

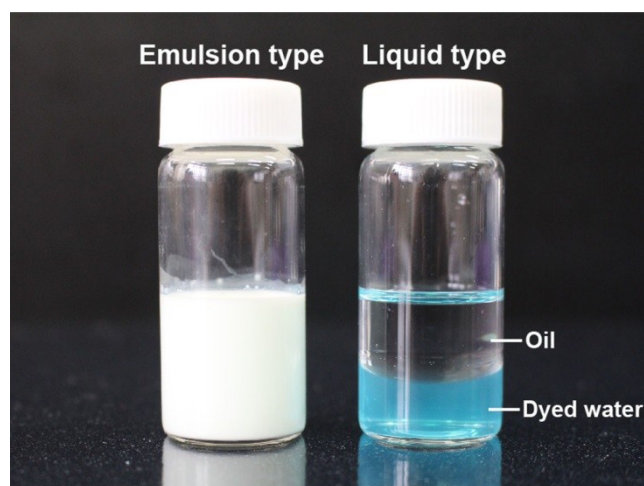
## Electronic Supplementary Information

# Enhanced Moisture Repulsion of Ceramic-coated separators from Aqueous Composite Coating Solution for Lithium-Ion Batteries Inspired by surface of Plant Leaf

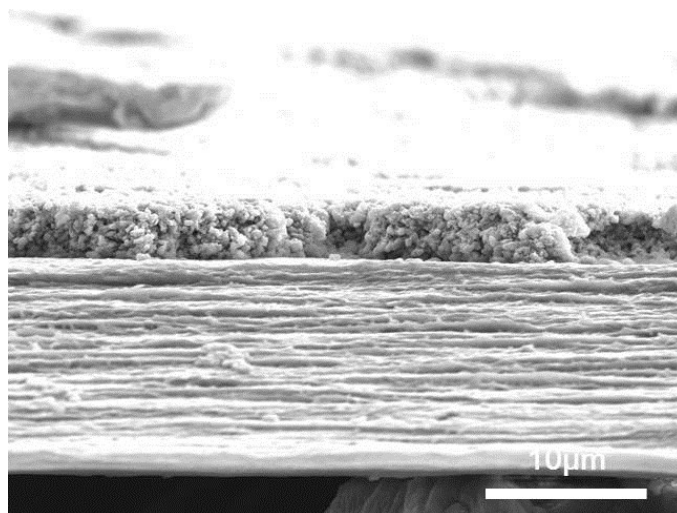
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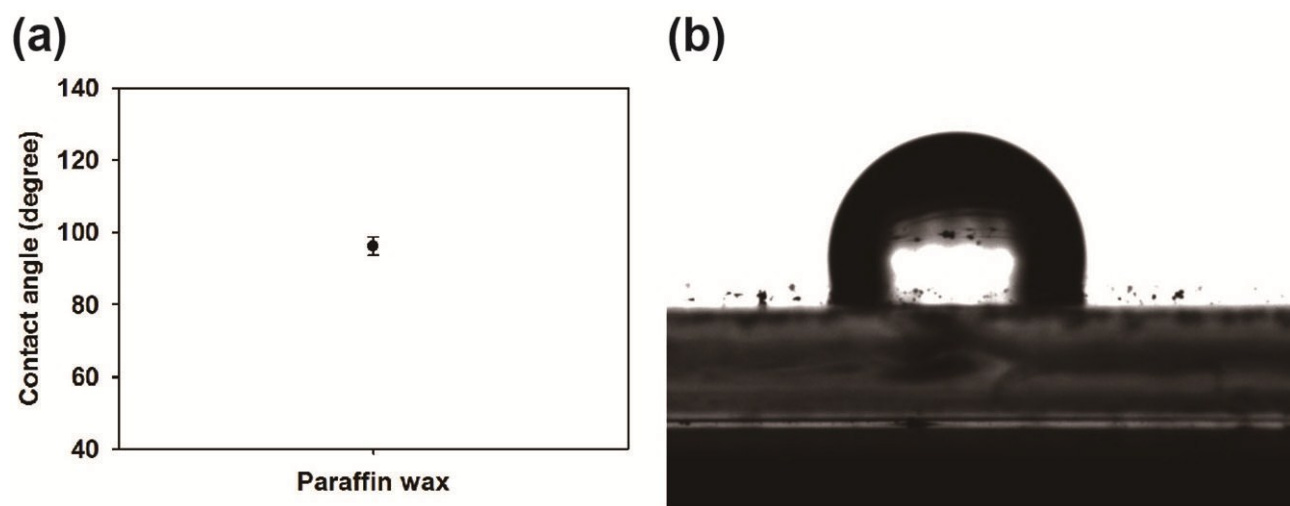
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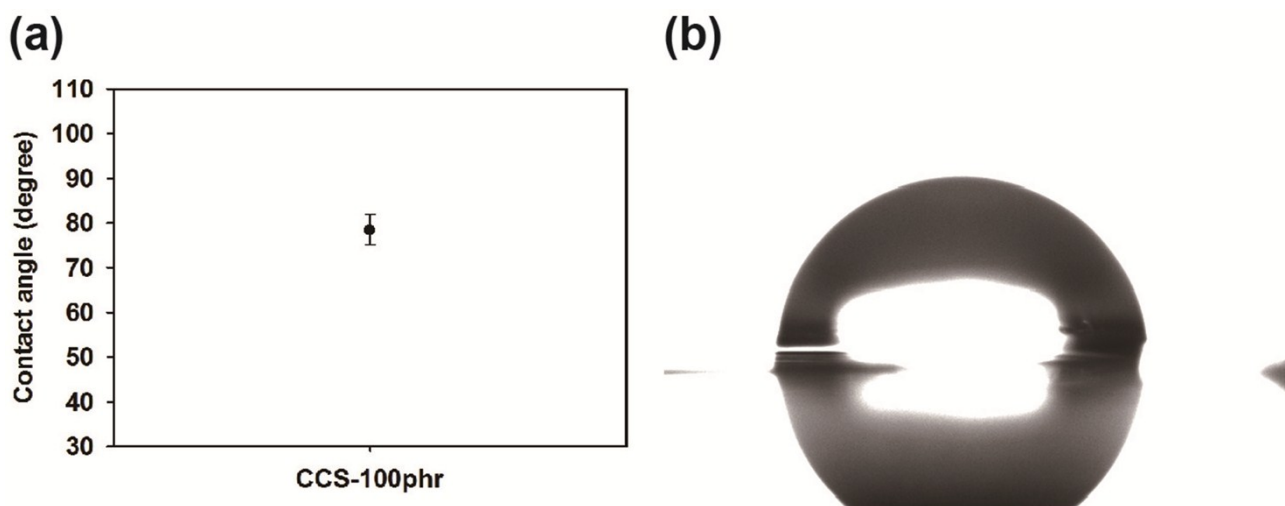
**Figure S1.** Two different types of wax showing well distribution in aqueous solution (left) used in this work and phase separation of conventional liquid oil-type wax in water (right). Water is dyed with blue ink to clearly show the phase separation.



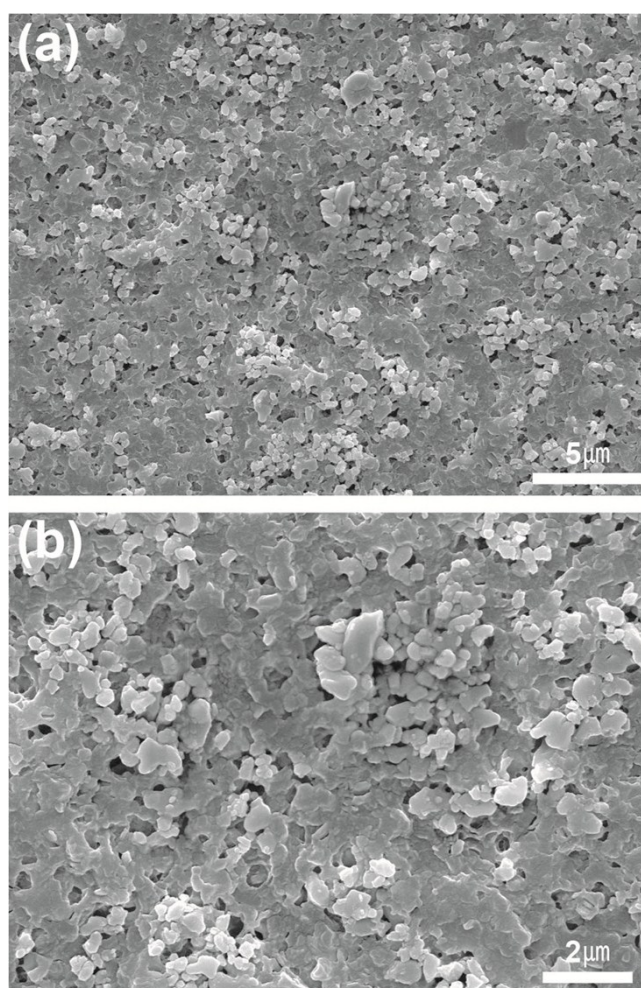
**Figure S2.** Cross-sectional SEM image of the CCS



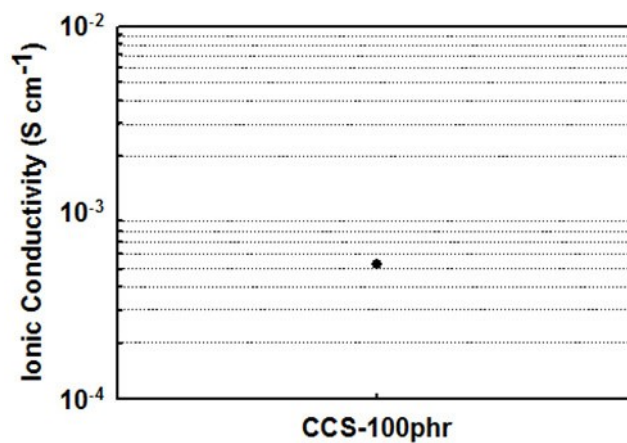
**Figure S3.** Water contact angle (a) of paraffin wax layer coated onto glass substrate (b).



**Figure S4.** Water contact angle (a) of the surface of CCS-100phr (b).



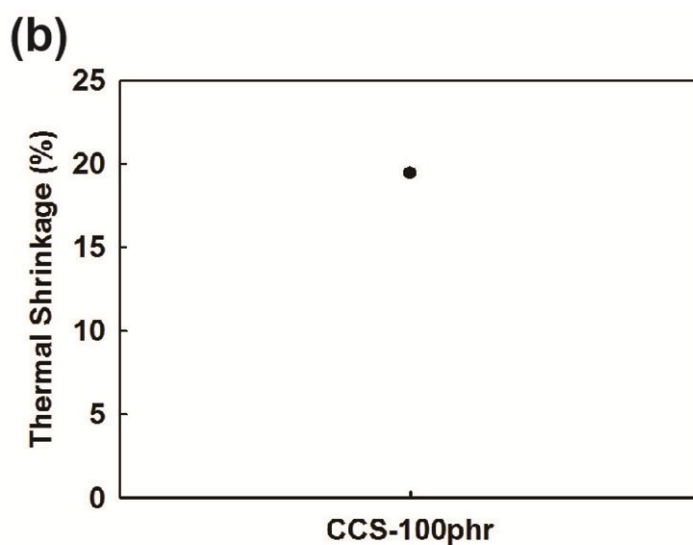
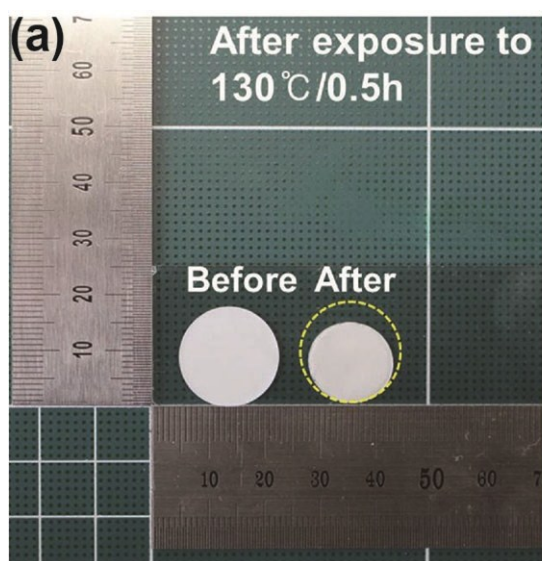
**Figure S5.** SEM image of ceramic-coated separator, CCS-100 phr, showing connection of wax region on the surface.



**Figure S6.** Ionic conductivity of cell equipped with CCS-100phr..

**Table S1.** Gurley value of CCS-100phr.

	Gurley value(sec/100cc)
CCS-100phr	3817.6



**Figure S7.** Thermal shrinkage of CCS-100phr.