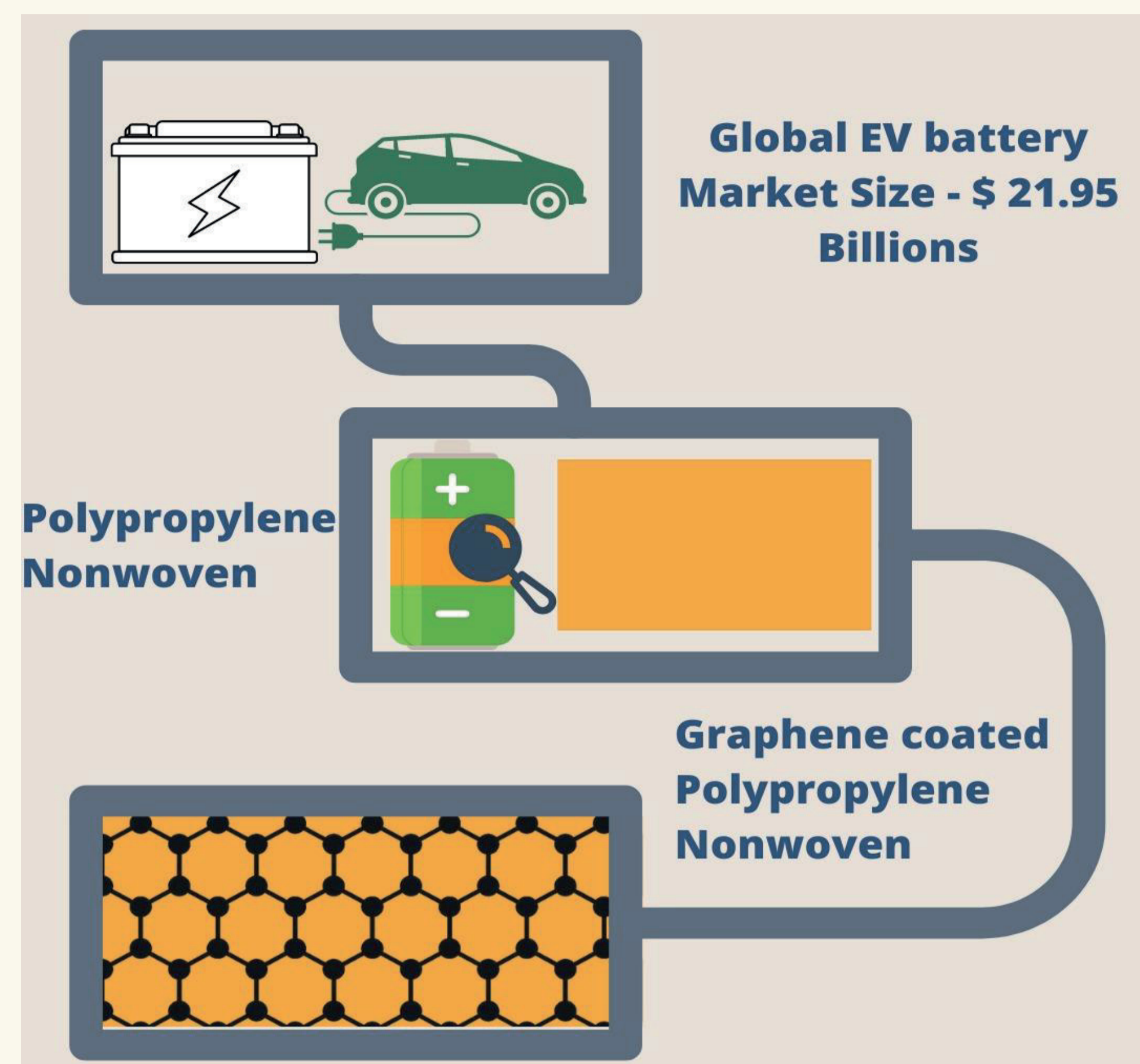


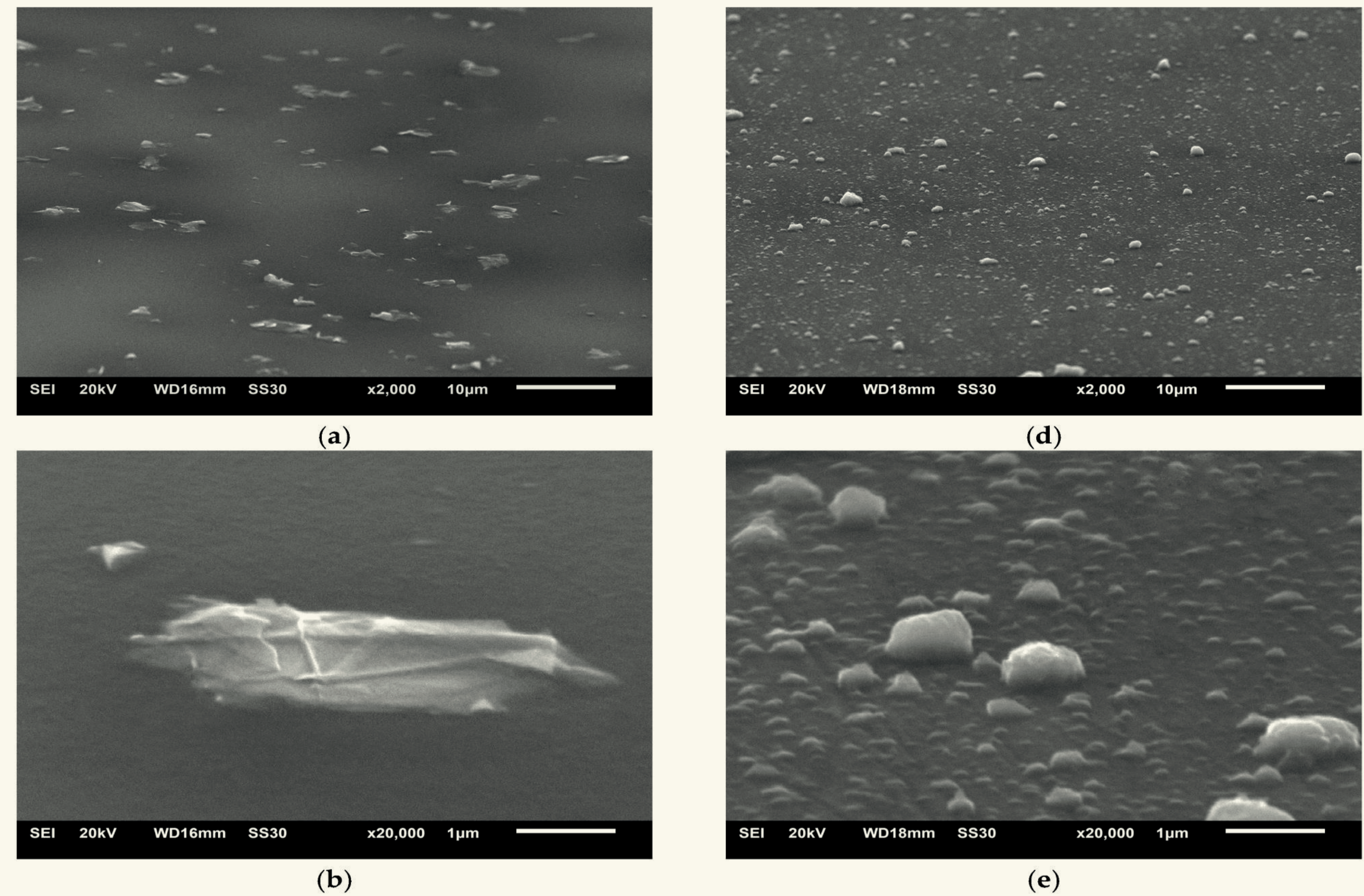
Introduction

EV Batteries are gold mines for manufacturers, but the world still lacks in battery performance and thermal stability. Now imagine a battery without such limitations, better performance, and better thermal stability, it can be done by changing the battery separator to the following type of separator.

Preparation Method



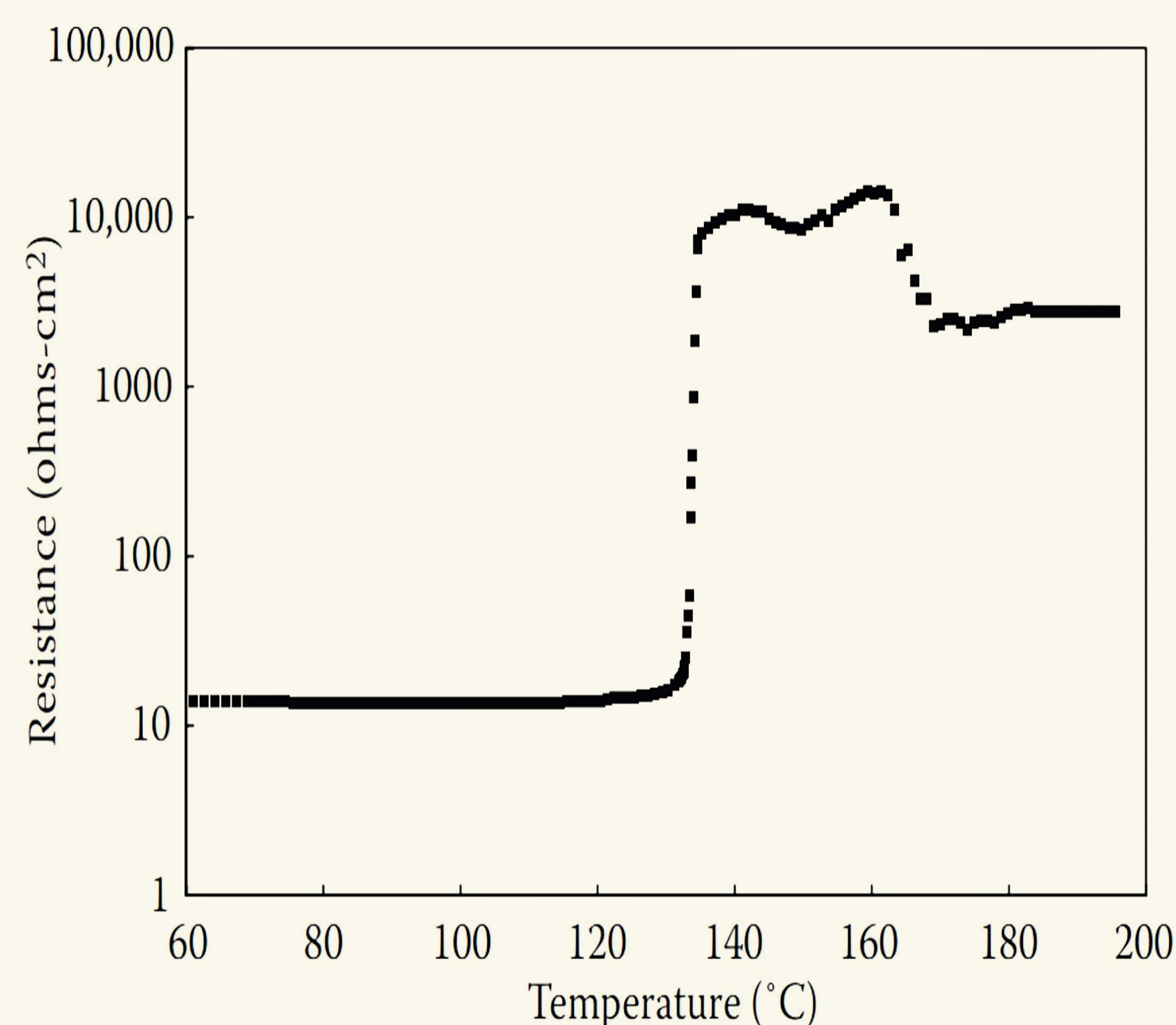
SEM Image of coating Graphene in PP Nonwoven.



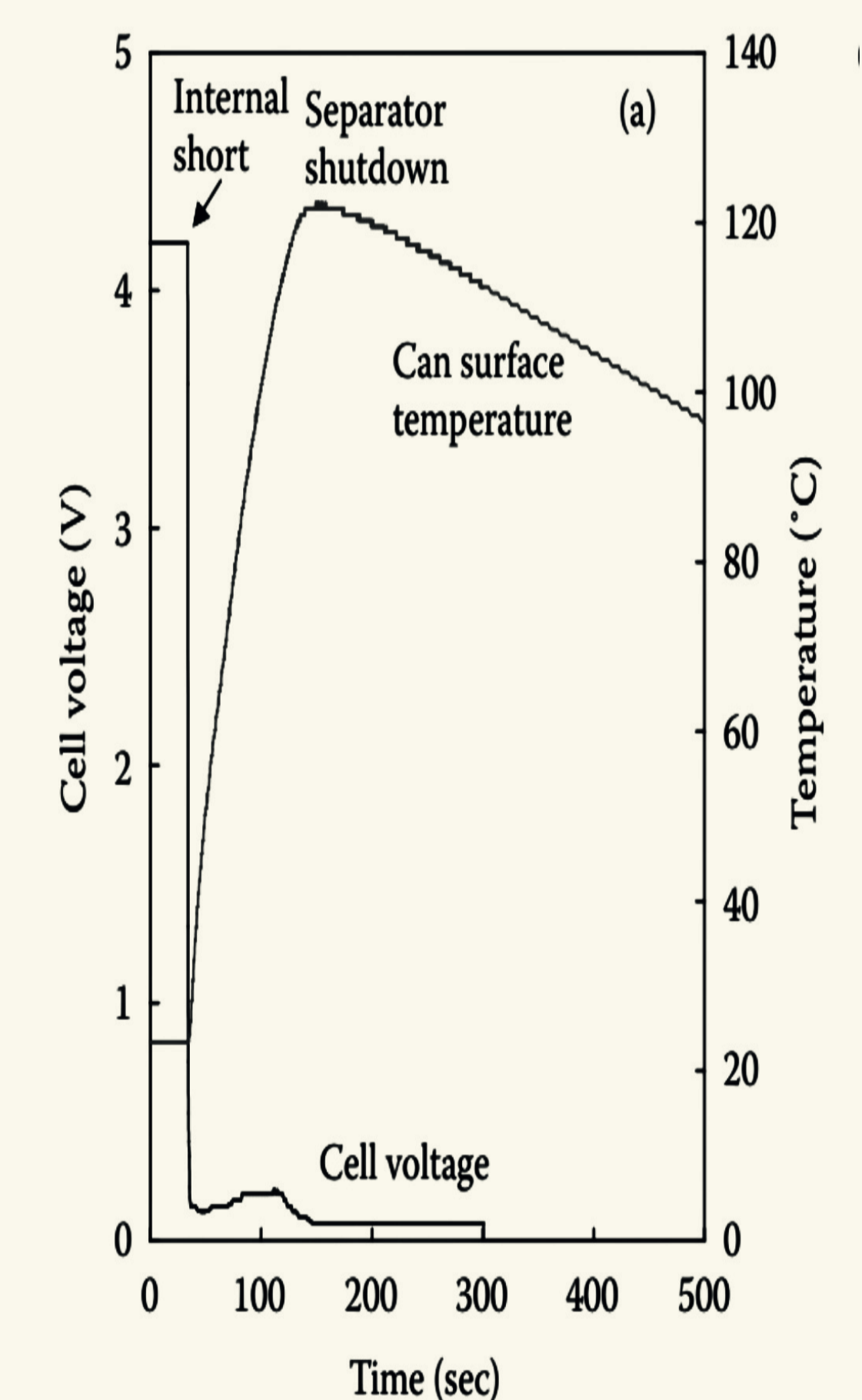
Specification

Thickness (μm)	28
Pore Size (μm)	1.3
Porosity (%)	43
Puncture Strength (g)	290 g/mil
Shrinkage (%)	6% MD 7% TD
Shutdown temperature ($^{\circ}\text{C}$)	134
Wettability	Complete wet out in typical battery electrolytes
Chemical stability	Stable
Dimensional stability	Stable

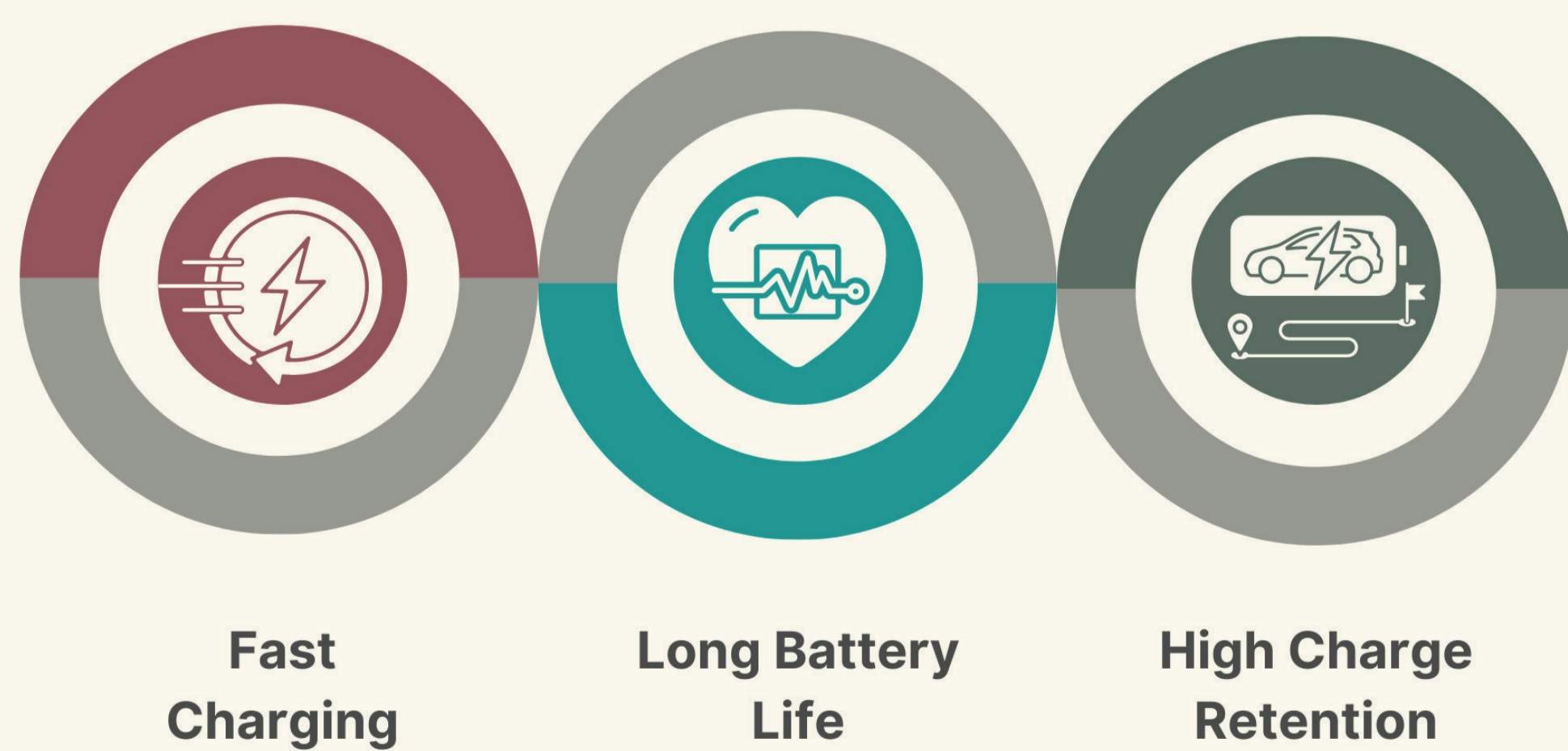
Shutdown Behaviour



Nail Penetration Behaviour



Benefits



Summary

- From shutdown behaviour, the separator exhibited **low discharge rate capability** as a result of the significant occlusion of the pores arising from the graphene coating, consequently enhancing battery performance.
- As the nail penetrated and the temperature grew, the voltage dropped from 4.2 to 0.0 V in an instant. **When the heating rate is modest, the cell stops heating when the temperature approaches the separator shutdown.**

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