Supplementary Material (ESI) for Chemical Communications

Supporting information for

"Instantaneous dissolution of cellulose in organic electrolyte solutions"

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Materials

The solvents *N*,*N*-dimethylformamide (+ 99.8 %, Fluka), *N*,*N*-dimethylacetamide (+99.5 %, Fluka), pyrrolidinone (99 %, Aldrich), δ-valerolactam (99 %, Aldrich), ε-caprolactam (99 %, Aldrich), *N*-methylpyrrolidinone (+99.5 %, Aldrich), 1,3-dimethyl-2-imidazolidinone (+ 99.0%, Aldrich), *N*,*N*′-dimethylpropylene urea (+ 99.0%, Aldrich), *N*,*N*,*N*′,*N*′-tetramethylurea (99 %, Aldrich), dimethylsulfoxide (Riedel-de Häen, + 99.5%), sulfolan (99 %, Fluka), acetylacetone (99 %, Fluka), *t*-butanol (+99.3 %, Aldrich), *t*-pentanol (99 %, Aldrich), EMIMAcO (95 %, Iolitech) and BMIMCl (99.99 %, Iolitech) were used as received. The solvatochromic probes 4-nitroaniline (98 %, Aldrich), *N*,*N*-diethyl-4-nitroaniline (97 %, Chempur) and Reichardt's dye (dye content 90 %, Aldrich) were used as purchased. Microcrystalline cellulose (Avicel, Aldrich) was used without pretreatment.

E_T(30) and Kamlet-Taft parameters

The E_T(30) was determined as described elsewhere. The parameters α, β, π^* were measured according to the protocol established by Kamlet and Taft[1] using the equations designed for the solvatochromic probes 4-nitroaniline, *N*,*N*-diethyl-4-nitro-aniline and Reichardt's dye.

Reference

1. C. Reichardt, *Green Chemistry*, 2005, **7**, 339-351.
2. M. J. Kamlet, J. L. M. Abboud, M. H. Abraham and R. W. Taft, *J. Org. Chem.*, 1983, **48**, 2877-2887.