

Supporting Information

Synthesis of controlled-particle-size boehmite for coating lithium-ion batteries separator

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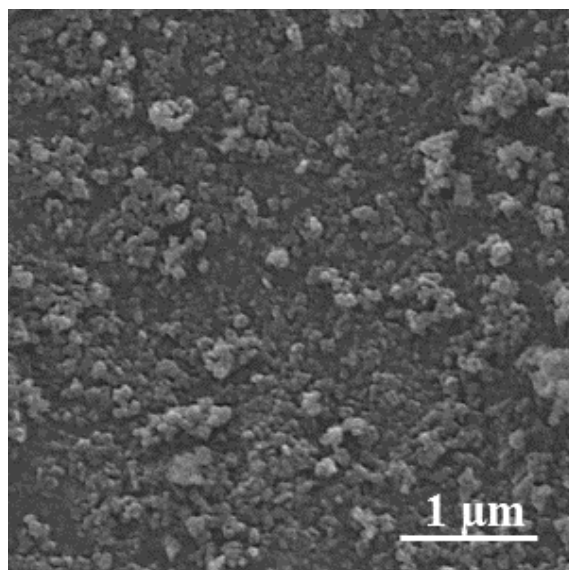


Fig. S1 SEM image of hydrothermal product of pseudo-boehmite.

Table S1 The boehmites' particle size distributions

No.	D10 / μm	D25 / μm	D50 / μm	D75 / μm	D90 / μm	D97 / μm
BM-2	1.349	1.622	2.021	2.536	3.092	3.710
BM-1	0.718	0.811	0.961	1.199	1.457	1.685
BM-0.7	0.502	0.588	0.722	0.967	1.243	1.442
BM-0.5	0.488	0.559	0.661	0.809	1.062	1.384
BM-0.3	0.049	0.082	0.562	0.766	1.083	1.420

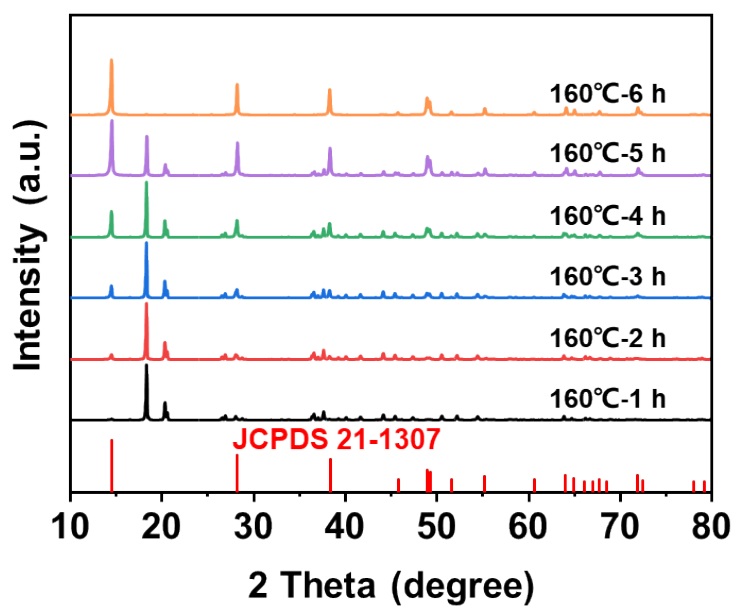


Fig. S2 XRD patterns of samples obtained under different reaction time at 160°C.

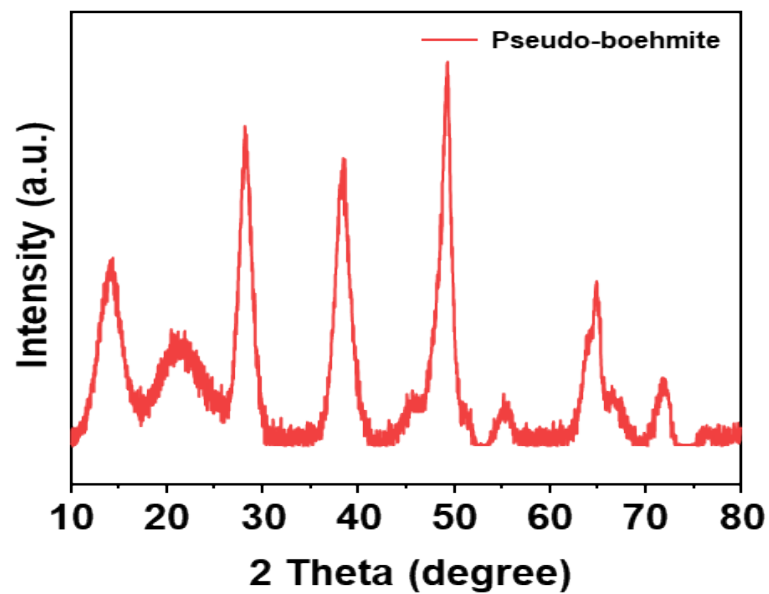


Fig. S3 XRD pattern of pseudo-boehmite (crystalline seeds).

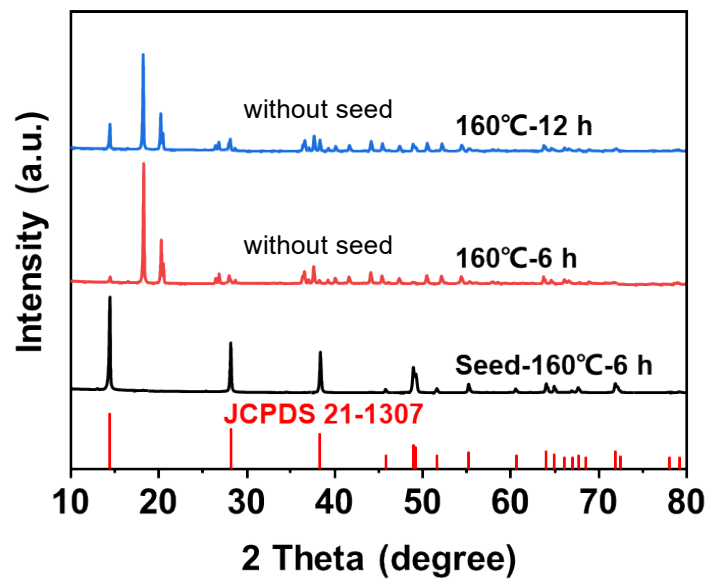


Fig. S4. XRD patterns of samples obtained under different reaction conditions.

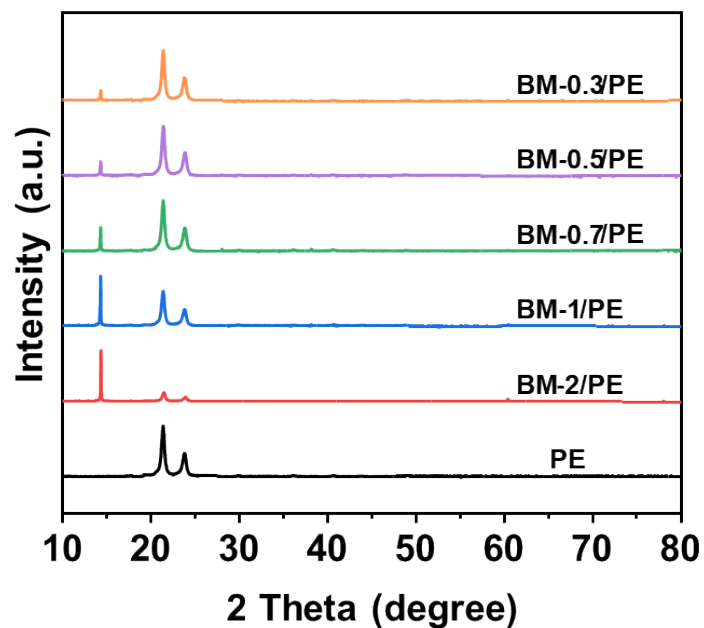


Fig. S5. XRD patterns of pure PE and BM/PE separators.

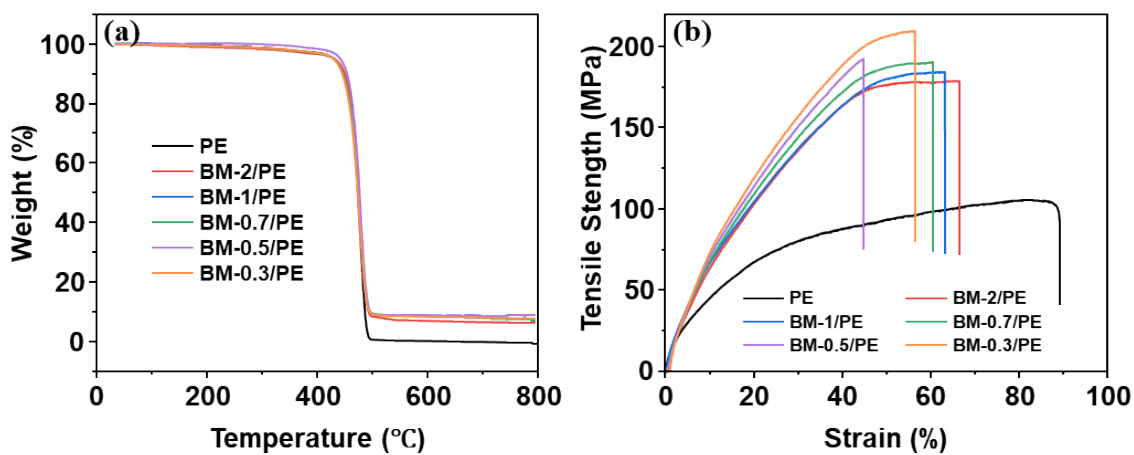


Fig. S6 (a) TGA curves and (b) Stress-strain curves of PE and BM-X/PE separators.

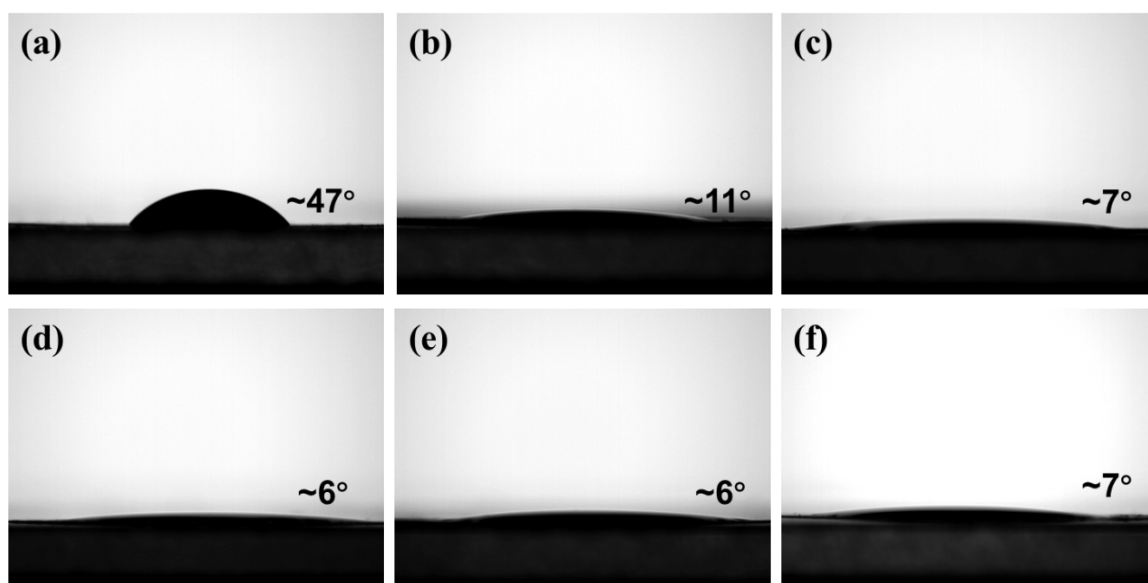


Fig. S7. Contact angle of (a) PE; (b) BM-2/PE; (c) BM-1/PE; (d) BM-0.7/PE; (e) BM-0.5/PE; (f) BM-0.3/PE separator.

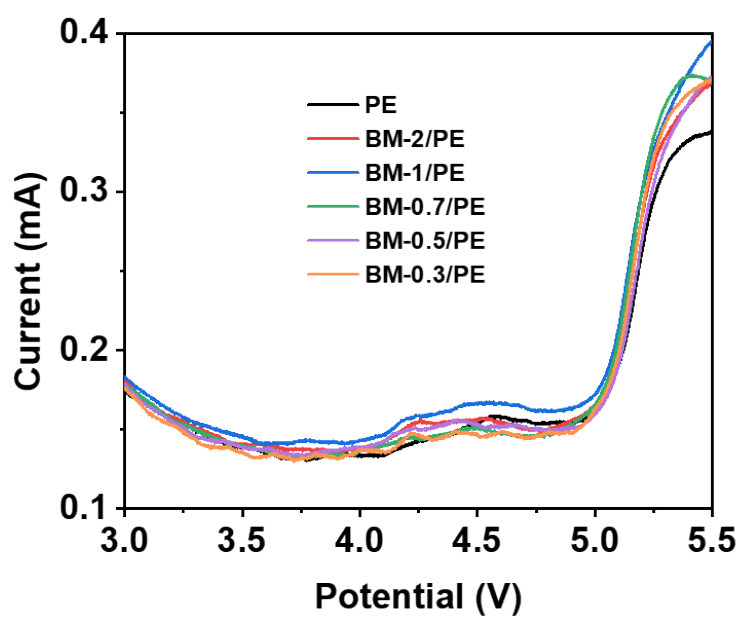


Fig. S8. LSV curves of batteries assembled with PE and BM-X/PE separators from 3 V to 5.5 V.