

Company Name: W-Scope Corporation  
 Stock Exchange Listing: Tokyo Stock Exchange Section I  
 Representative: Won-Kun Choi, President & CEO  
 Contact: Hideo Ouchi, Director of Corporate Strategy & Planning  
 TEL: +81-(0)3-5436-7155

## Development of High-Performance Separator

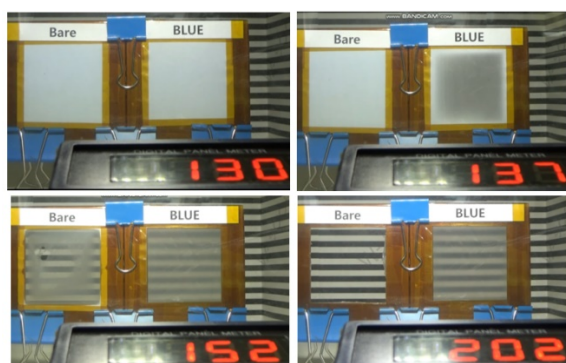
### Update on New Product Development

Lithium ion battery used in electric vehicles and high-performance consumer appliances nowadays have higher capacity, which requires longer-lasting power with single charging. At the same time, safety feature against ignition and explosion due to battery's higher capacity has become paramount importance. Separator plays a key role to satisfy both high capacity and safety requirements of a lithium ion battery. Separator enhances high capacity element of a battery as well as controls the safety element. W-Scope successfully developed a separator that reduces internal resistance by 20% while greatly enhances the heat resistant property for safety.

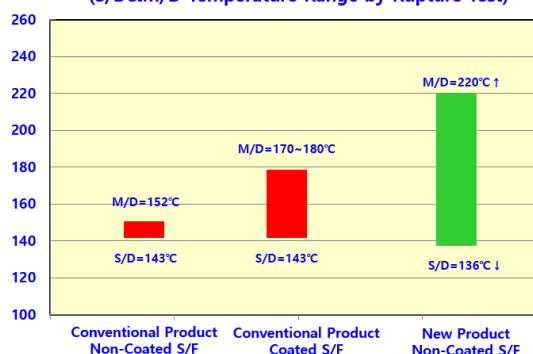
### The product characteristics (without coating)

A separator has shut-down function when battery temperature surges to certain point. The new separator has lower shut down (S/D) point (7°C lower than existing ones). At the same time, melt down (M/D) starts only after the battery temperature surges above 200°C. The new separator can be manufactured at our existing production facilities.

Please refer to a video of heat resistance experiment of the new non-coated separator on our homepage (<https://w-scope.co.jp/ir/pdf/Rupture.mp4>).



(S/D&M/D Temperature Range by Rupture Test)



### Sales estimate

The new separator has already been granted a patent. Some battery makers have already commenced sample testing at their facilities. Planned start of volume production and sales for consumer electric appliances is expected in 2020, followed by the automotive application in 2021.