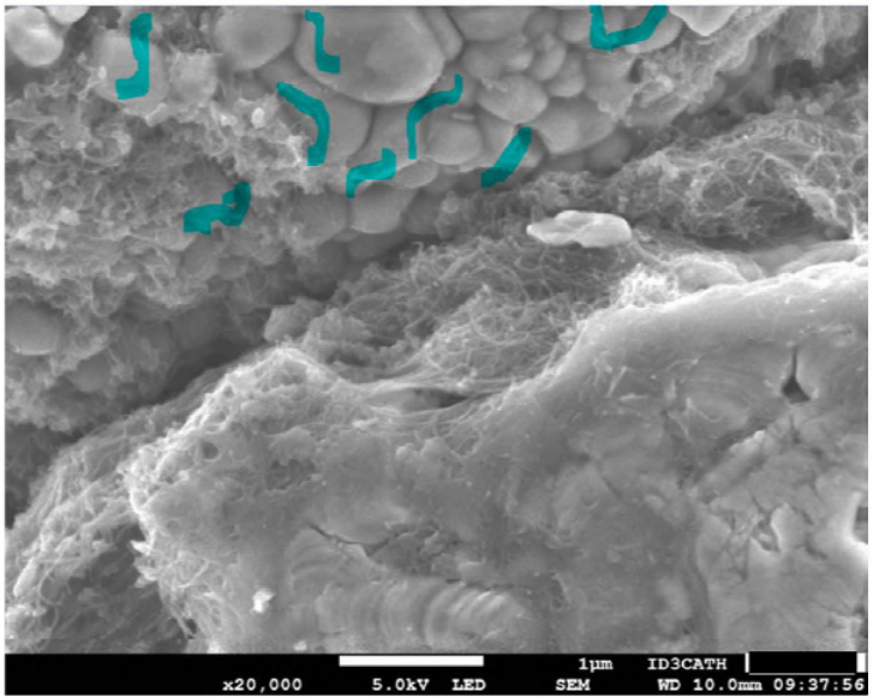
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		This is demonstrated by the below images relating to certain representative '909 Accused Products, which reflects that HG2 comprises discrete nanotubes (highlighted in blue) attached via their surface to nickel cobalt manganese (NCM) active material crystals that are approximately 400-500 nm (nanoscale) in diameter. 

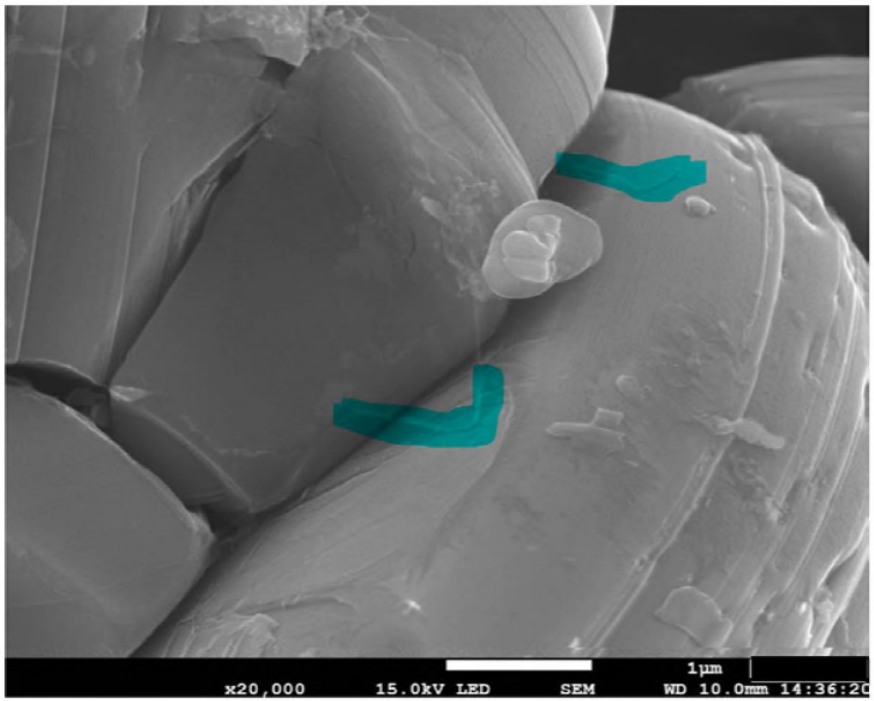
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		As another example, as depicted below, HG6 comprises discrete nanotubes (highlighted in blue) attached via their surface to nickel cobalt manganese (NCM) active material crystals that are approximately 200-400 nm (nanoscale) in diameter. 

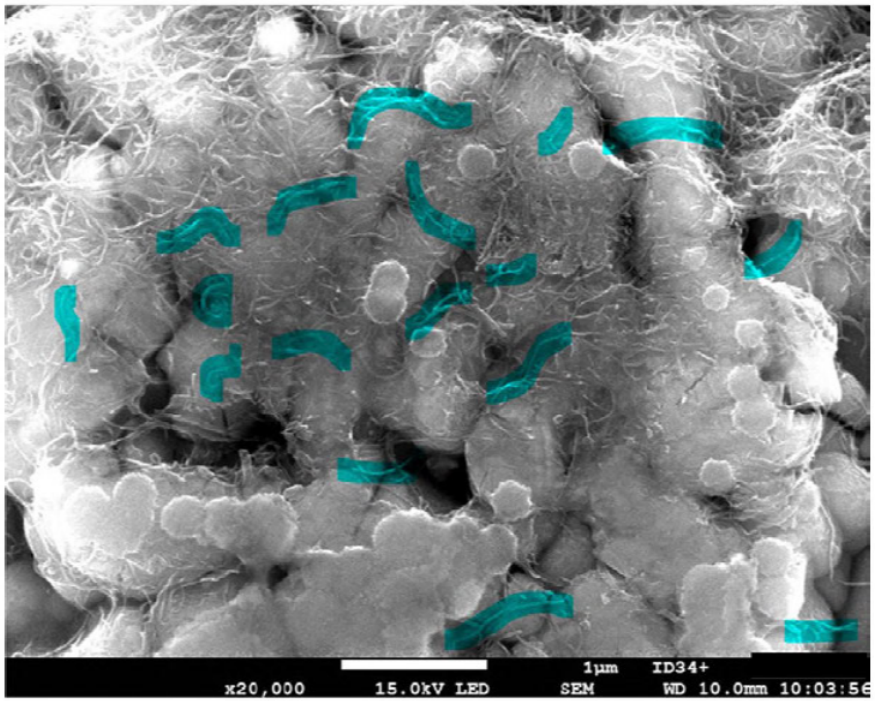
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	Claim	Contention
		As another example, as depicted below, MJ1 comprises discrete nanotubes (highlighted in blue) attached via their surface to nickel cobalt manganese (NCM) active material crystals that are approximately 200-500 nm (nanoscale) in diameter. 

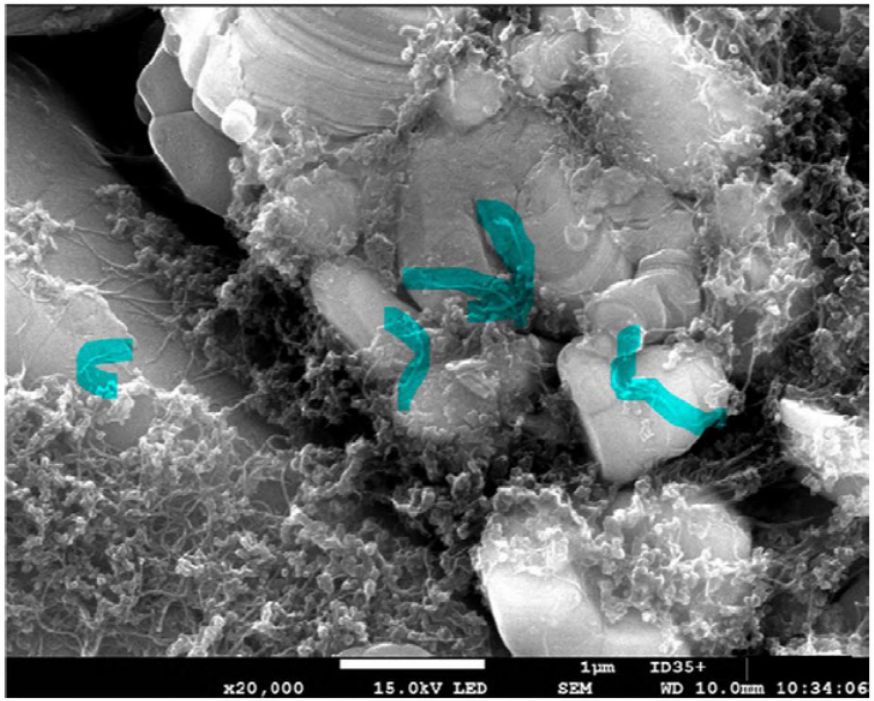
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Claim	Contention
	As another example, as depicted below, the LG Gram Battery ('22) comprises discrete nanotubes (highlighted in blue) attached via their surface to lithium cobalt oxide (LCO) active material crystals that are approximately 1,000-20,000 nm (nanoscale) in diameter. 

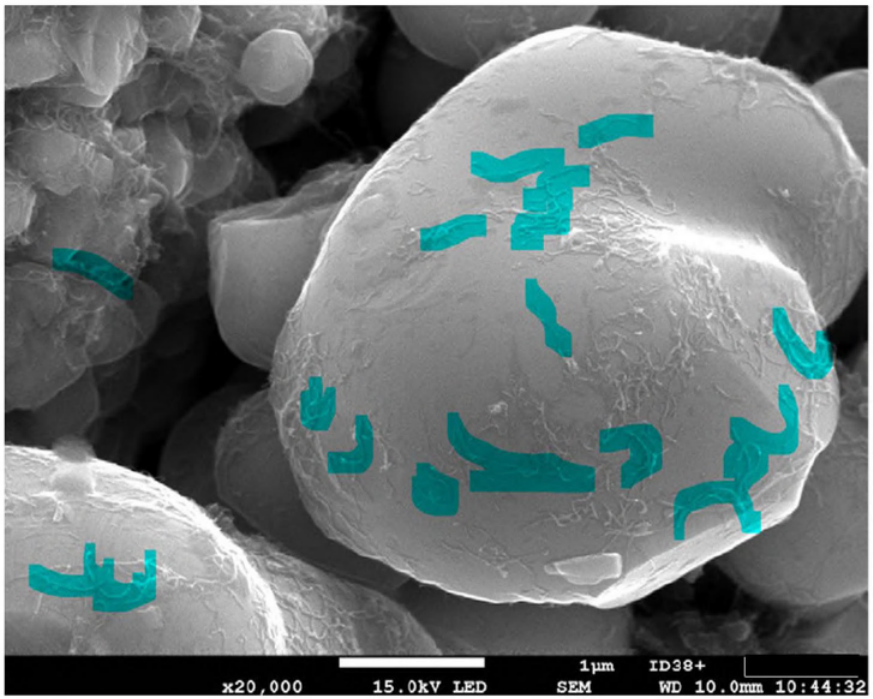
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Claim	Contention
	As another example, as depicted below, E78 comprises discrete nanotubes (highlighted in blue) attached via their surface to nickel cobalt manganese (NCM) active material crystals that are approximately 200-500 nm (nanoscale) in diameter. 

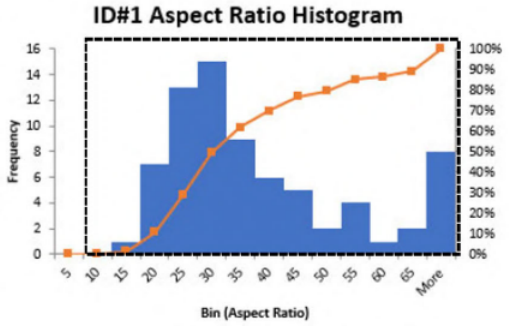
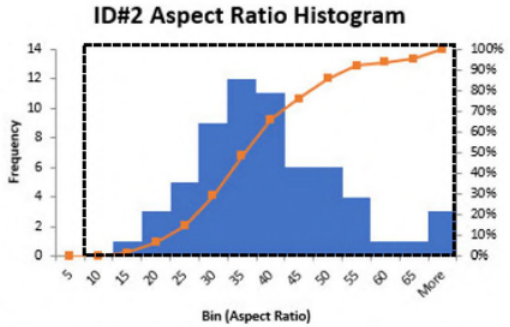
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Claim	Contention
	As another example, as depicted below, the LG Gram Laptop ('19) comprises discrete nanotubes (highlighted in blue) attached via their surface to lithium cobalt oxide (LCO) active material crystals that are approximately 1,000-20,000 nm (nanoscale) in diameter. 

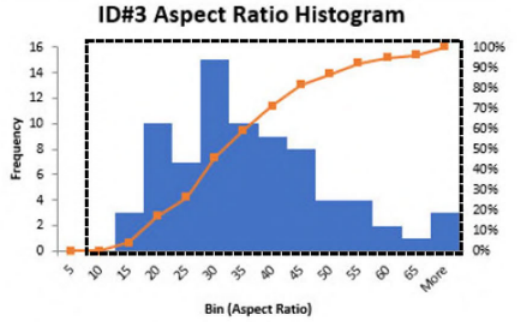
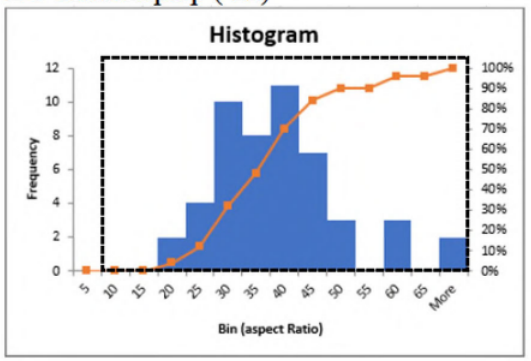
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	Claim	Contention
		As another example, as depicted below, LG G8 Cellphone Battery ('19) comprises discrete nanotubes (highlighted in blue) attached via their surface to nickel cobalt manganese (NCM) active material crystals. 
	wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500	This element is met by the '909 Accused Products, each of which comprises discrete carbon nanotubes "wherein the discrete carbon nanotubes have an aspect ratio of 10 to 500." Specifically, each of the '909 Accused Products comprises carbon nanotubes having an aspect ratio of between 10 to 500 when its length is divided by its diameter.

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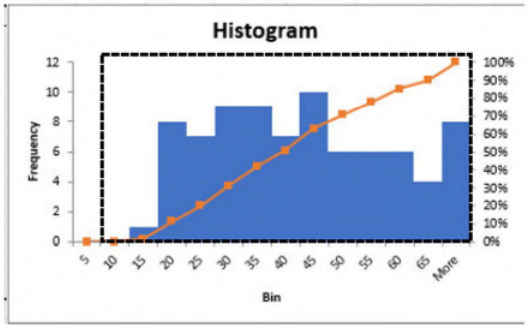
Claim		Contention
		This is demonstrated by the below images relating to certain representative '909 Accused Products, which reflects that the '909 Accused Products comprise discrete nanotubes with an aspect ratio typically between 10 and 100: HG2  HG6  MJ1

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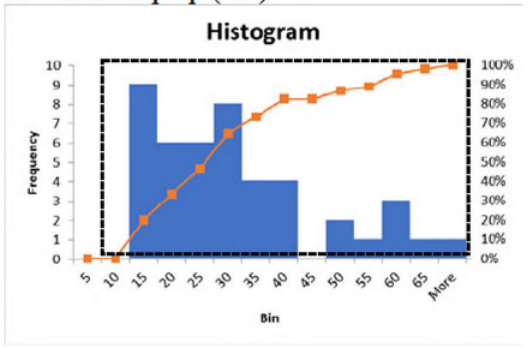
Claim	Contention
	 LG Gram Laptop ('22) 

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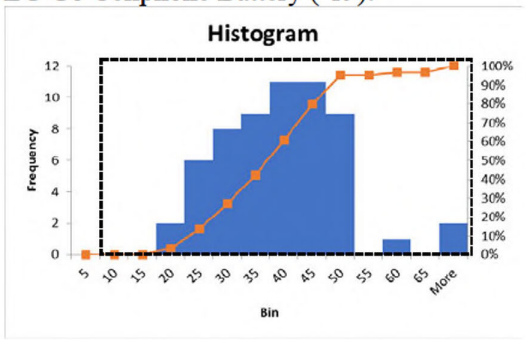
LG E78 eVehicle/ESS Pouch:



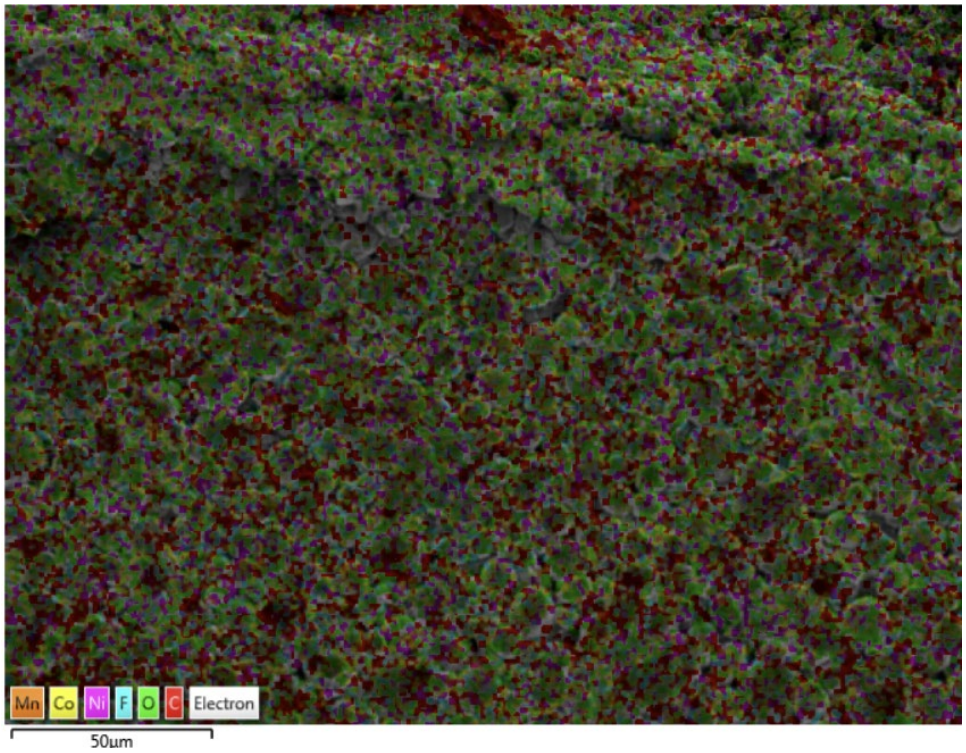
LG Gram Laptop ('19):



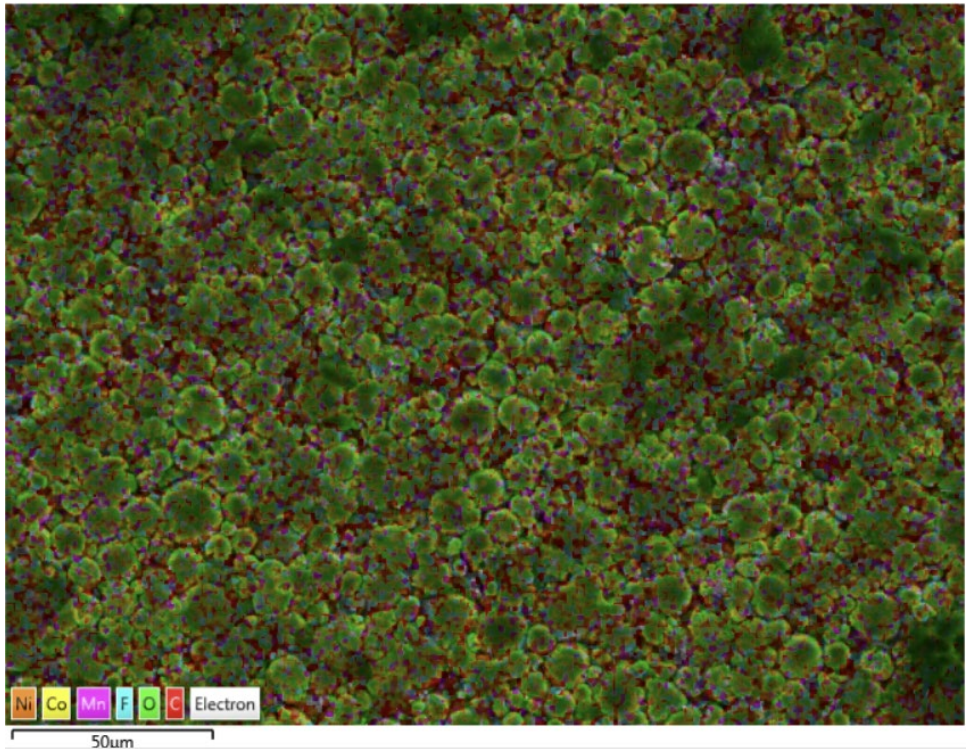
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	Claim	Contention
		LG G8 Cellphone Battery ('19): 
	and oxidation levels from 1% to 15% by weight of the carbon nanotube.	This element is met by the '909 Accused Products, each of which comprises discrete carbon nanotubes "wherein the discrete carbon nanotubes have … oxidation levels from 1% to 15% by weight of the carbon nanotube." Specifically, each of the '909 Accused Products comprises carbon nanotubes having oxidation levels not exceeding 15% by weight of the carbon nanotube, with the majority having oxidation levels of approximately 1% to 3% by weight of the carbon nanotube. This is demonstrated in part by the below images relating to certain representative '909 Accused Products, which reflects the presence of oxygen in each representative sample.

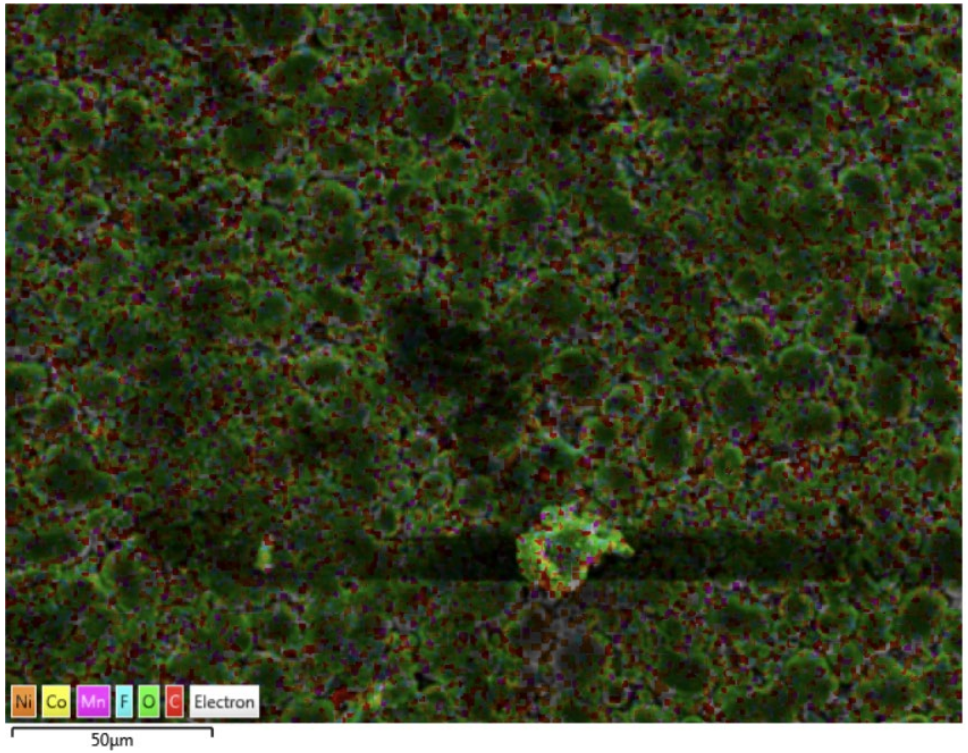
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		HG2 

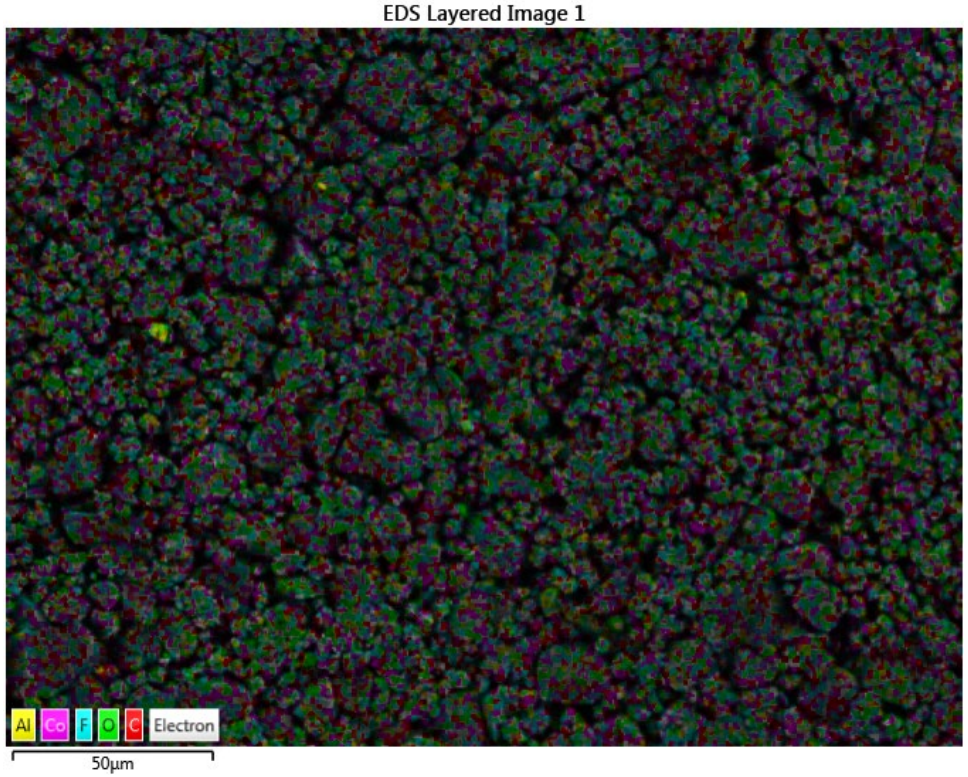
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		HG6 

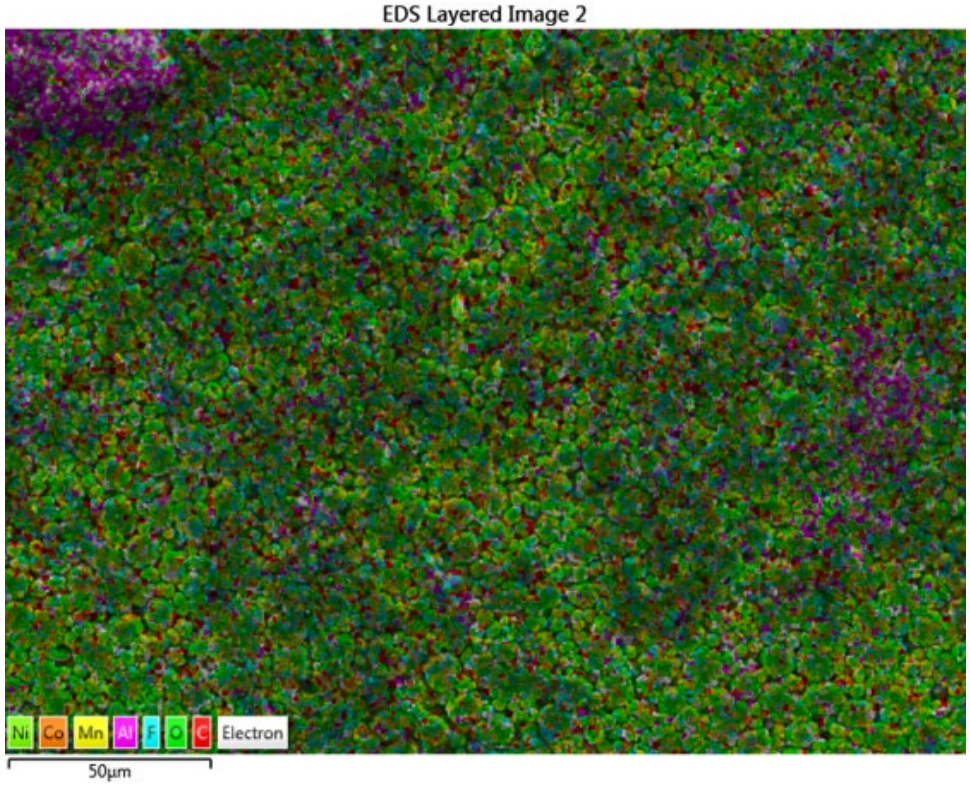
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Claim		Contention
		MJ1 

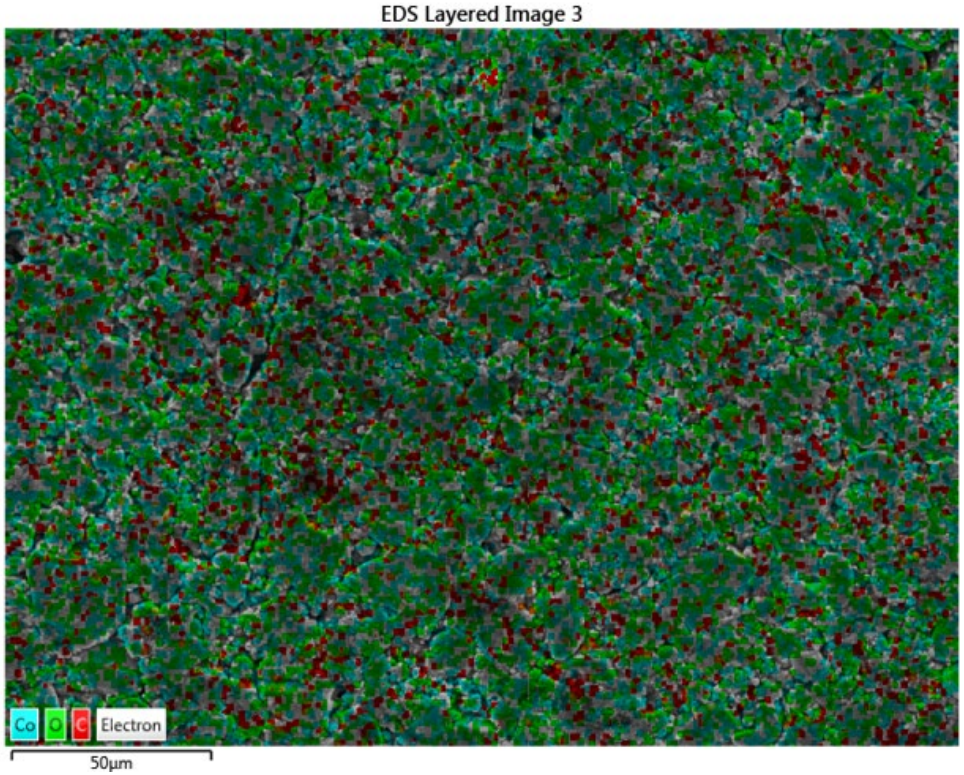
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Claim		Contention
		LG Gram Laptop (’22): 

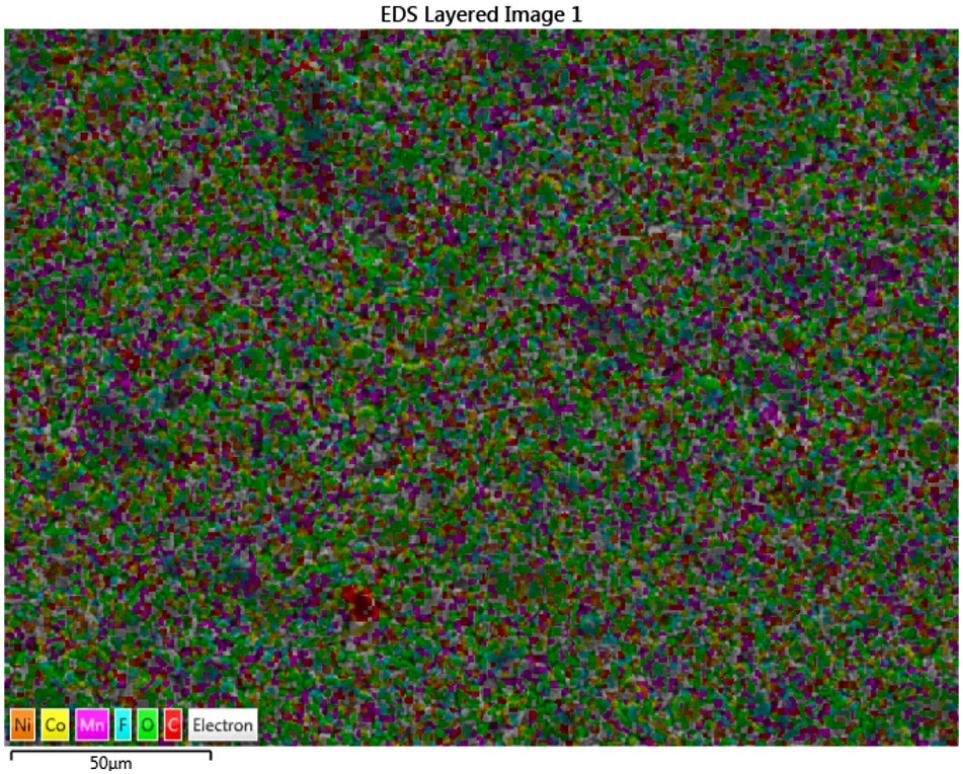
43
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Claim		Contention
		LG E78 eVehicle/ESS Pouch: 

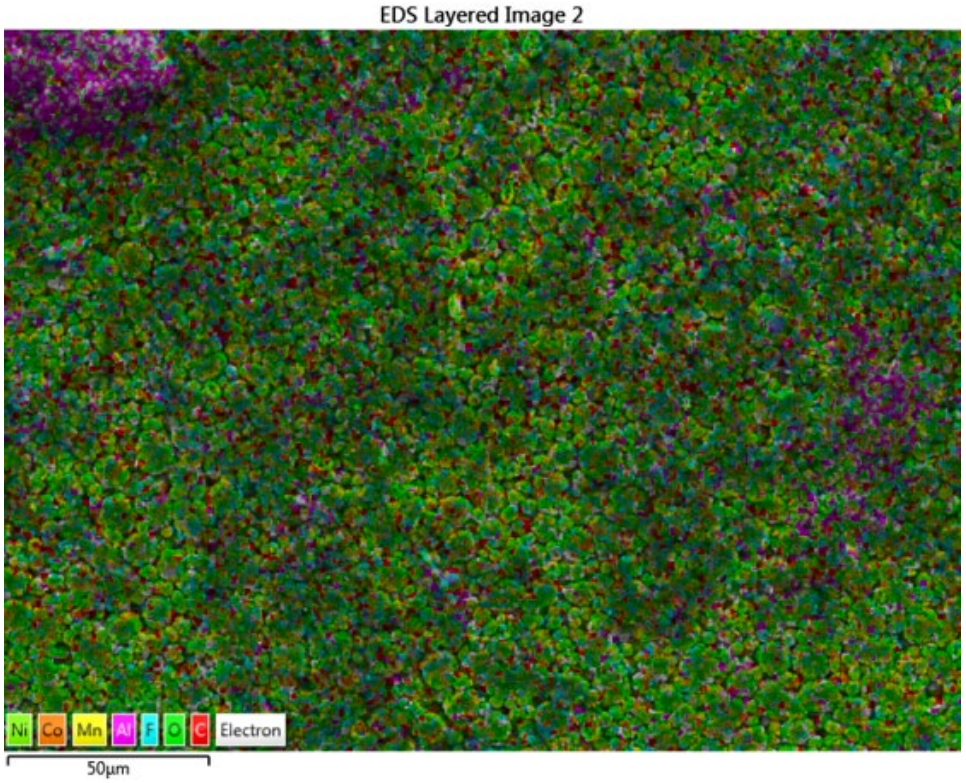
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Claim		Contention
		LG Gram Laptop (’19): 

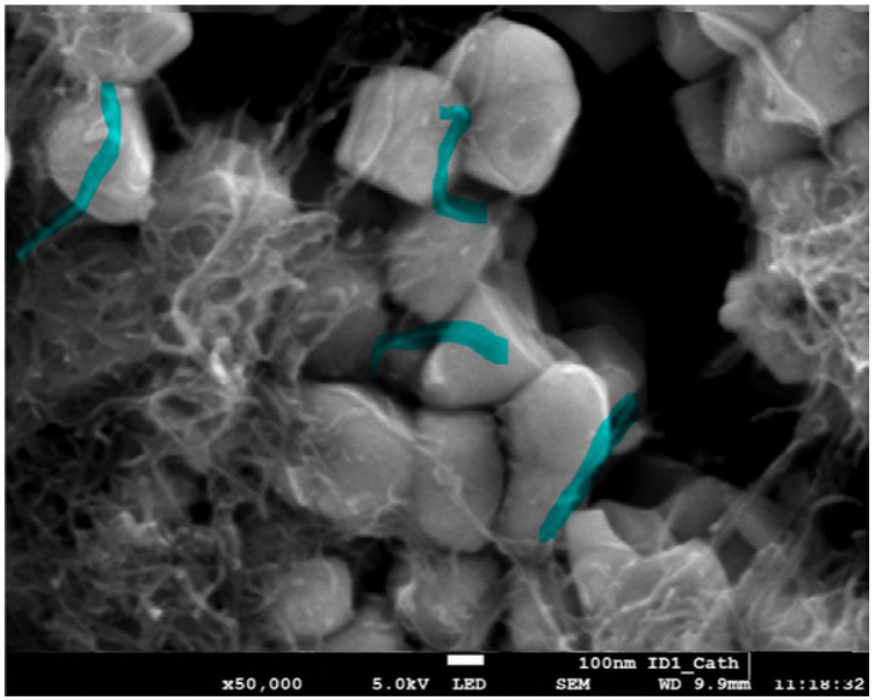
45
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Claim		Contention
		LG G8 Cellphone Battery (’19): 
2	The composition of claim 1, wherein the crystals or layers of lithium ion active material comprise tin, silicon, copper, antimony, aluminum, germanium, titanium, or mixtures thereof.	This element is met by the ’909 Accused Products, each of which comprises “[t]he composition of claim 1, wherein the crystals or layers of lithium ion active material comprise tin, silicon, copper, antimony, aluminum, germanium, titanium, or mixtures thereof.” As detailed above, each of the ’909 Accused Products comprises “[t]he composition of claim 1.” Further, each of the ’909 Accused Products comprises aluminum or mixtures comprising aluminum, including dopant levels of aluminum. For example, LG has stated that one of the “most widely used mixtures are … NCA (Li, Ni, Co, **Al**, O).”

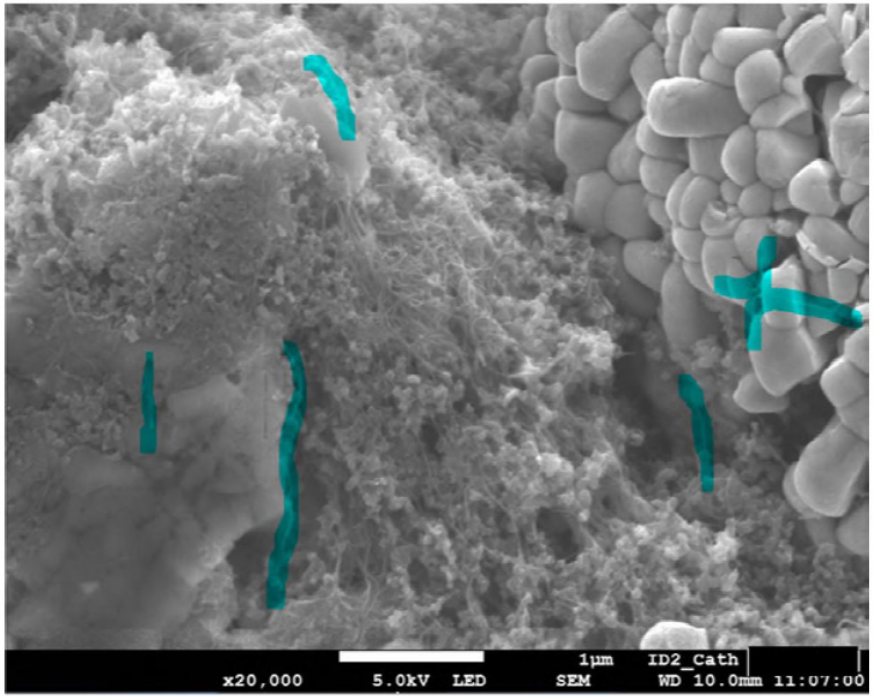
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Claim		Contention
		https://blog.lgchem.com/en/2023/05/31_cathode_material/. This is also demonstrated by the exemplary below images relating to certain representative '909 Accused Products, which reflects the presence of aluminum (i.e., Al) in an NCM-based composition: LG E78 eVehicle/ESS Pouch: 
5	The composition of claim 1, wherein the carbon nanotubes are present in a weight percentage of 0.1% to	This element is met by the '909 Accused Products, each of which comprises "[t]he composition of claim 1, wherein the carbon nanotubes are present in a weight percentage of 0.1% to 10% by weight of the lithium ion active material."

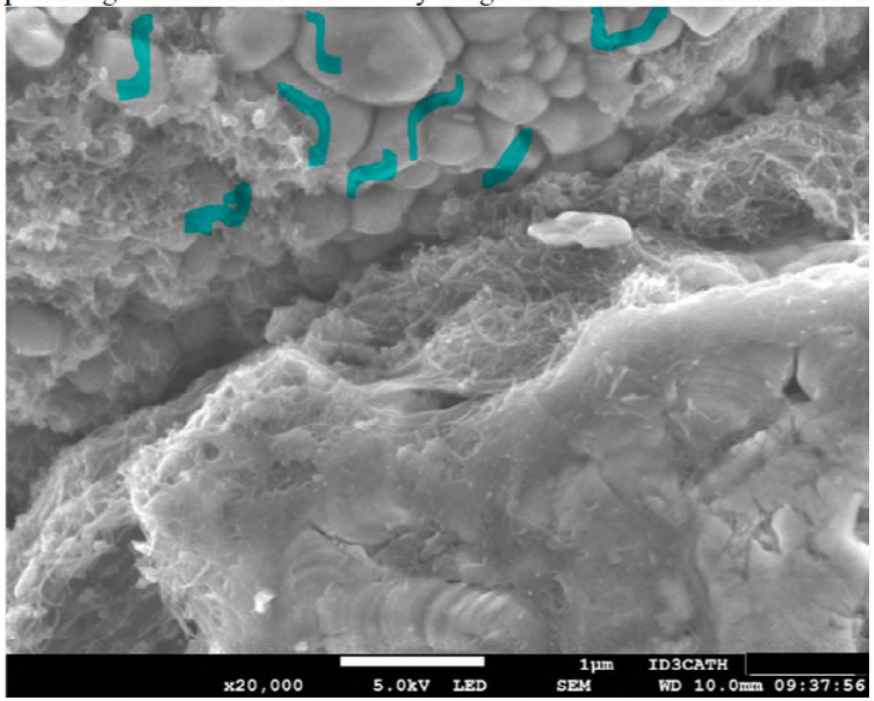
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	Claim	Contention
	10% by weight of the lithium ion active material.	As detailed above, each of the '909 Accused Products comprises "[t]he composition of claim 1." Further, each of the '909 Accused Products comprises discrete carbon nanotubes having crystals of lithium-ion active material attached to their surface in a weight percentage of 0.1% to 4% by weight of the lithium ion active material. This is demonstrated by the below images relating to certain representative '909 Accused Products, which reflects that HG2 comprises nanotubes (highlighted in blue) in a weight percentage between 0.1% and 4% by weight of the lithium ion active material: 

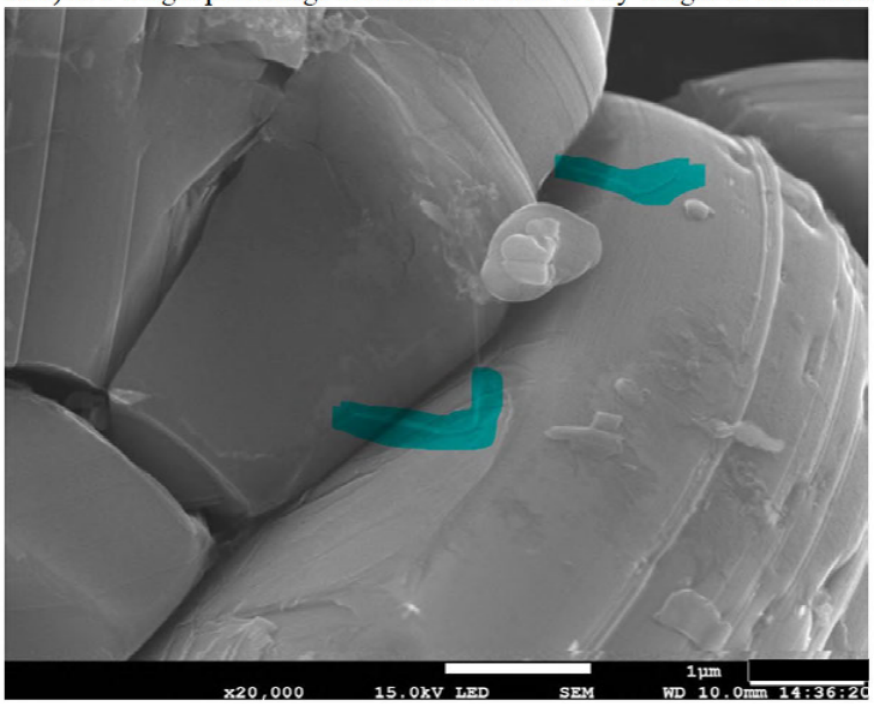
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Claim	Contention
49	As another example, as depicted below, HG6 comprises nanotubes (highlighted in blue) in a weight percentage between 0.1% and 4% by weight of the lithium ion active material: 

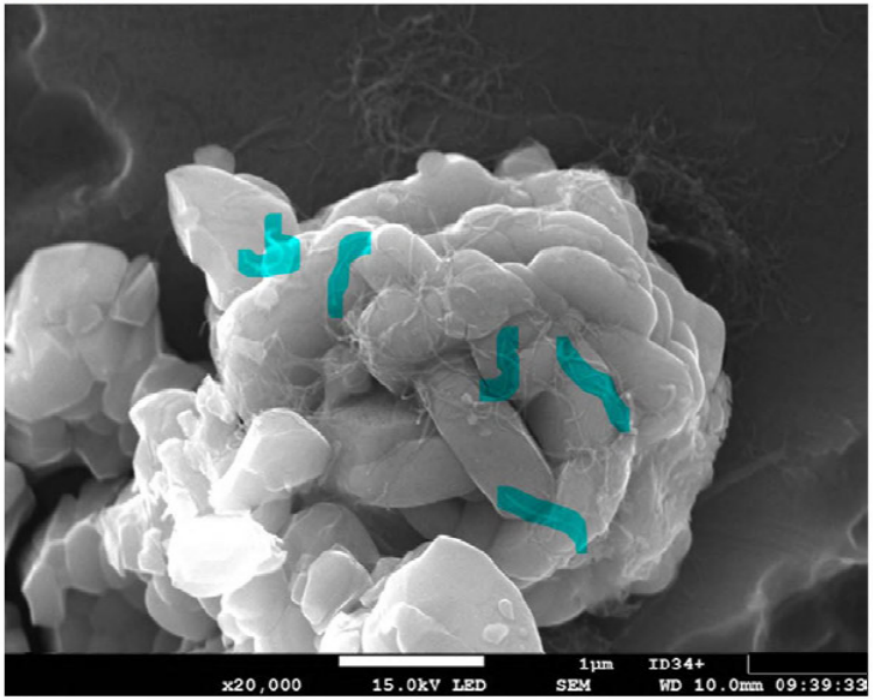
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Claim	Contention
	As another example, as depicted below, MJ1 comprises nanotubes (highlighted in blue) in a weight percentage between 0.1% and 4% by weight of the lithium ion active material: 

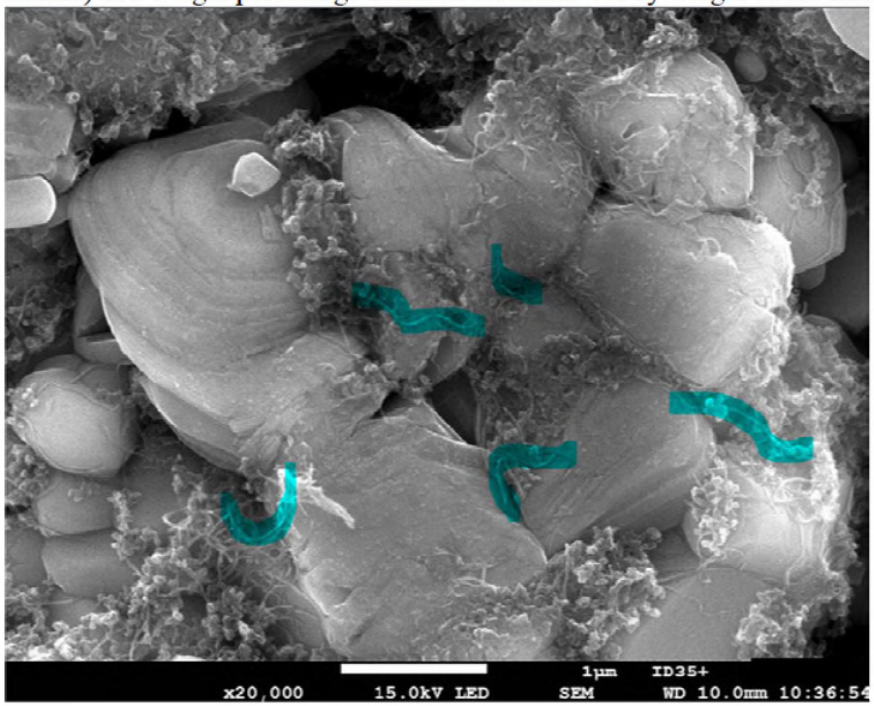
50
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Claim	Contention
	As another example, as depicted below, the LG Gram Battery comprises nanotubes (highlighted in blue) in a weight percentage between 0.1% and 4% by weight of the lithium ion active material: 

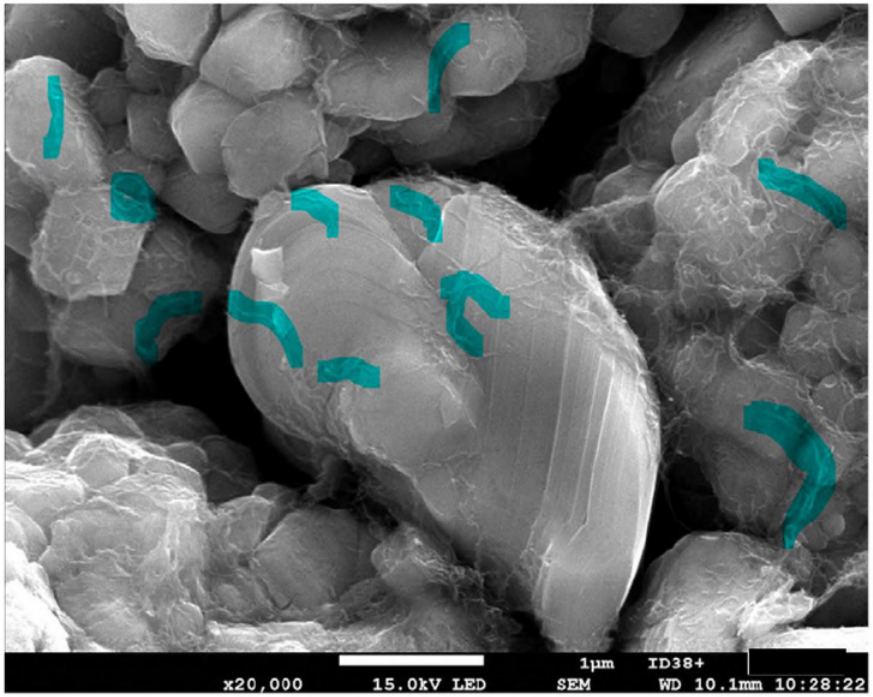
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Claim	Contention
	As another example, as depicted below, the LG E78 eVehicle/ESS Pouch comprises nanotubes (highlighted in blue) in a weight percentage between 0.1% and 4% by weight of the lithium ion active material: 

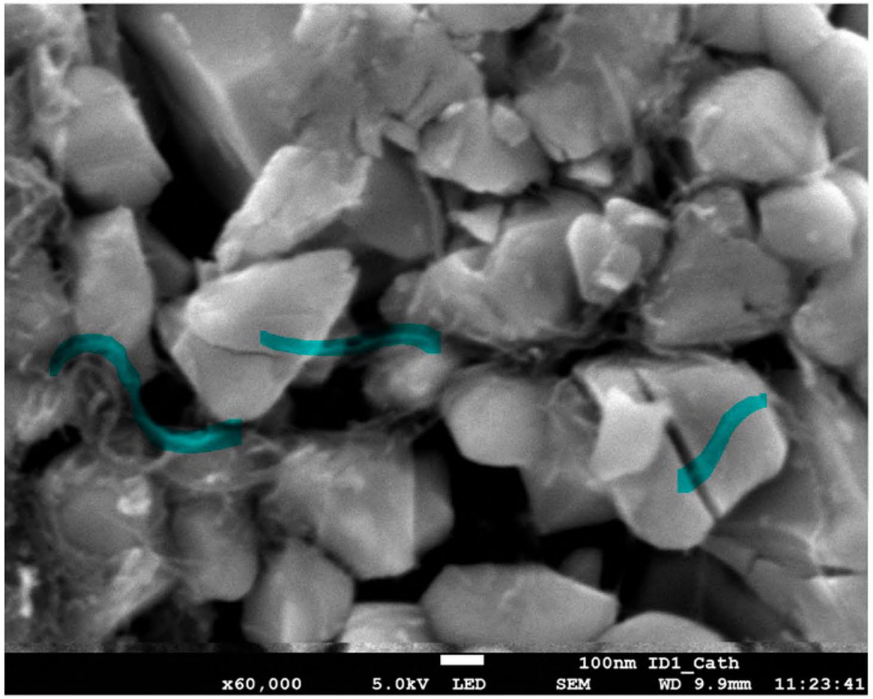
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Claim		Contention
		As another example, as depicted below, the LG Gram Laptop ('19) comprises nanotubes (highlighted in blue) in a weight percentage between 0.1% and 4% by weight of the lithium ion active material: 

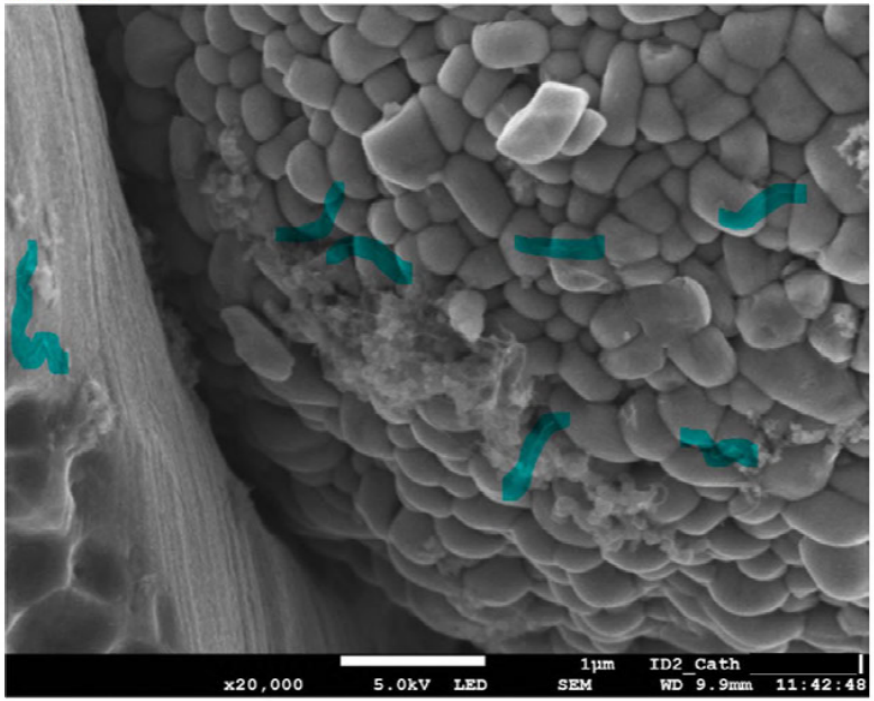
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	Claim	Contention
		As another example, as depicted below, the LG G8 Cellphone Battery ('19) comprises nanotubes (highlighted in blue) in a weight percentage between 0.1% and 4% by weight of the lithium ion active material: 
6	The composition of claim 1, comprising oxidized carbon nanotubes having crystals or layers of lithium ion active materials attached to	This element is met by the '909 Accused Products, each of which comprises "[t]he composition of claim 1, comprising oxidized carbon nanotubes having crystals or layers of lithium ion active materials attached to their surface, wherein the carbon nanotubes are uniformly dispersed without clustering on a dimension scale less than 1 micrometer." As detailed above, each of the '909 Accused Products comprises "[t]he composition of claim 1." Further, as also demonstrated above, each of the '909 Accused Products also comprise a composition

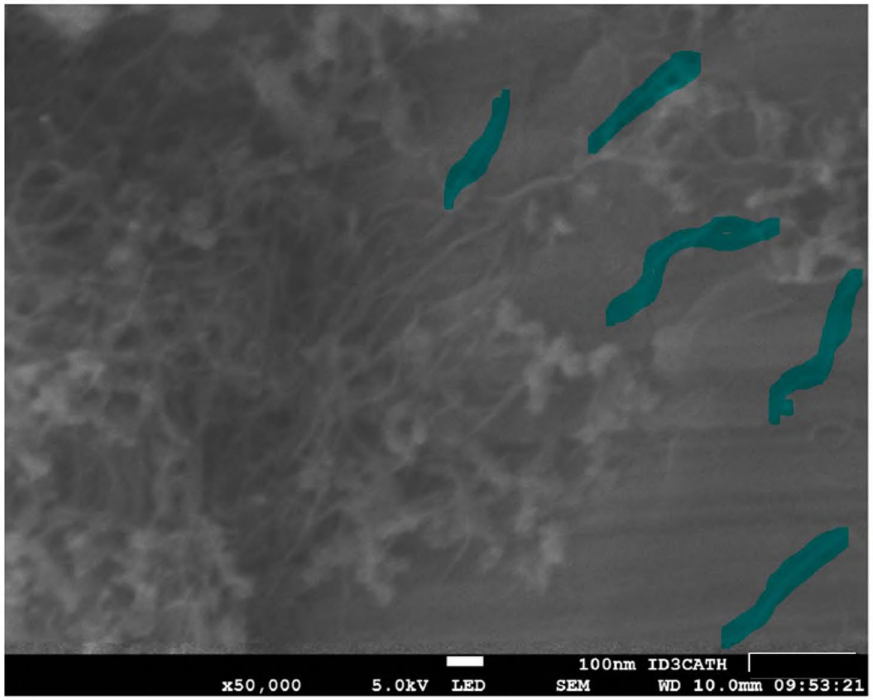
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	Claim	Contention
	their surface, wherein the carbon nanotubes are uniformly dispersed without clustering on a dimension scale less than 1 micrometer.	comprising oxidized carbon nanotubes having crystals of lithium ion active materials attached to their surface. Additionally, as demonstrated at least by portions of the below images highlighted in blue relating to certain representative '909 Accused Products, such carbon nanotubes are uniformly dispersed without clustering on a dimension scale less than 1 micrometer. LG HG2: 

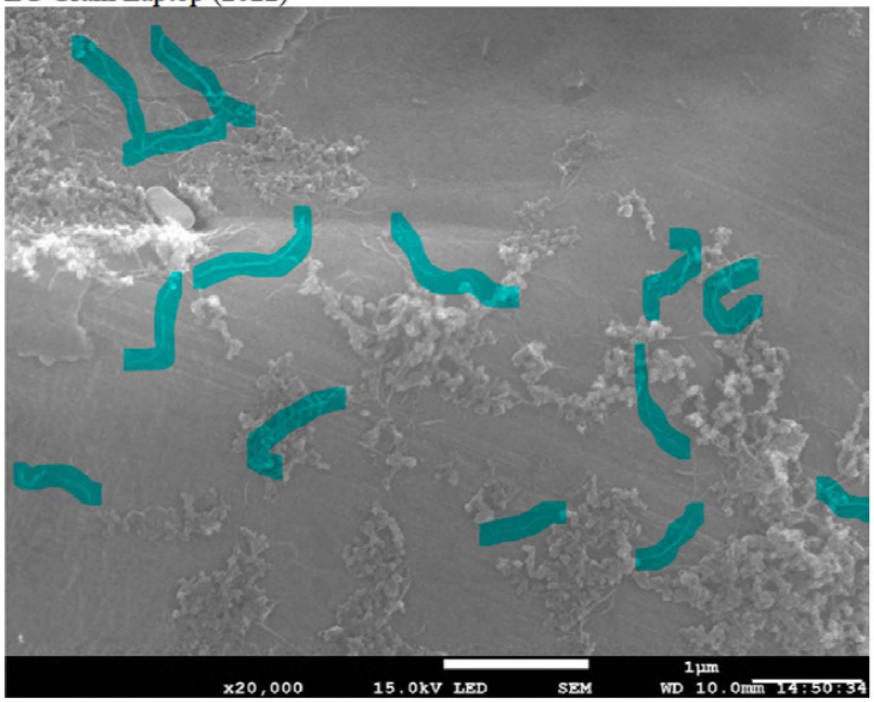
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Claim	Contention
	LG HG6: 

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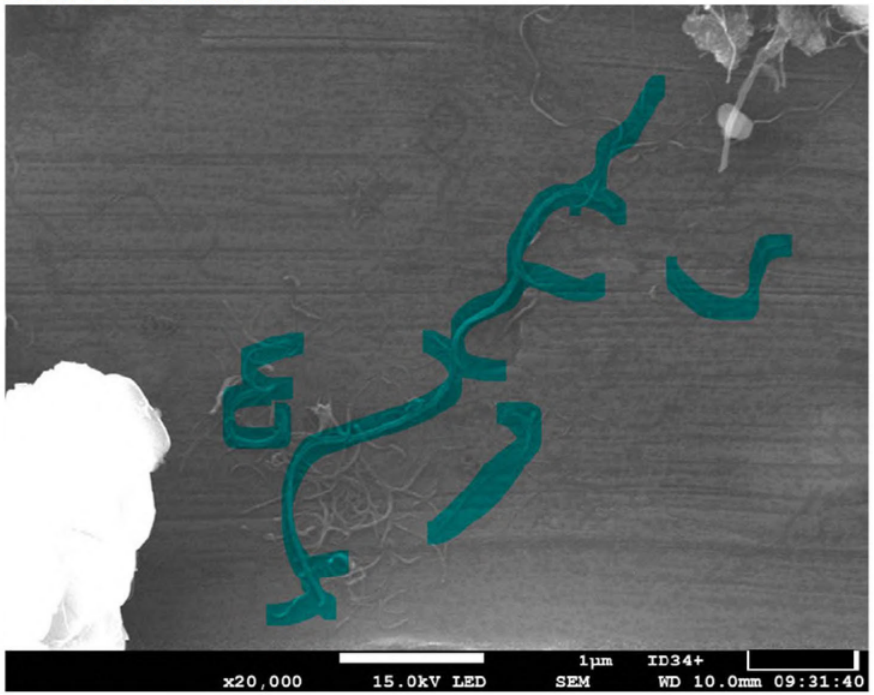
Claim		Contention
		LG MJ1: 

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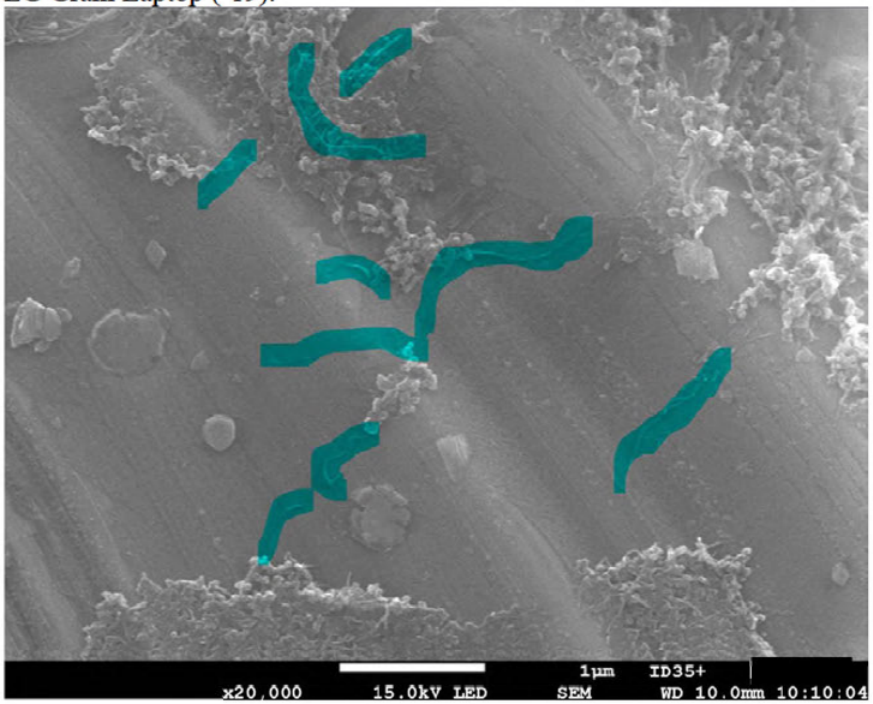
Claim	Contention
	LG Gram Laptop (2022) 

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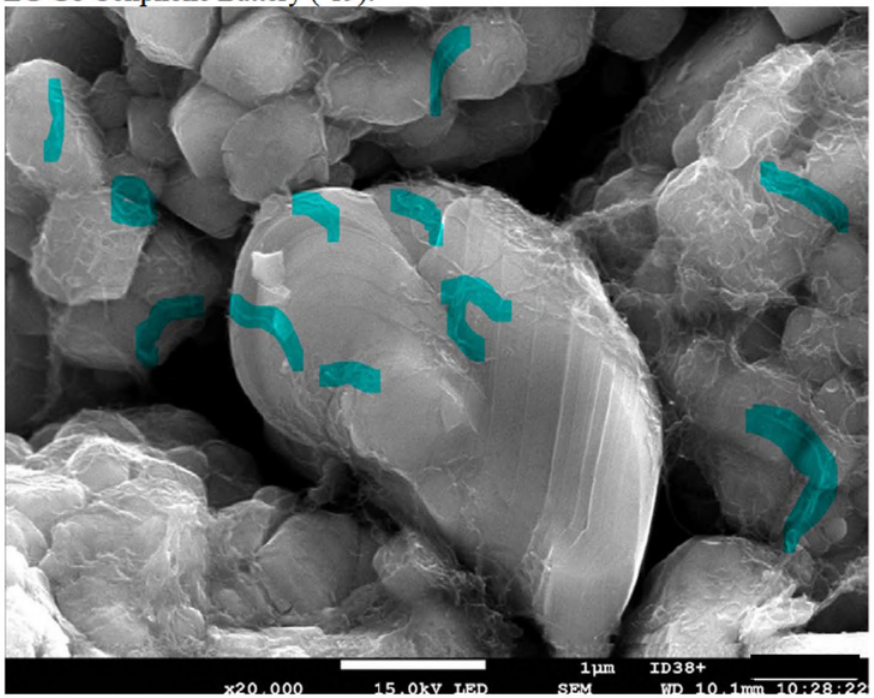
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Claim	Contention
	LG E78 eVehicle/ESS Pouch: 

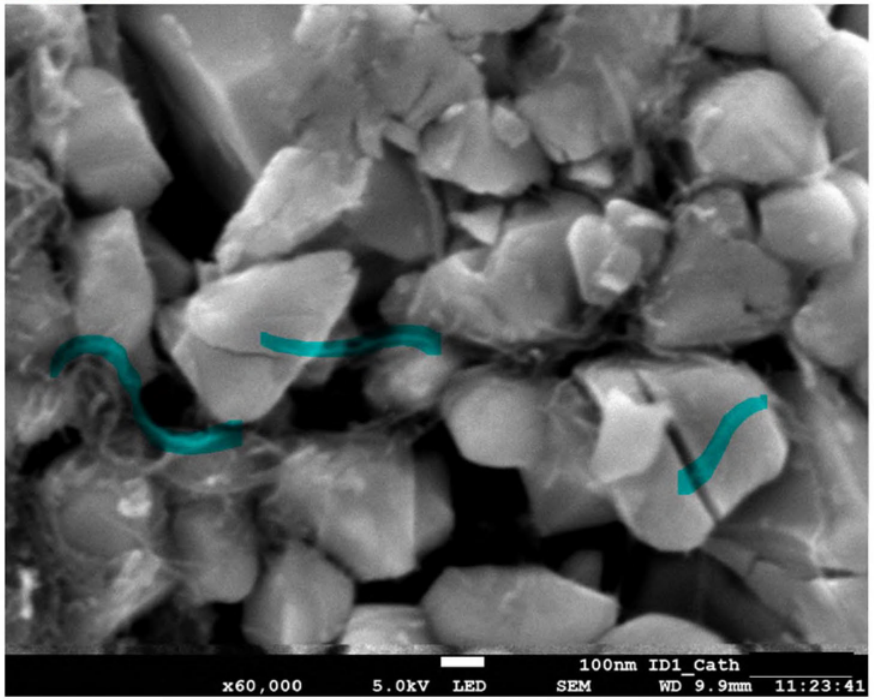
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Claim	Contention
	LG Gram Laptop ('19): 

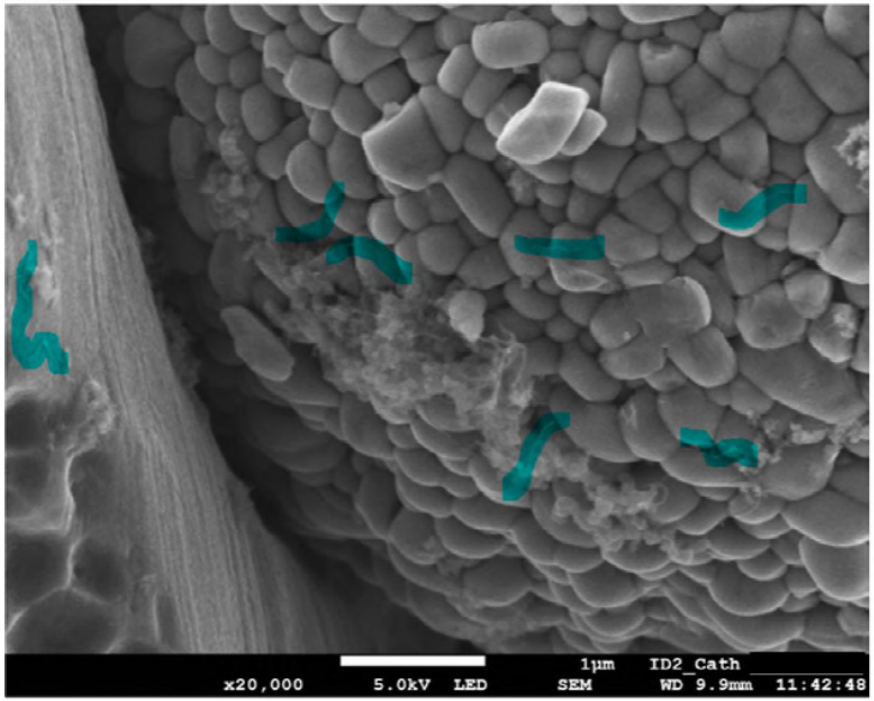
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	Claim	Contention
		LG G8 Cellphone Battery ('19): 
7	The composition of claim 1, comprising uniformly dispersible oxidized carbon nanotubes having crystals or layers of lithium ion active materials attached to their surface.	This element is met by the '909 Accused Products, each of which comprises "[t]he composition of claim 1, comprising uniformly dispersible oxidized carbon nanotubes having crystals or layers of lithium ion active materials attached to their surface." As detailed above, each of the '909 Accused Products comprises "[t]he composition of claim 1." Further, as also demonstrated above, each of the '909 Accused Products also comprises a composition comprising oxidized carbon nanotubes having crystals of lithium ion active materials attached to their surface.

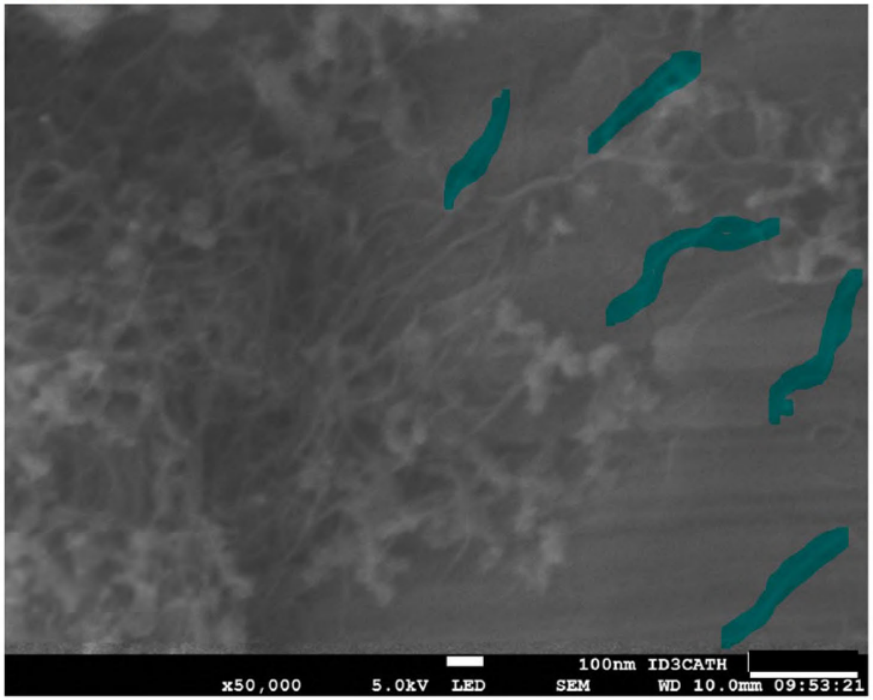
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Claim		Contention
		Additionally, as demonstrated at least by portions of the below images highlighted in blue relating to certain representative '909 Accused Products, such carbon nanotubes are uniformly dispersible. LG HG2: 

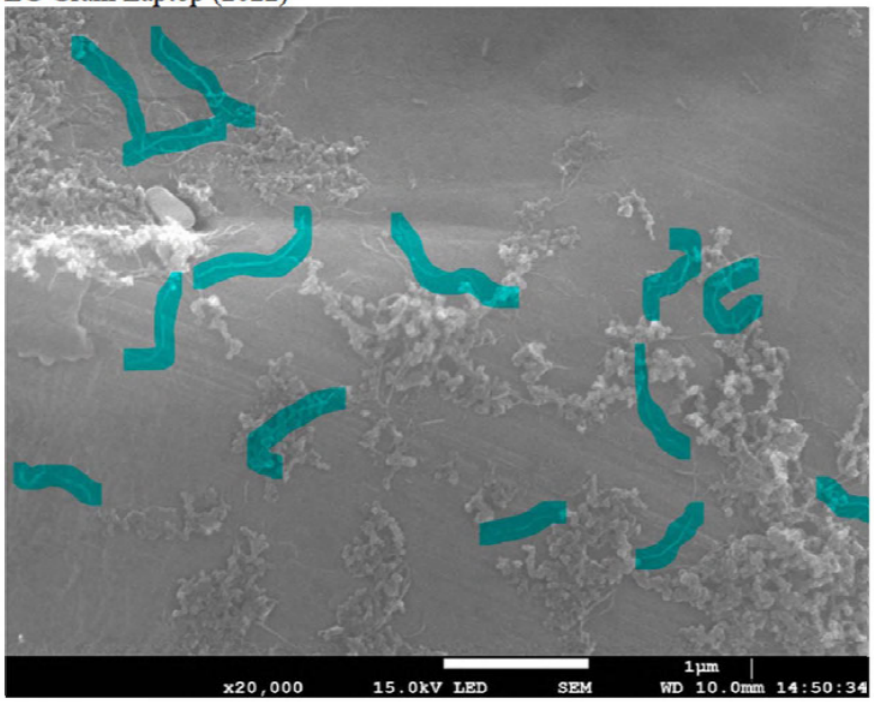
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Claim	Contention
	LG HG6: 

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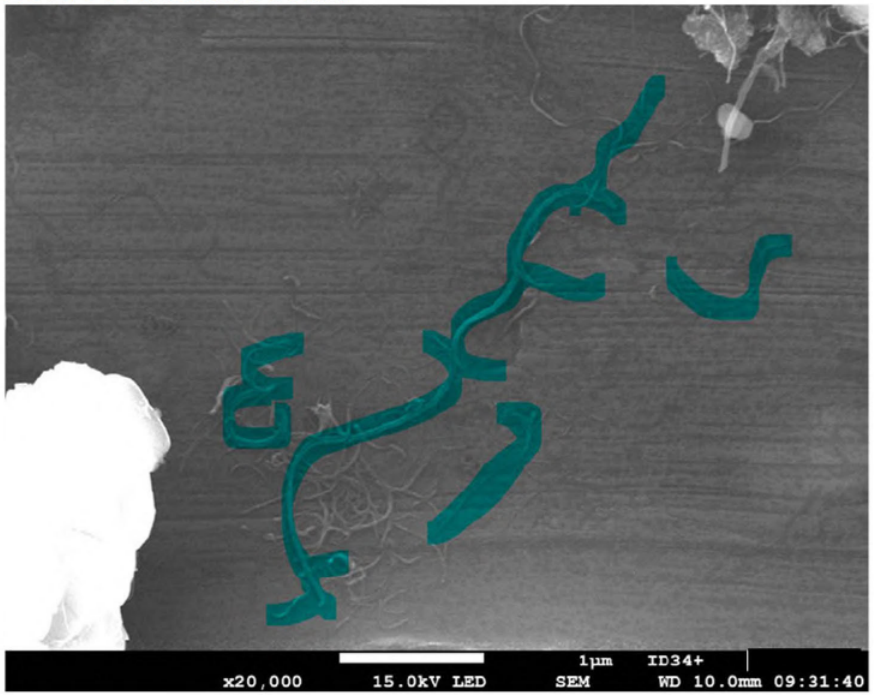
Claim	Contention
	LG MJ1: 

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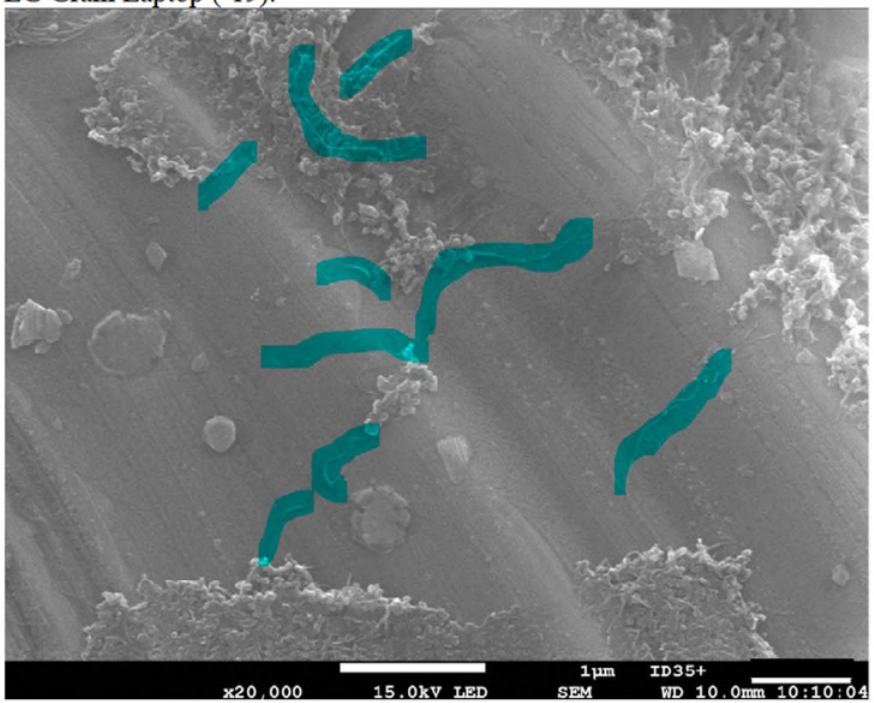
Claim		Contention
		LG Gram Laptop (2022) 

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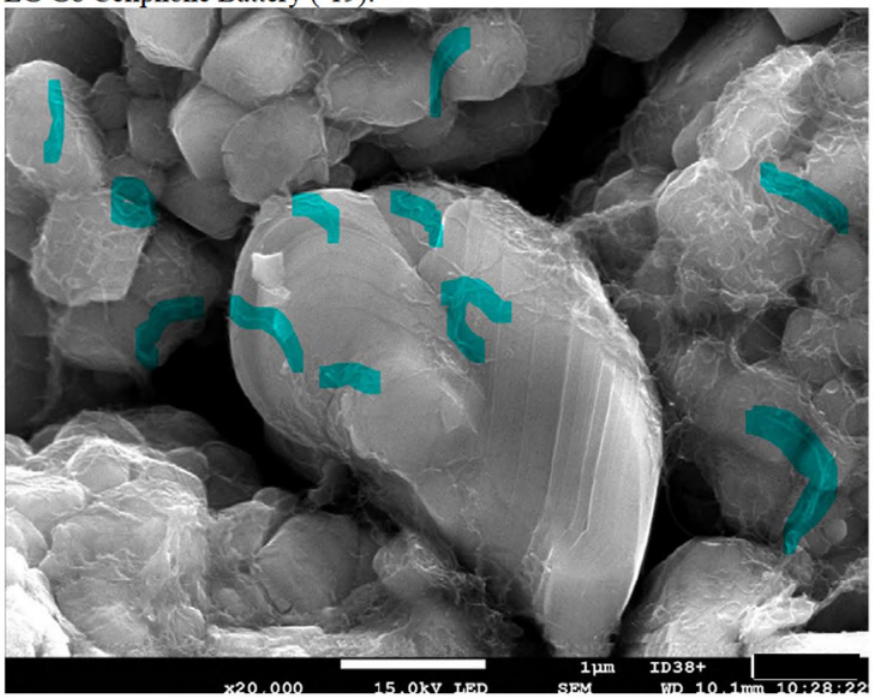
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Claim		Contention
		LG E78 eVehicle/ESS Pouch: 

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Claim	Contention
67	LG Gram Laptop ('19): 

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Claim		Contention
		LG G8 Cellphone Battery ('19): 

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Claim		Contention
8	The composition of claim 7, wherein the crystals or layers of lithium ion active materials are chemically attached to the surface of the dispersible oxidized carbon nanotubes.	This element is met by the '909 Accused Products, each of which comprises "[t]he composition of claim 7, wherein the crystals or layers of lithium ion active materials are chemically attached to the surface of the dispersible oxidized carbon nanotubes." As detailed above, each of the '909 Accused Products comprises "[t]he composition of claim 7." Further, each of the '909 Accused Products comprises a composition wherein the crystals or layers of lithium ion active materials are chemically attached covalently, ionically, or by Van der Waals attractions to the surface of the dispersible oxidized carbon nanotubes.

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