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Supporting Information

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Palmitic-Acid-Based Hydrophobic Deep Eutectic Solvents for the Extraction of Lower Alcohols from Aqueous Media: Liquid–Liquid Equilibria Measurements, Validation and Process Economics

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Supplementary Information

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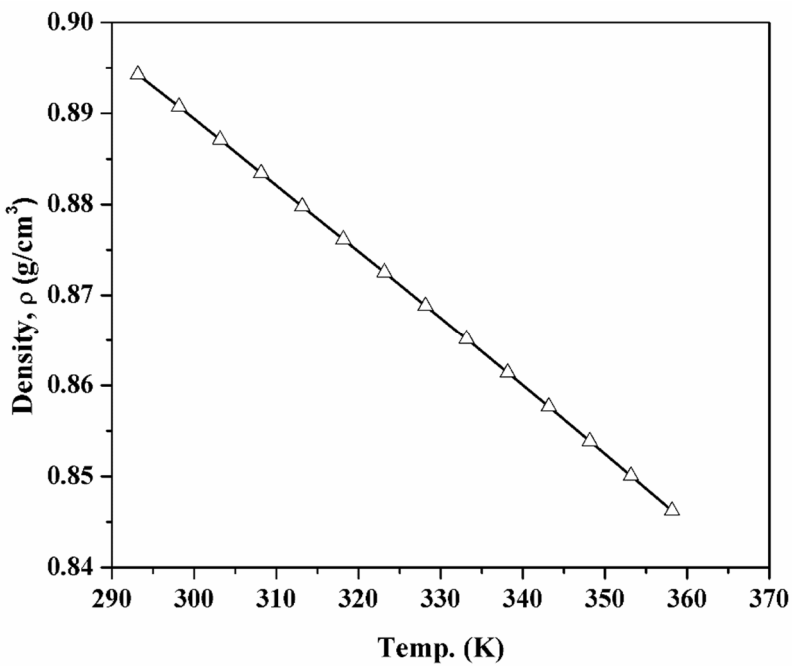

Figure S1. Density of of DL-menthol and Palmitic acid (12:1) based DES at different temperatures

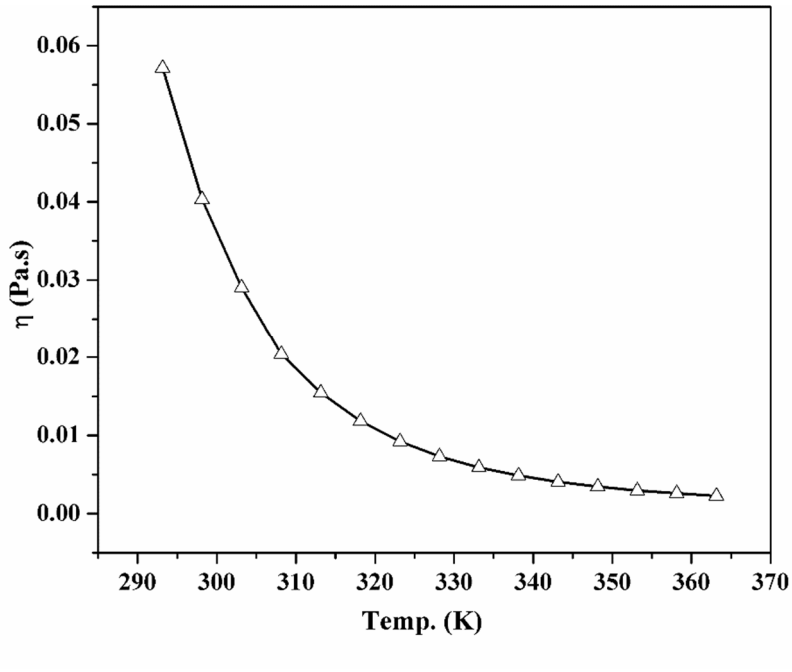

Figure S2. Viscosity of of DL-menthol and Palmitic acid (12:1) based DES at different temperatures

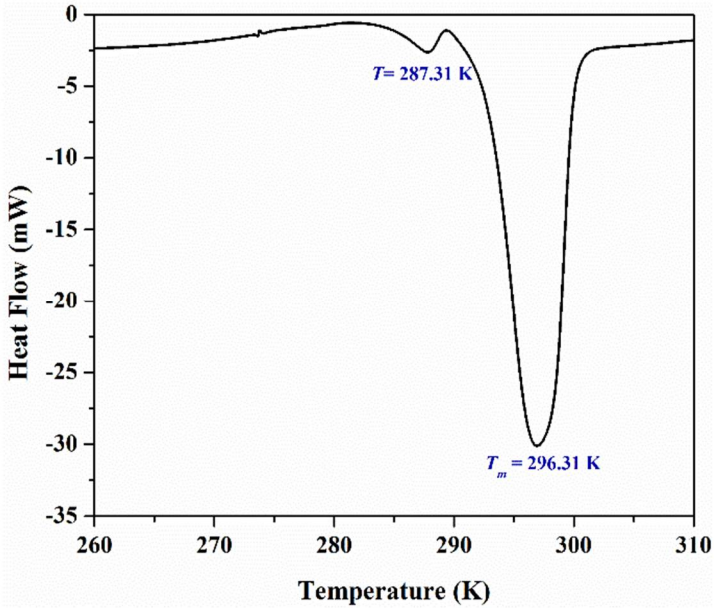

Figure S3. Differential Scanning Calorimetry (DSC) of DL-menthol and Palmitic acid (12:1) based DES

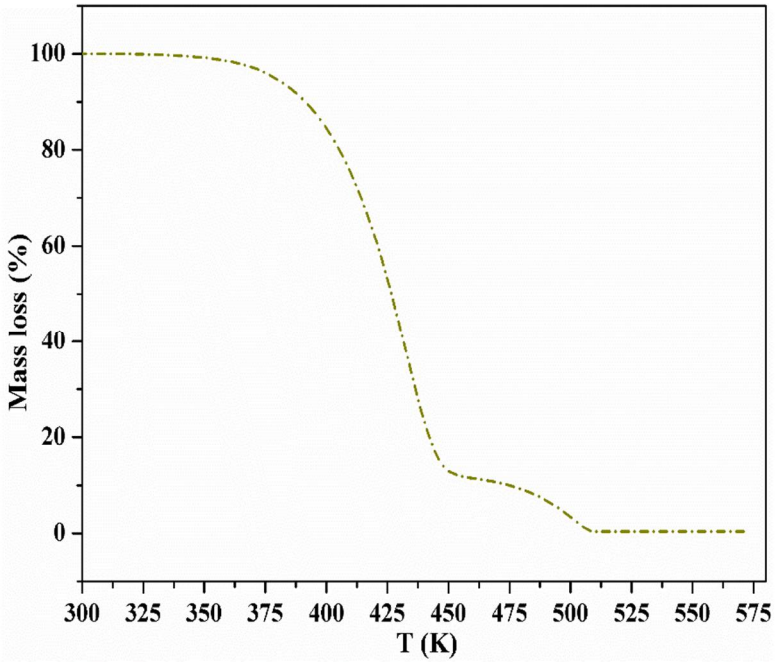

Figure S4. ThermoGravimetric Analysis (TGA) for DL-menthol and Palmitic acid (12:1) based DES

Table S1. Thermal properties of studied eutectic mixtures: Decomposition temperature (T_{dec}) and normal melting temperature (T_m).

Compound Name	T_m (K)	T_{deg} (K)
Pure compounds		
DL-menthol	307.15-309.15	309.15
Palmitic acid or Hexadecanoic acid	335.15-339.15	339.15
Eutectic Mixture		
DES (DL-menthol:Palmitic acid) 12:1	296.49	541.15

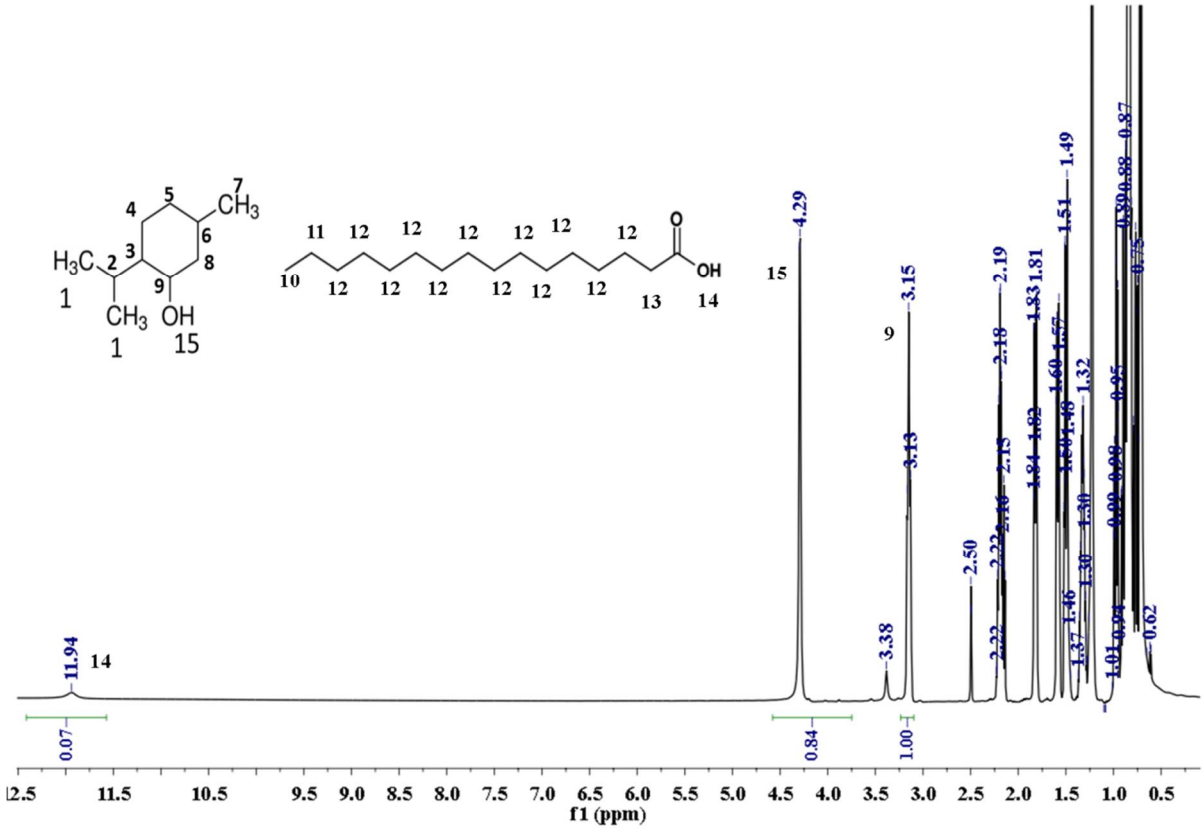

Figure S5. [1]H NMR Spectra of Synthesized DL-menthol and palmitic acid based DES

Algebraic Procedure for Computing Mole Fraction in DES-1 from [1]H NMR data

Compound name	**Corresponding peak**	**Peak Position (PPM)** *	**Corresponding Area**	**Area due to a single atom of H**	**Mole ratio**
DL-menthol	-OH of DL-menthol	4.29	0.84 (one Hydrogen atoms)	0.84	12
Palmitic acid	-OH of Myristic acid	11.94	0.07 (one Hydrogen atoms)	0.07	1

*As per Figure S-5

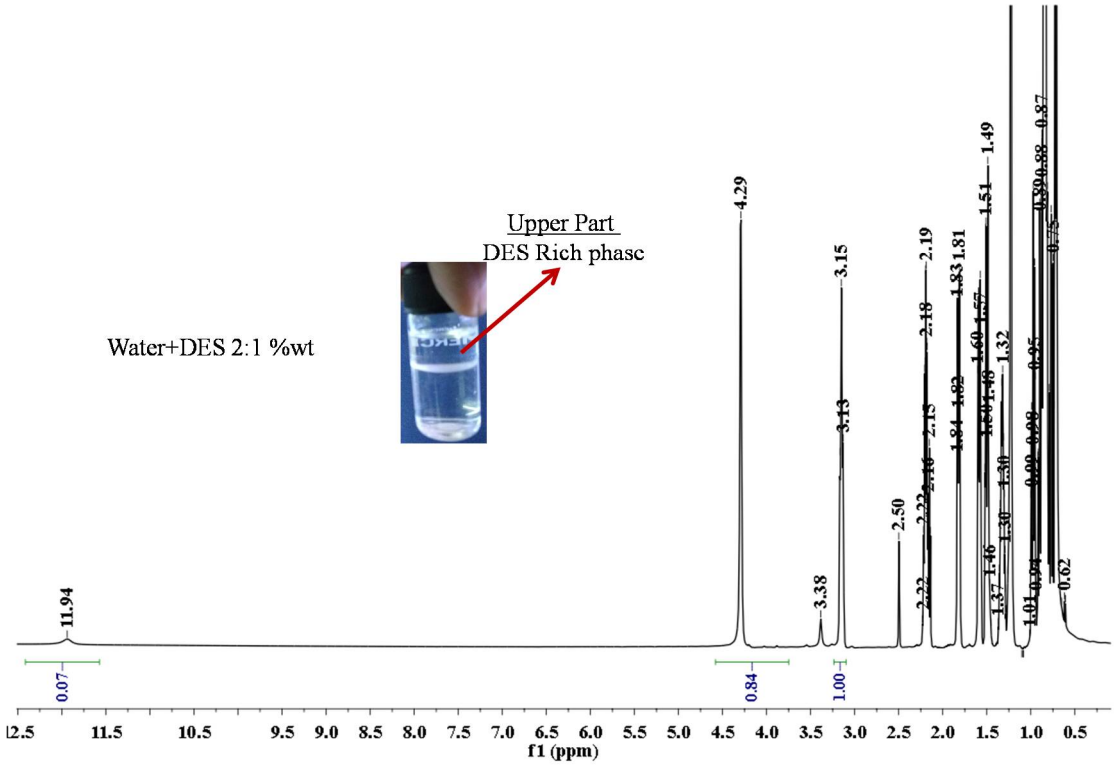

Figure S6. ^{1}H NMR analysis of DES rich phase in water

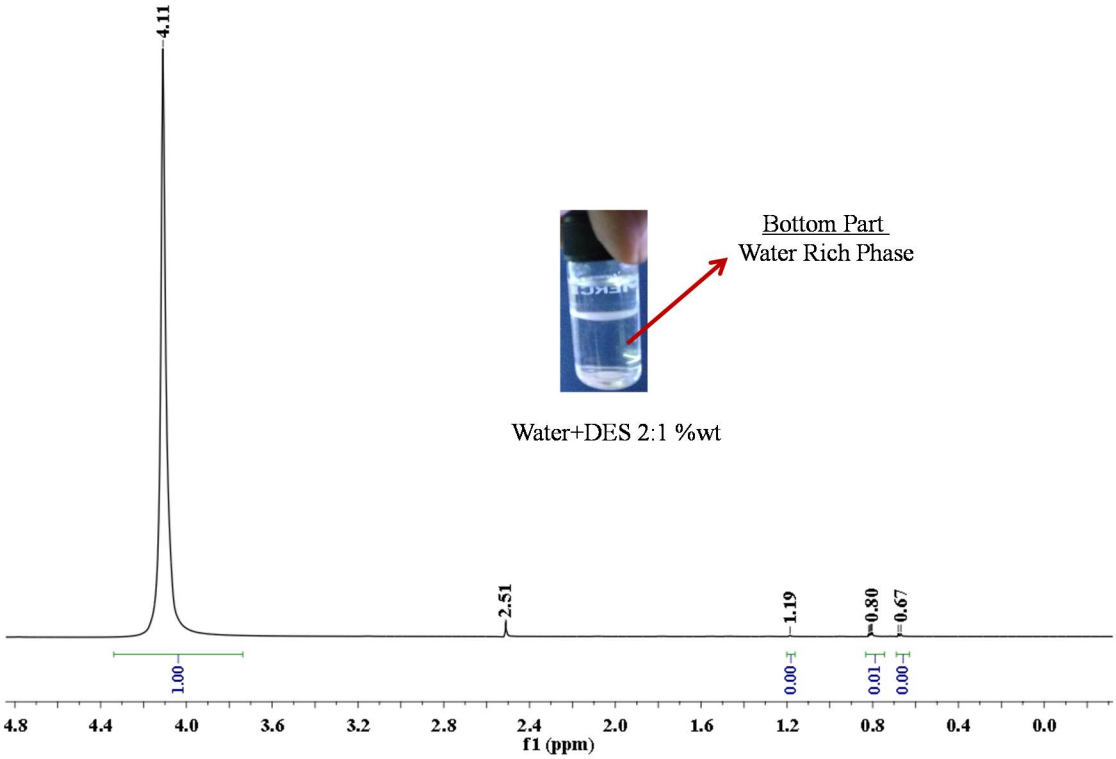

Figure S7. ^{1}H NMR analysis of water rich phase