

1 Thermal, dielectric and electrochemical study of decanoic acid -  
2 tetrabutylammonium chloride deep eutectic solvent

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10 **Supplementary information**

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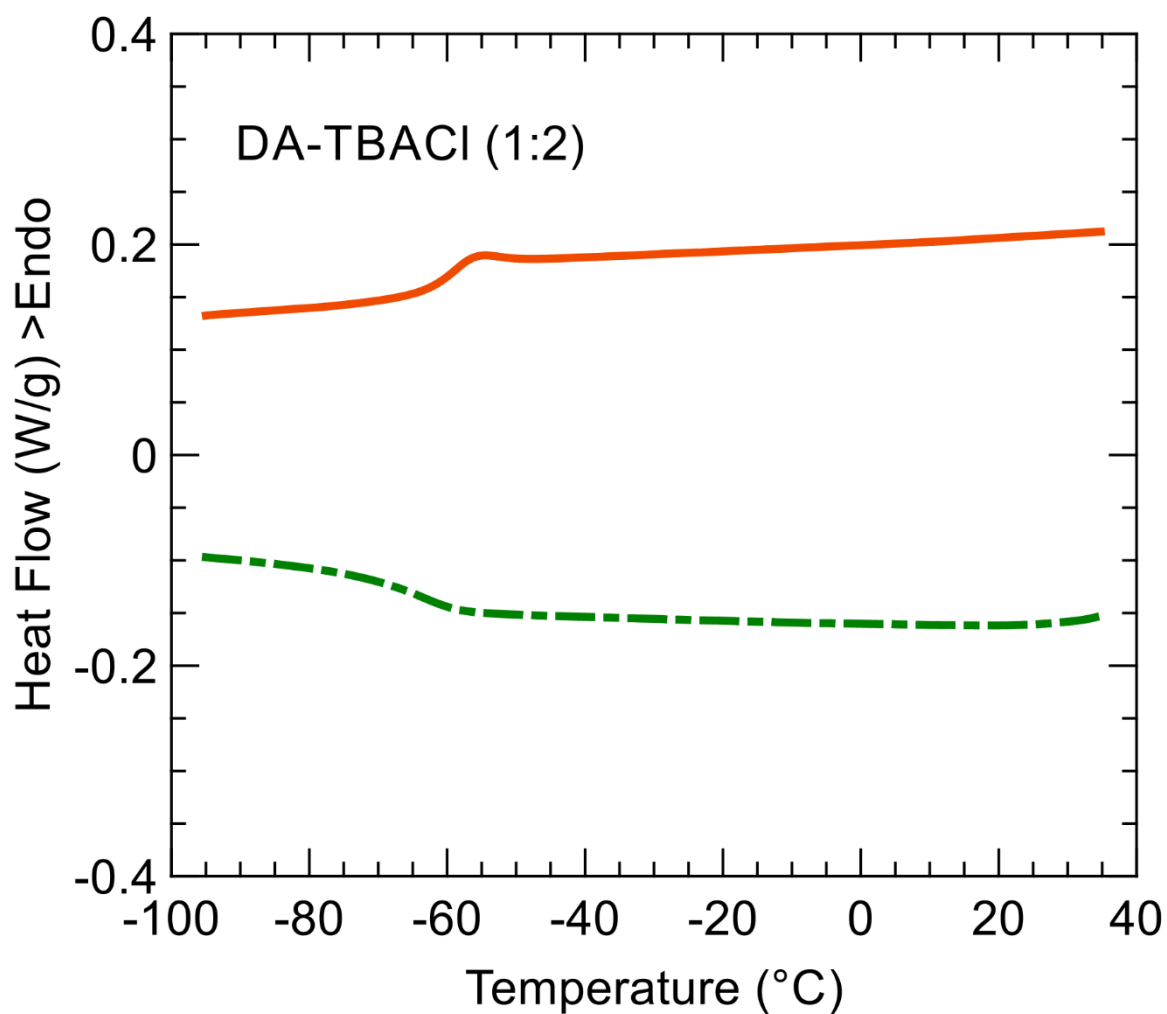
13 [ludovic.paquin@univ-rennes.fr](mailto:ludovic.paquin@univ-rennes.fr)

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# 1. Differential scanning calorimetry

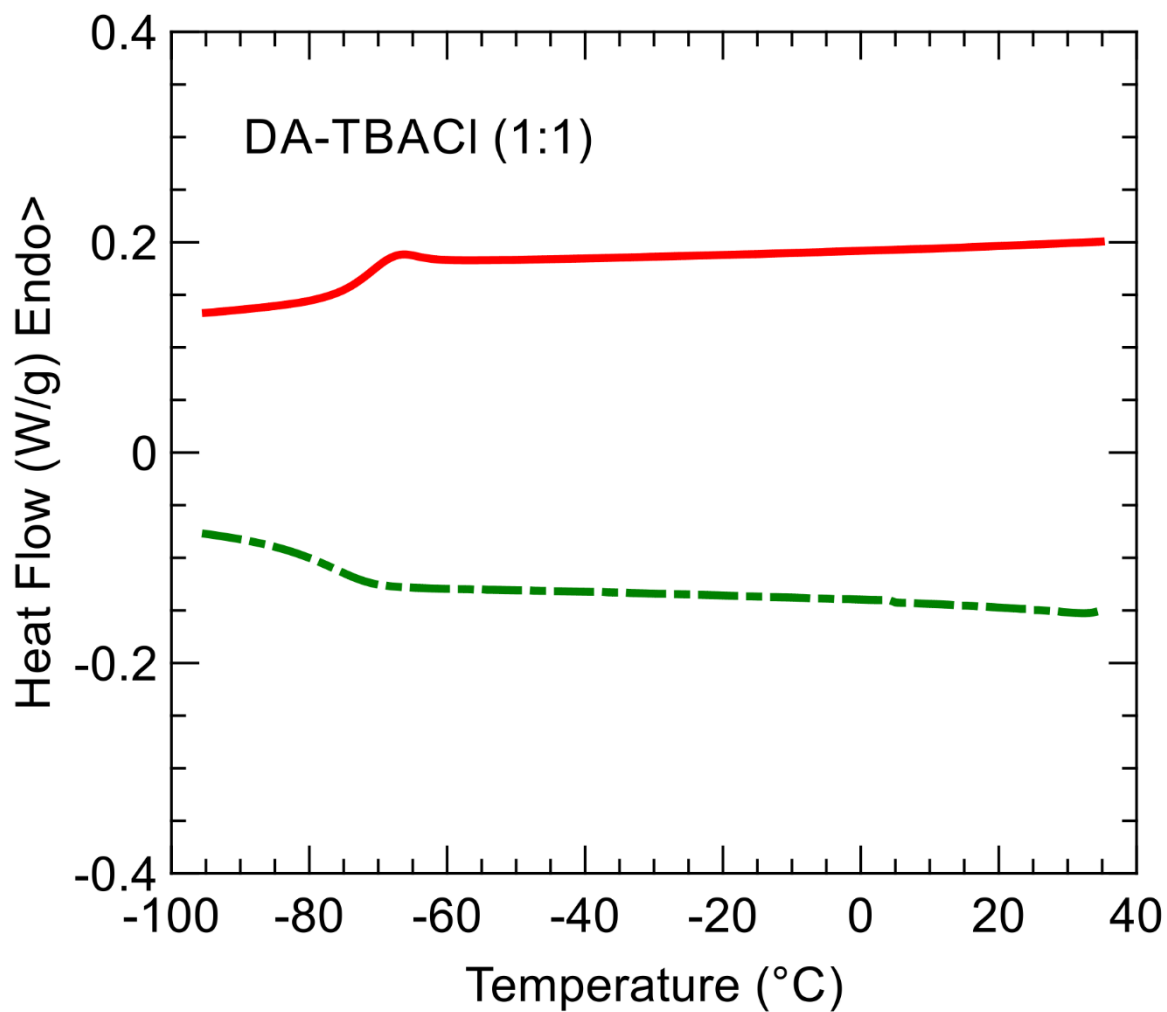
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4 **Figure S1.** Thermograms measured during cooling (green dashed-dotted) and subsequent  
5 heating (red solid) at  $5^{\circ}\text{C}\cdot\text{min}^{-1}$  of DA-TBACl (1:2). No crystallization is observed during the  
6 entire thermal cycle, but a single glass transition at  $T_g = -63.1^{\circ}\text{C}$ .

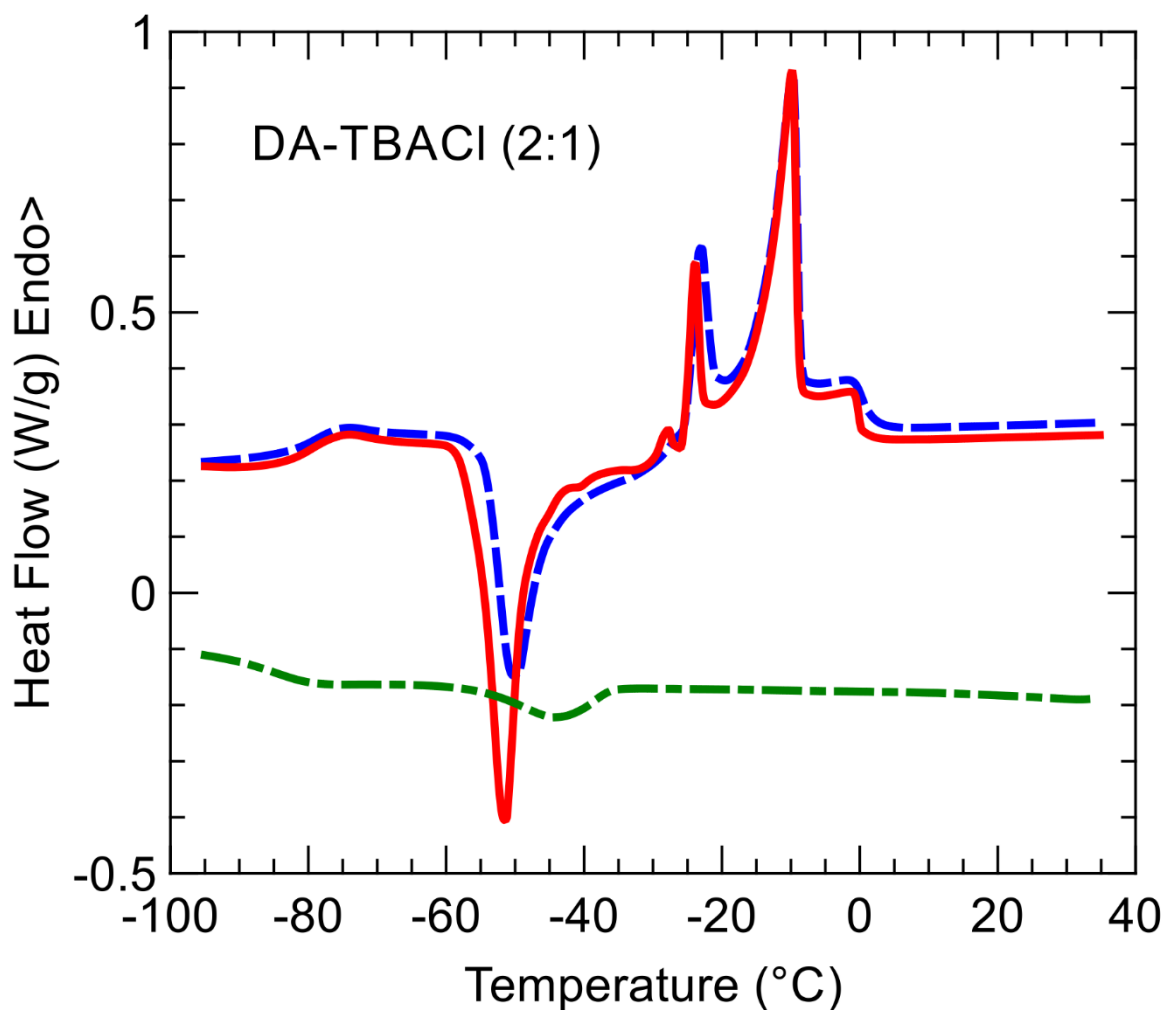
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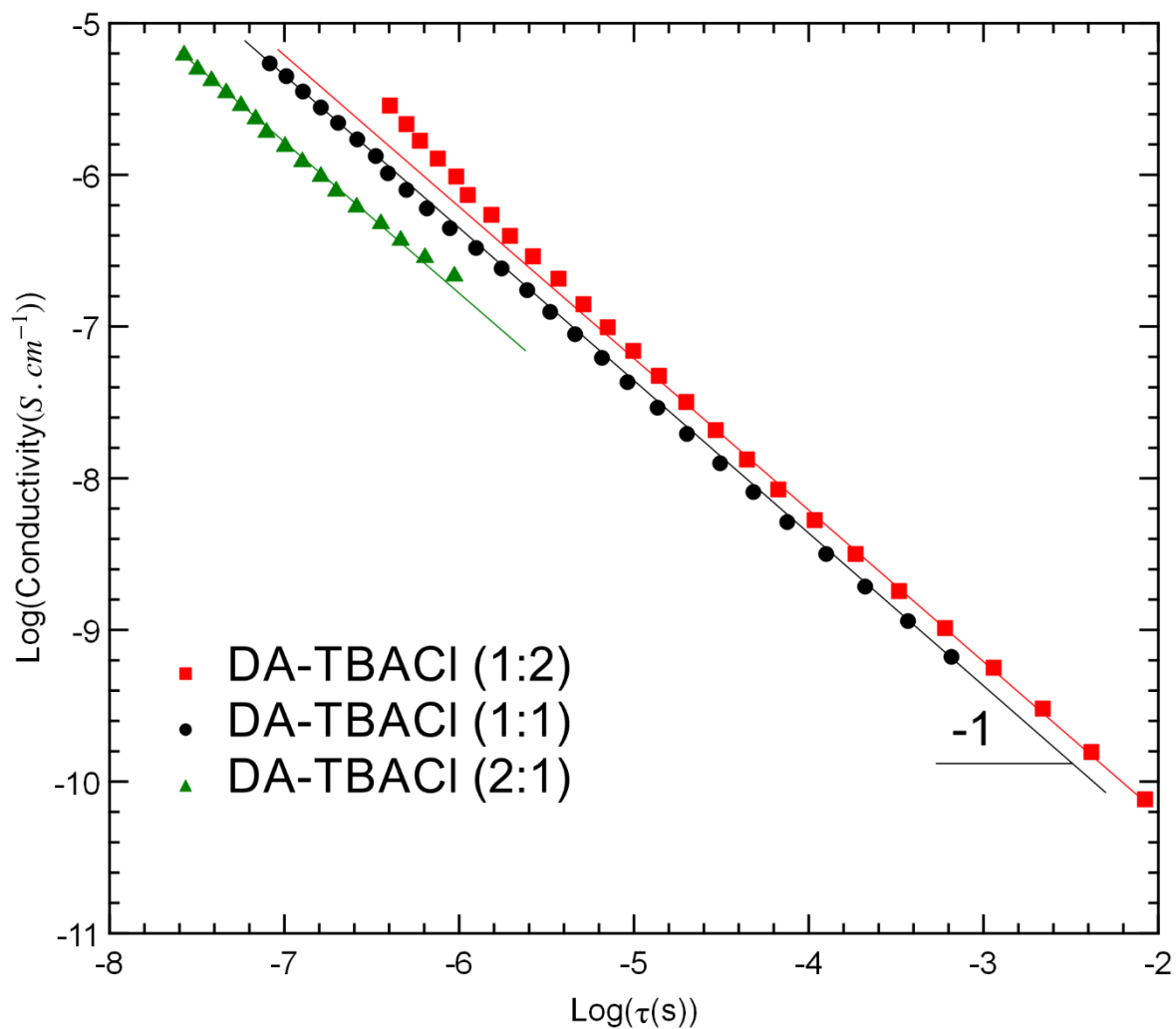
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2 **Figure S2.** Thermograms measured during cooling (green dashed-dotted) and subsequent  
3 heating (red solid) at  $5^{\circ}\text{C}\cdot\text{min}^{-1}$  of DA-TBACl (1:1). No crystallization is observed during the  
4 entire thermal cycle, but a single glass transition at  $T_g = -76^{\circ}\text{C}$ .

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 2 **Figure S3.** Thermograms measured during cooling (green dashed-dotted) and subsequent  
 3 heating (blue dashed) at  $5^{\circ}\text{C}\cdot\text{min}^{-1}$  of DA-TBACl (2:1). Partial crystallization was observed  
 4 during slow cooling at about  $-40^{\circ}\text{C}$ , which could be avoided by thermal quench. Second heating  
 5 ramp (red solid line) after thermal quench (at  $200^{\circ}\text{C}\cdot\text{min}^{-1}$ ). In the latter case, no crystallization  
 6 is observed during fast cooling (not shown) but only during heating. The glass transition  
 7 occurred at  $T_g = -83.8^{\circ}\text{C}$



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2 **Figure S4.** Dipolar relaxation time as a function of the dc-conductivity of the studied DA-

3 TBACl mixtures with composition (green triangles) 2:1, (black circles) 1:1, and (red squares)

4 1:2. Solid lines with slope -1 correspond to inverse proportionality of both quantities.

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