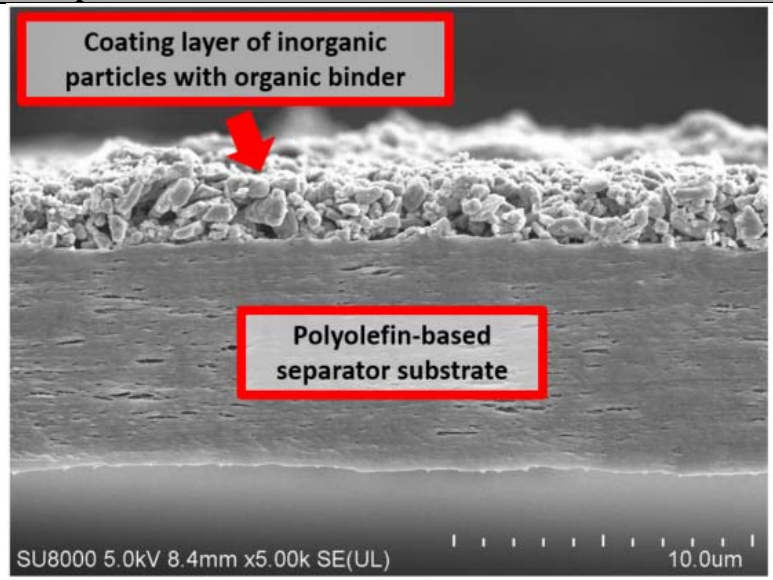
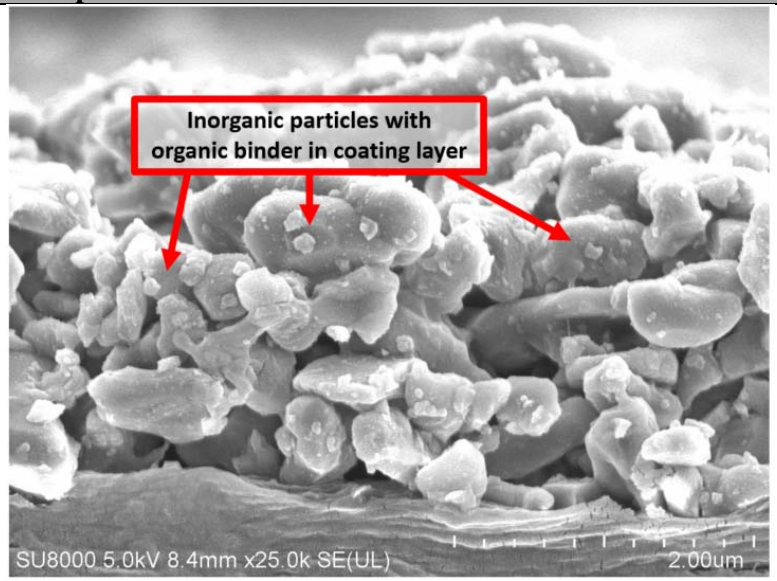
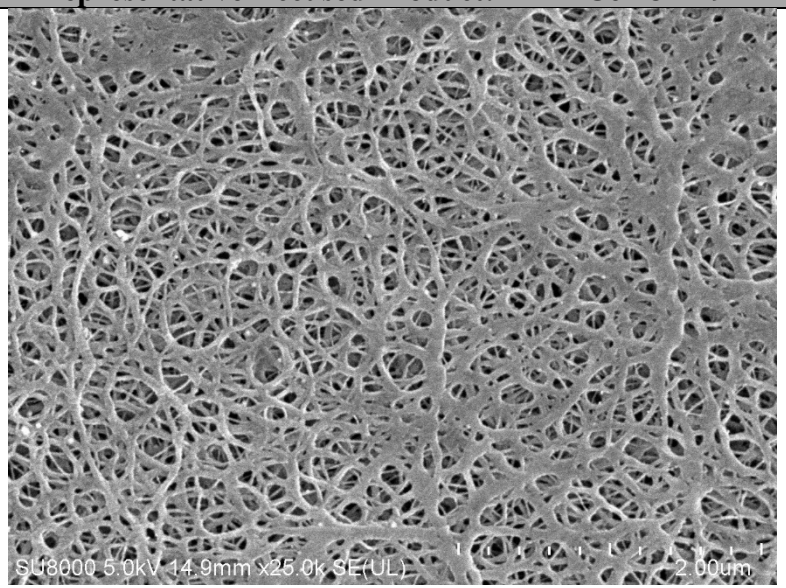
Exhibit 12

Exemplary Infringement Claim Chart for U.S. Pat. No. 7,662,517 – ATL Cell 844297

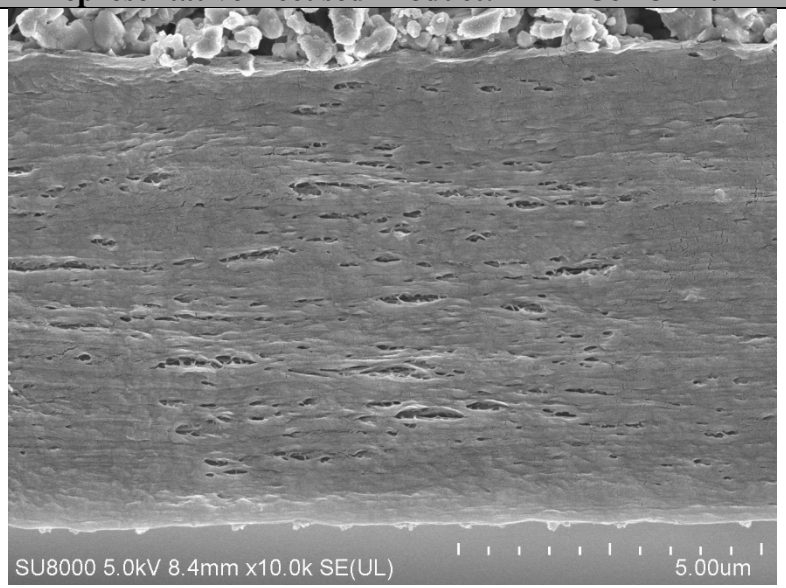
Claim 1	Representative Accused Product: ATL Cell 844297
[1pre] An organic/inorganic composite porous separator, which comprises:	Representative accused products include, but are not limited to, ATL Cell 844297:  Photograph of ATL Cell 844297. Each cell includes an organic/inorganic composite porous separator. For example, as shown in the SEM image below, the ATL Cell 844297 includes a composite porous separator having a coating layer and a polyolefin-based separator substrate:

Claim 1	Representative Accused Product: ATL Cell 844297
	 Cross-section SEM image at x5k. The coating layer, which is made up of inorganic particles and organic binders, is porous:

Claim 1	Representative Accused Product: ATL Cell 844297
	 Cross-section SEM image at x25k. The polyolefin-based substrate is also porous:

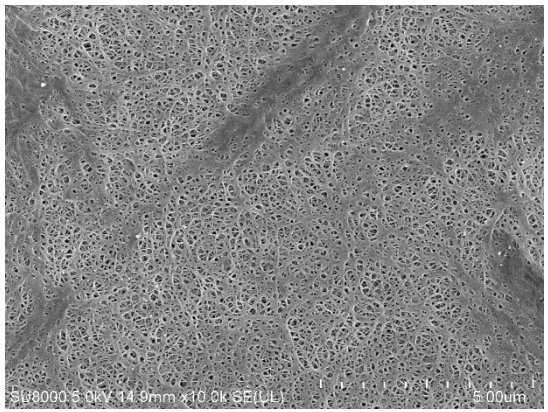
Claim 1	Representative Accused Product: ATL Cell 844297
	 Plan-view SEM image at x25k.
[1a] (a) a polyolefin-based separator substrate; and	Each ATL Cell 844297 includes a polyolefin-based separator substrate. A cross-sectional view of the polyolefin-based separator substrate can be seen below:

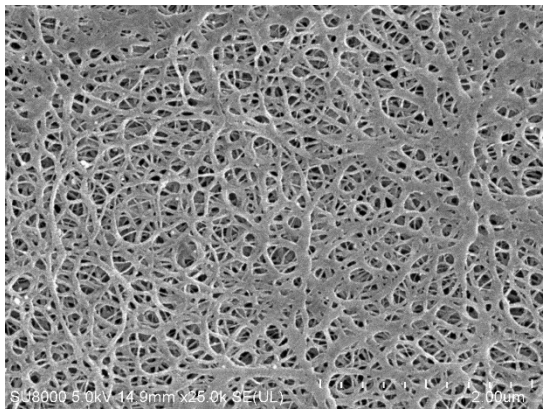
Claim 1	Representative Accused Product: ATL Cell 844297



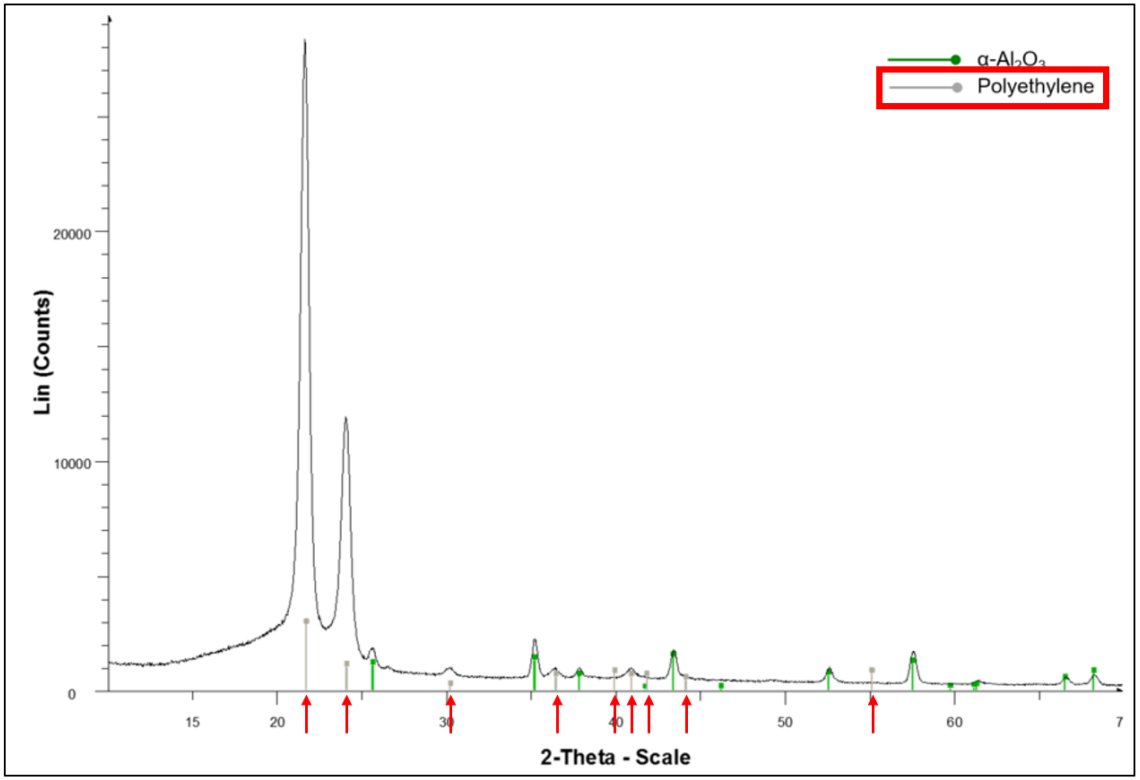
Cross-section SEM image at x10k.

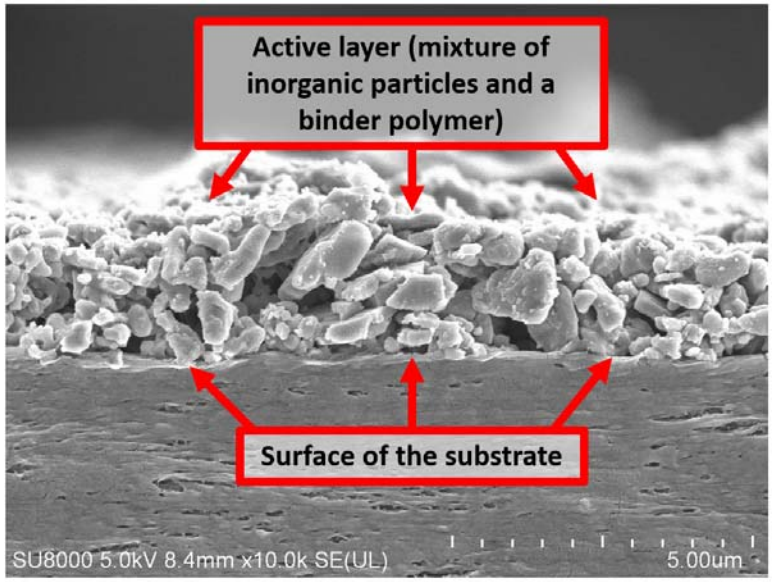
Plan views of the polyolefin-based separator substrate can be seen below:

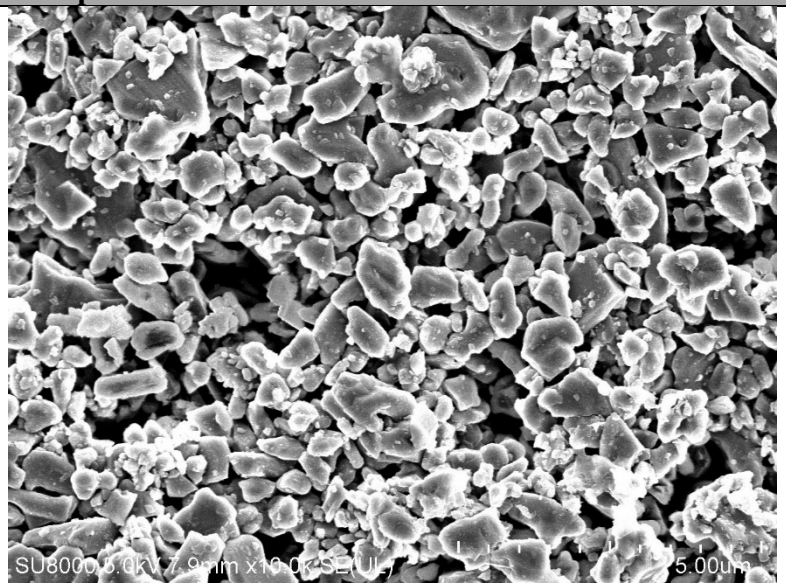


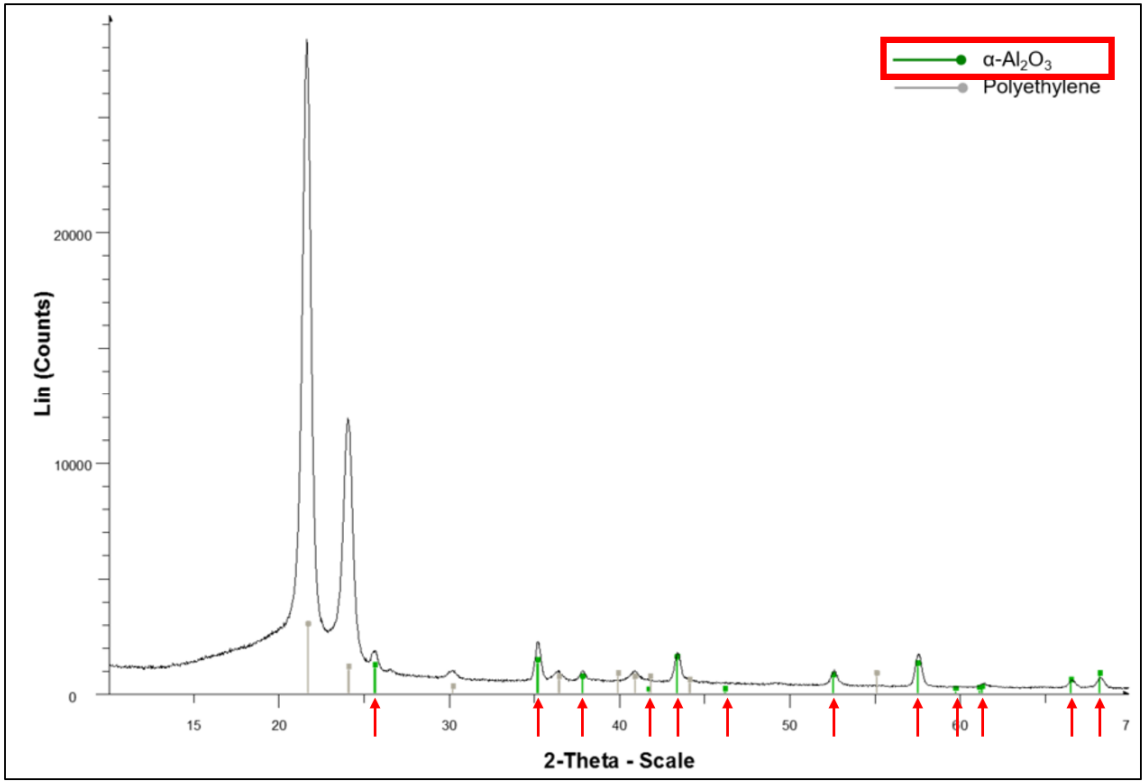


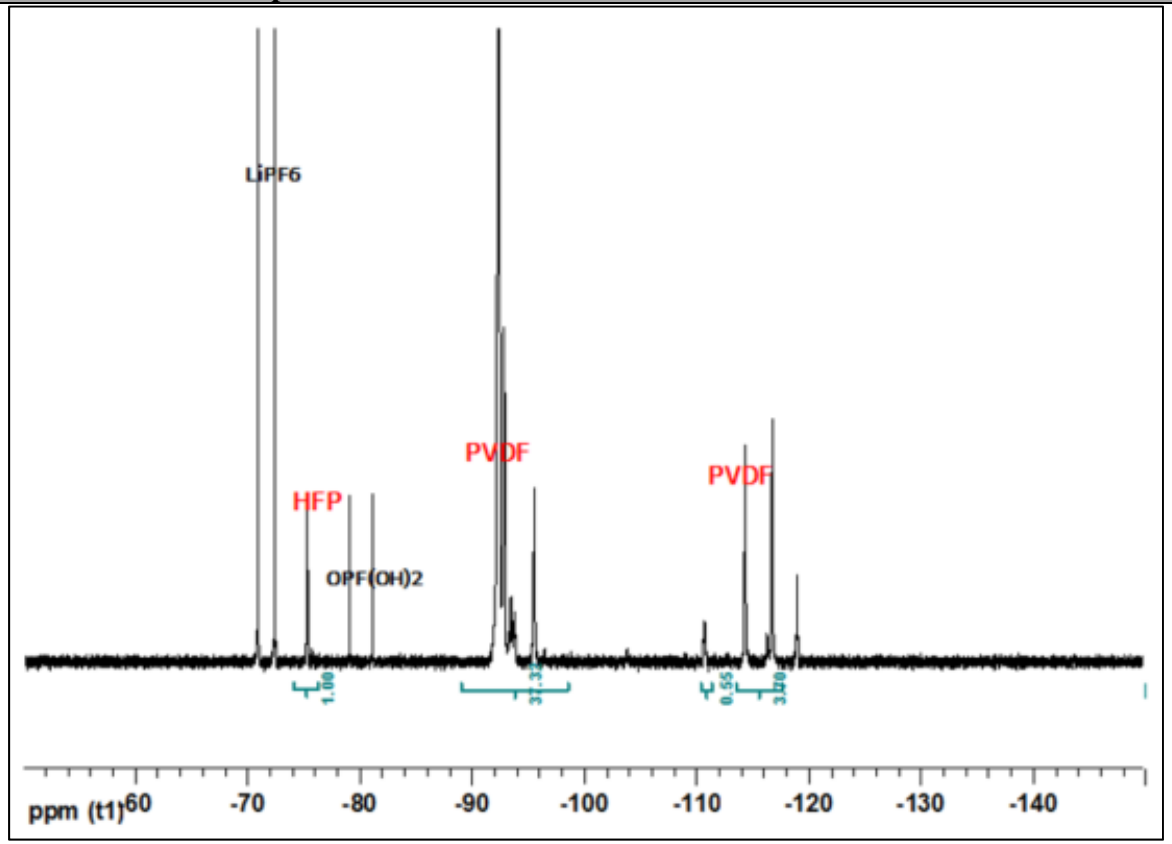
Plan-view SEM images at x10k and x25k, respectively.

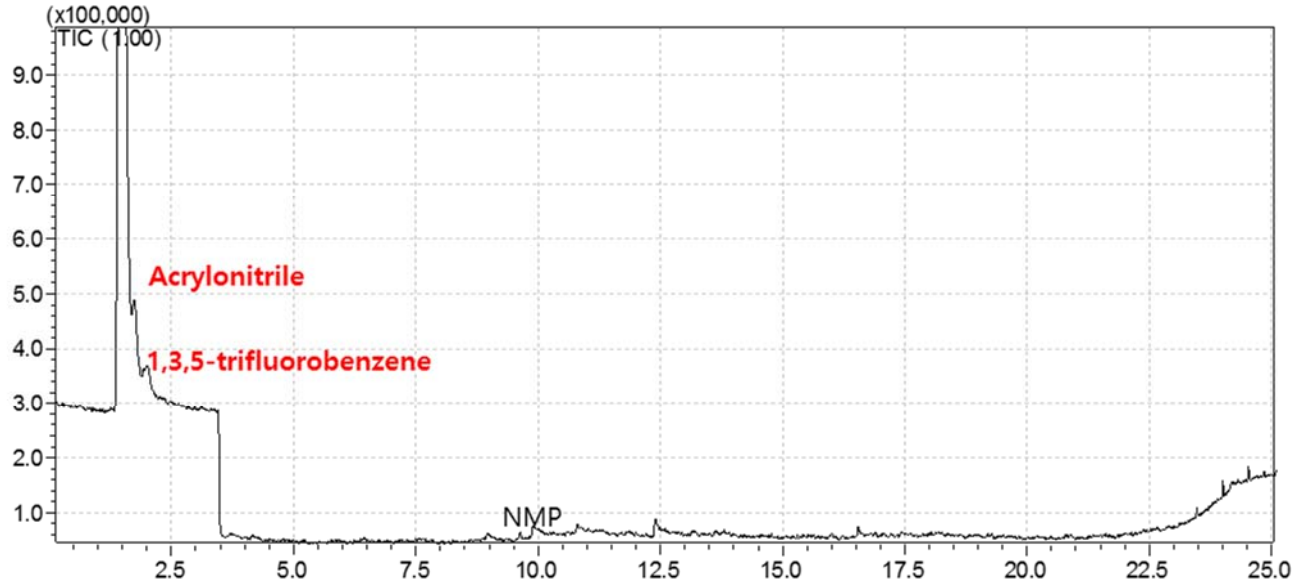
Claim 1	Representative Accused Product: ATL Cell 844297
	As demonstrated by XRD results shown below, the composite porous separator includes α-Al_2O_3 and polyethylene:  XRD analysis of composite porous separator. In the XRD results above, ***polyethylene*** corresponds to material in the separator substrate of the ATL Cell 844297. Polyethylene is a type of polyolefin.
[1b] (b) an active layer formed by coating at least	Each ATL Cell 844297 includes an active layer formed by coating at least one region selected from the group consisting of a surface of the substrate and a part of pores present in the substrate with a mixture of inorganic particles and a binder polymer.

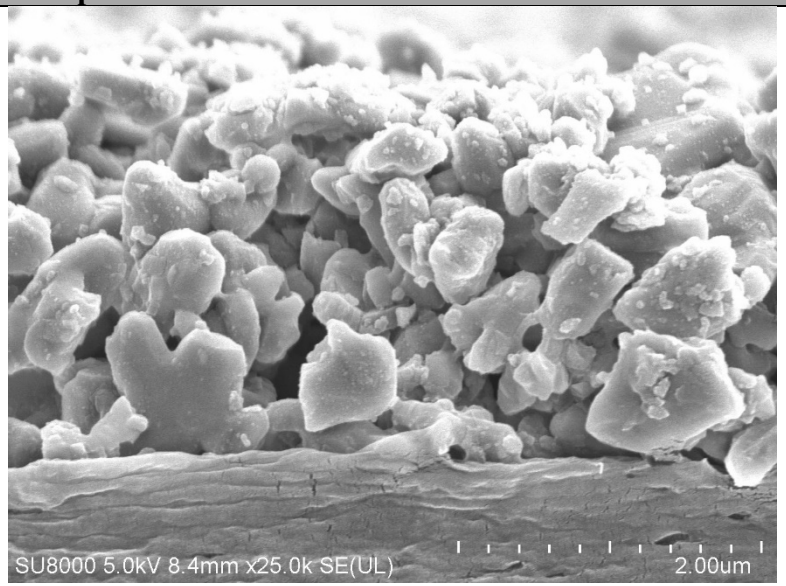
Claim 1	Representative Accused Product: ATL Cell 844297
one region selected from the group consisting of a surface of the substrate and a part of pores present in the substrate with a mixture of inorganic particles and a binder polymer,	For example, as shown in the SEM image below, the surface of the substrate is coated with an active layer that includes a mixture of inorganic particles and a binder polymer:  Cross-section SEM image at x10k. The mixture of inorganic particles and binder polymer that makes up the active layer can be further seen in the SEM image below:

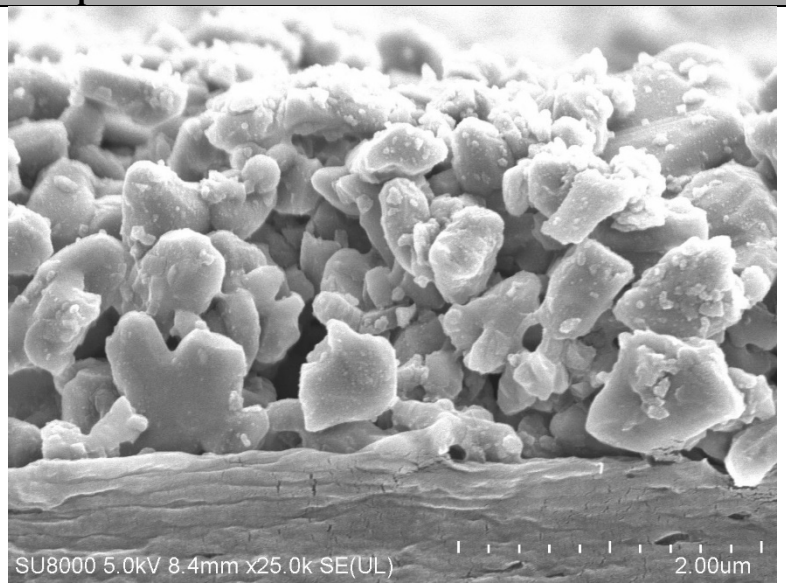
Claim 1	Representative Accused Product: ATL Cell 844297
	 Plan-view SEM image at x10k. As demonstrated by XRD results shown below, the active layer includes inorganic particles including at least α-Al_2O_3 (aluminum oxide):

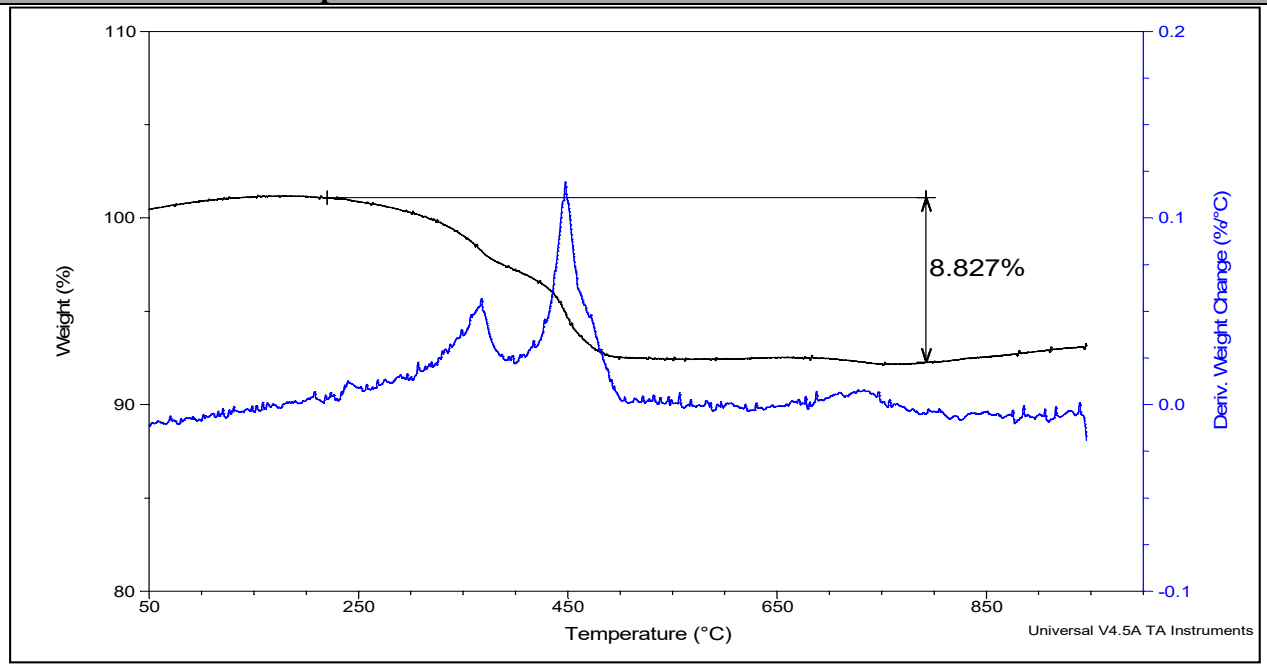
Claim 1	Representative Accused Product: ATL Cell 844297
	 XRD analysis of composite porous separator. As shown below, F-NMR analysis of the binder polymer in the active layer shows components corresponding to at least PVDF-HFP (polyvinylidene fluoride-co-hexafluoropropylene):

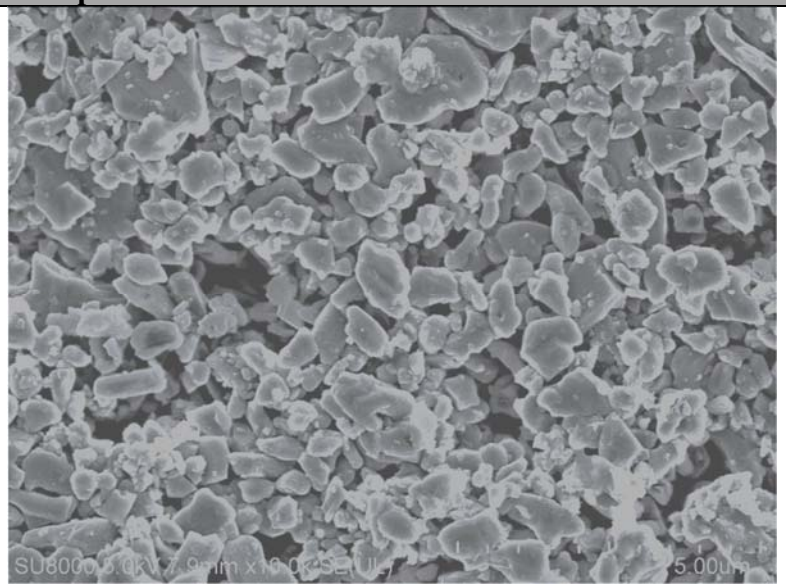
Claim 1	Representative Accused Product: ATL Cell 844297
	 F-NMR analysis of binder polymer.

Claim 1	Representative Accused Product: ATL Cell 844297
	As shown below, PGC analysis of the binder polymer in the active layer shows components corresponding to at least PAN (Polyacrylonitrile):  PGC analysis of binder polymer
[1c] wherein the inorganic particles in the active layer are interconnected among themselves and are fixed by the binder polymer, and interstitial volumes among	For each ATL Cell 844297, the inorganic particles in the active layer are interconnected among themselves and are fixed by the binder polymer, and interstitial volumes among the inorganic particles form a pore structure. As shown in the SEM image below, the active layer in the accused ATL Cell 844297 includes inorganic particles that are interconnected among themselves and fixed by the binder polymer, and interstitial volumes among the inorganic particles form a pore structure:

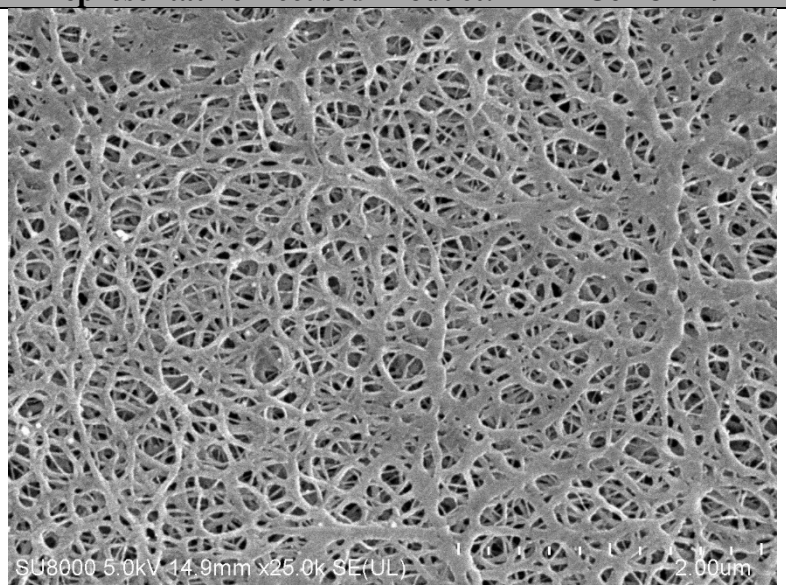
Claim 1	Representative Accused Product: ATL Cell 844297
the inorganic particles form a pore structure, and	 Cross-section SEM image at x25k. As discussed above for limitation [1b], the active layer includes inorganic particles that are held together by binder polymer including PAN and PVDF-HFP.
[1d] the inorganic particles have a size between 0.001 μm and 10 μm and are present in the mixture of inorganic particles with the binder polymer in an amount of 50-99 wt % based on	Each ATL Cell 844297 includes an inorganic particles that have a size between 0.001 μm and 10 μm, and that are present in the mixture of inorganic particles with the binder polymer in an amount of 50-99 wt % based on 100 wt % of the mixture. As indicated in the SEM image below, the inorganic particles have a size between 0.001 μm and 10 μm:

Claim 1	Representative Accused Product: ATL Cell 844297
100 wt % of the mixture, and	 Cross-sectional SEM image at x25k. According to the TGA results below, the inorganic particles in the mixture of inorganic particles with the binder polymer have a wt % of 92.1 ± 1.6:

Claim 1	Representative Accused Product: ATL Cell 844297
	 TGA analysis of mixture of inorganic particles and binder polymer.
[1e] wherein the separator has uniform pore structures both in the active layer and the polyolefin-based separator substrate.	The separator in the ATL Cell 844297 has uniform pore structures both in the active layer and the polyolefin-based separator substrate. The presence of uniform pores structures can be demonstrated via SEM images and various analytical tools such as C-rate characteristics, porosimetry measurements, etc. For example, as shown in the SEM image below, the active layer exhibits uniform pore structures:

Claim 1	Representative Accused Product: ATL Cell 844297
	 Plan-view SEM image at x10k. For example, as shown in the SEM image below, the polyolefin-based separator substrate exhibits uniform pore structures:

Claim 1	Representative Accused Product: ATL Cell 844297



Plan-view SEM image at x25k.

For example, as shown by analyzing the C-rate characteristics and air permeability, the separator of the ATL Cell 844297 has uniform pore structures both in the active layer and the polyolefin-based separator substrate.

The presence of uniform pore structures both in the active layer and the polyolefin-based separator substrate of the ATL Cell 844297 is demonstrated by observing the cell's C-rate characteristics. For example, as shown in the table below, the marginal drop in capacity at higher discharge rates indicates uniform pore structures both in the active layer and the polyolefin-based separator substrate.

Discharge Rate	Capacity (mAh)	% of Capacity (vs. 0.5C Capacity)

<table>
<tr><th>Claim 1</th><th>Representative Accused Product: ATL Cell 844297</th></tr>
<tr><td></td><td>
<table>
<tr><td>0.5C</td><td>4432</td><td>100.00</td></tr>
<tr><td>1.0C</td><td>4415</td><td>99.61</td></tr>
<tr><td>2.0C</td><td>4396</td><td>99.17</td></tr>
</table>

The presence of uniform pore structures in the ATL Cell 844297 is demonstrated by observing the separator’s air permeability characteristic. For example, multiple air permeability measurements taken at different locations of the separator showed an average Gurley value of 111 s/100cc with a standard deviation of 5.6 s/100c, which is indicative of uniform air permeability across the surface of the separator.
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