Journal Name

SUPPORTING INFORMATION

Structural Lithium Ion Battery Electrolytes via Reaction Induced Phase-Separation

Received 00th January 20xx,
Accepted 00th January 20xx

DOI: 10.1039/x0xx00000x

www.rsc.org/

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Table S1 Hansen solubility parameters (HSP) and densities for in-going components in the SBE´s.

Substance	δ_D (MPa$^{0.5}$)*	δ_P (MPa$^{0.5}$)*	δ_H (MPa$^{0.5}$)*	ρ (g cm^{-3})
Ethylene carbonate (EC)	18.0	21.7	5.1	1.321
Dimethyl methylphosphonate (DMMP)	16.7	13.1	7.5	1.145
Bisphenol A dimethacrylate (A)	18.4	3.3	3.4	-
Bisphenol A ethoxylate dimethacrylate (B)	17.0	3.7	5.2	-

*Values taken from software by, S. Abbot, C. M. Hansen, H. Yamamoto, Hansen Solubility Parameters in Practice, 3rd edn., 2013.

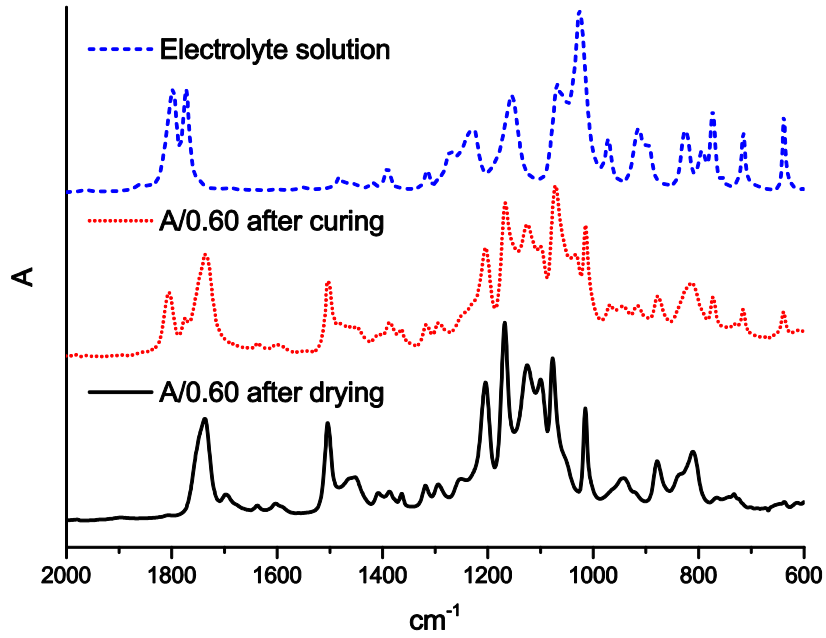

Fig. S1 FT-IR spectra of liquid electrolyte (1 M LiTFS in (EC:DMMP)) (blue), A/0.60, after curing (red), after washing and drying (black).

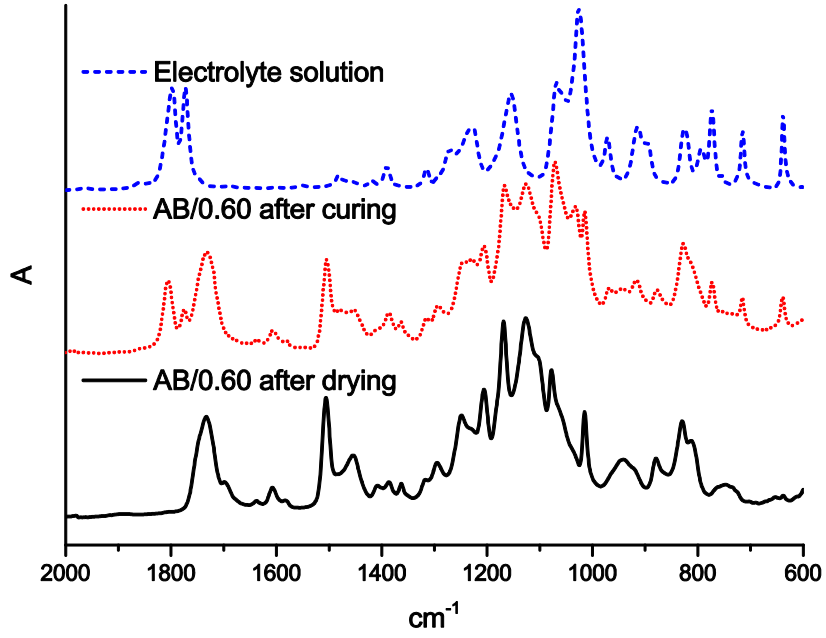

Fig. S2 FT-IR spectra of liquid electrolyte (1 M LiTFS in (EC:DMMP)) (blue), AB/0.60, after curing (red), after washing and drying (black).

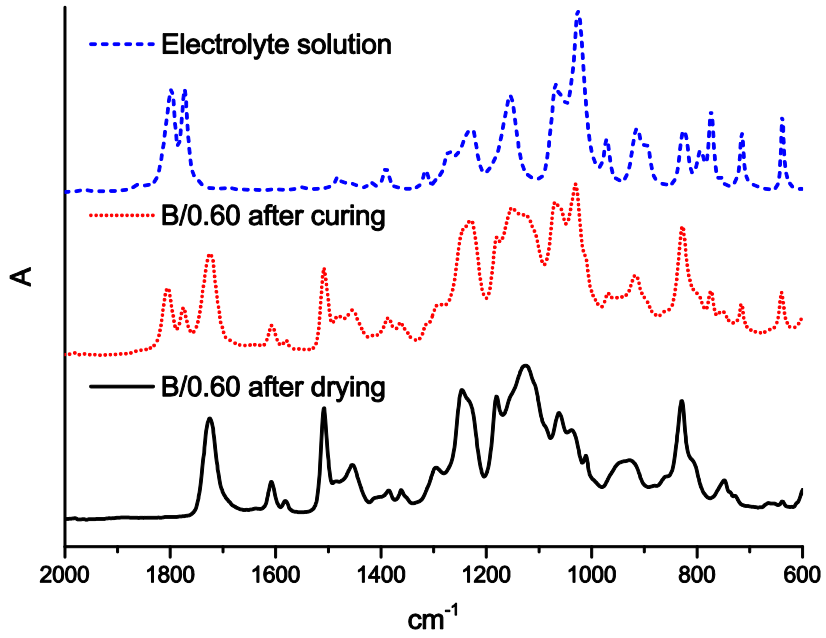

Fig. S3 FT-IR spectra of liquid electrolyte (1 M LiTFS in (EC:DMMP)) (blue), B/0.60, after curing (red), after washing and drying (black).

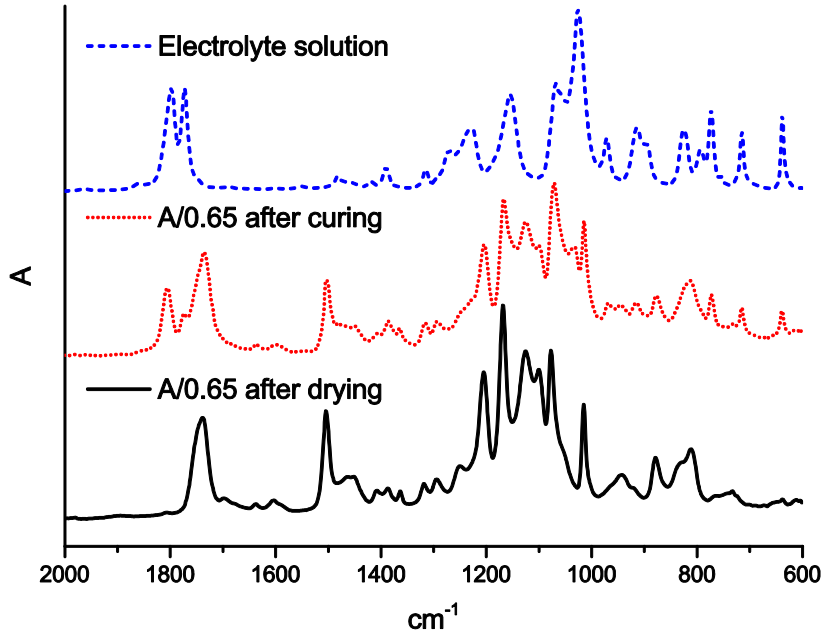

Fig. S4 FT-IR spectra of liquid electrolyte (1 M LiTFS in (EC:DMMP)) (blue), A/0.65, after curing (red), after washing and drying (black).

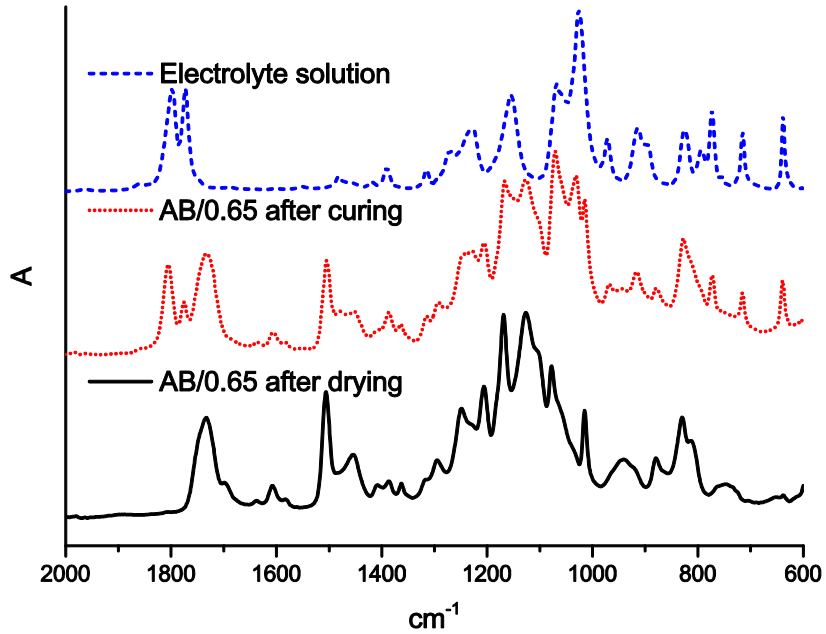

Fig. S5 FT-IR spectra of liquid electrolyte (1 M LiTFS in (EC:DMMP)) (blue), AB/0.65, after curing (red), after washing and drying (black).

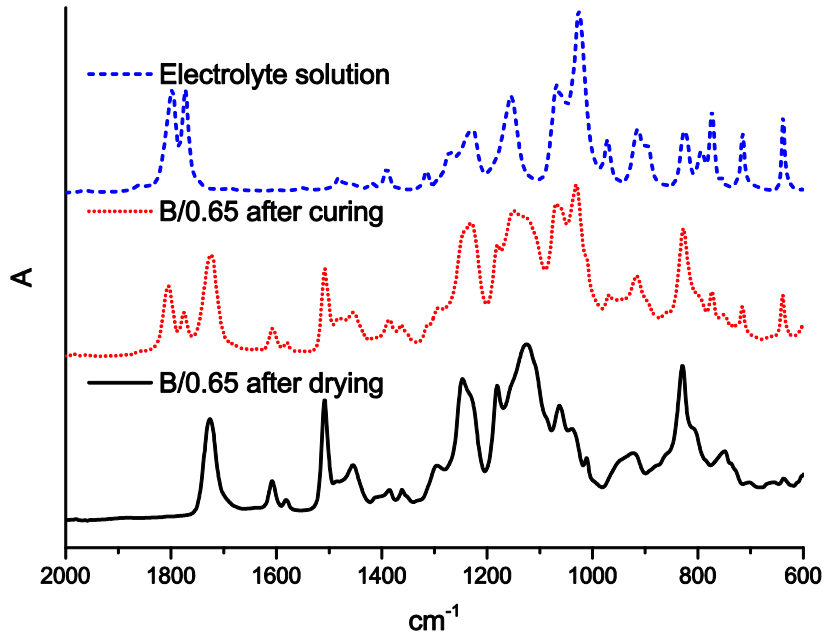

Fig. S6 FT-IR spectra of liquid electrolyte (1 M LiTFS in (EC:DMMP)) (blue), B/0.65, after curing (red), after washing and drying (black).

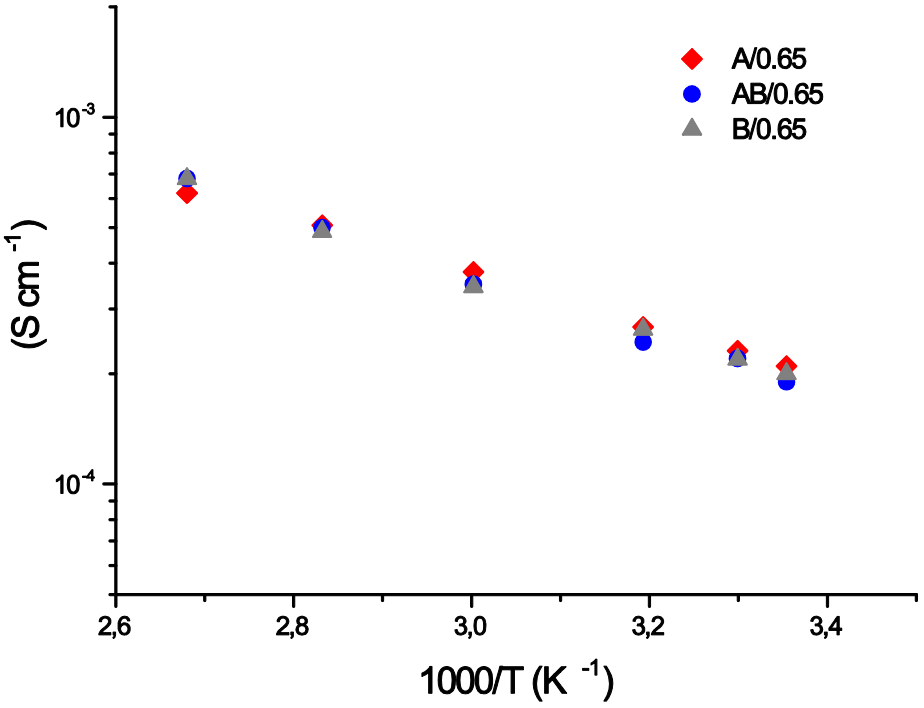

Fig. S7 Ionic conductivity σ (logarithmic scale) as a function of temperature for sample A/0.65 (red), AB/0.65 (blue) and B/0.65 (grey).

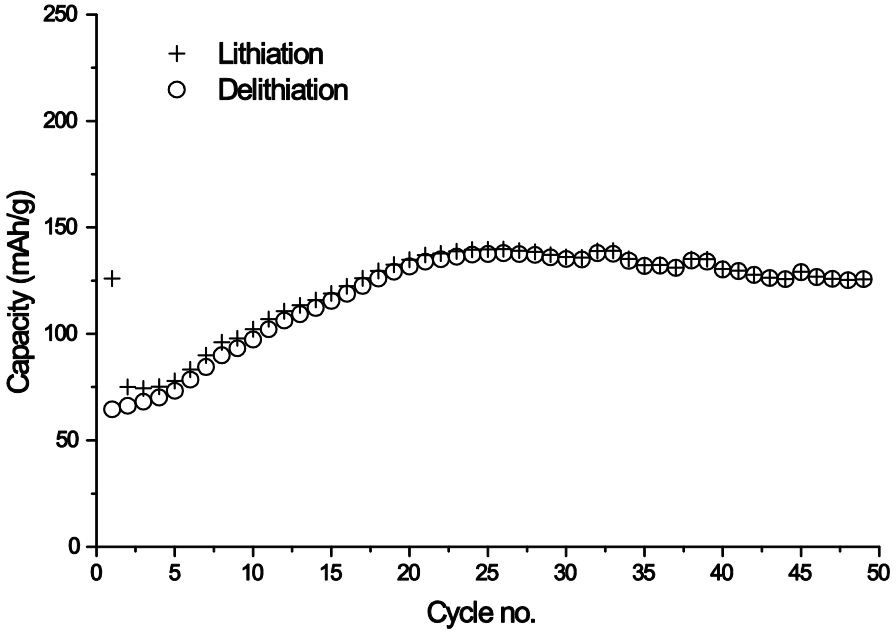

Fig. S8 Lithiation and delithiation capacity as a function of cycles for a carbon fiber lamina half-cell cycled at a C/5 for 49 cycles. AB/0.65 was used as a matrix.