Electronic Supplementary Information

Solution and Thermal behaviour of Novel Dicationic Imidazolium Ionic Liquids

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Figure 1a: $[2C_8bti][Br]_2$ (**2a**)

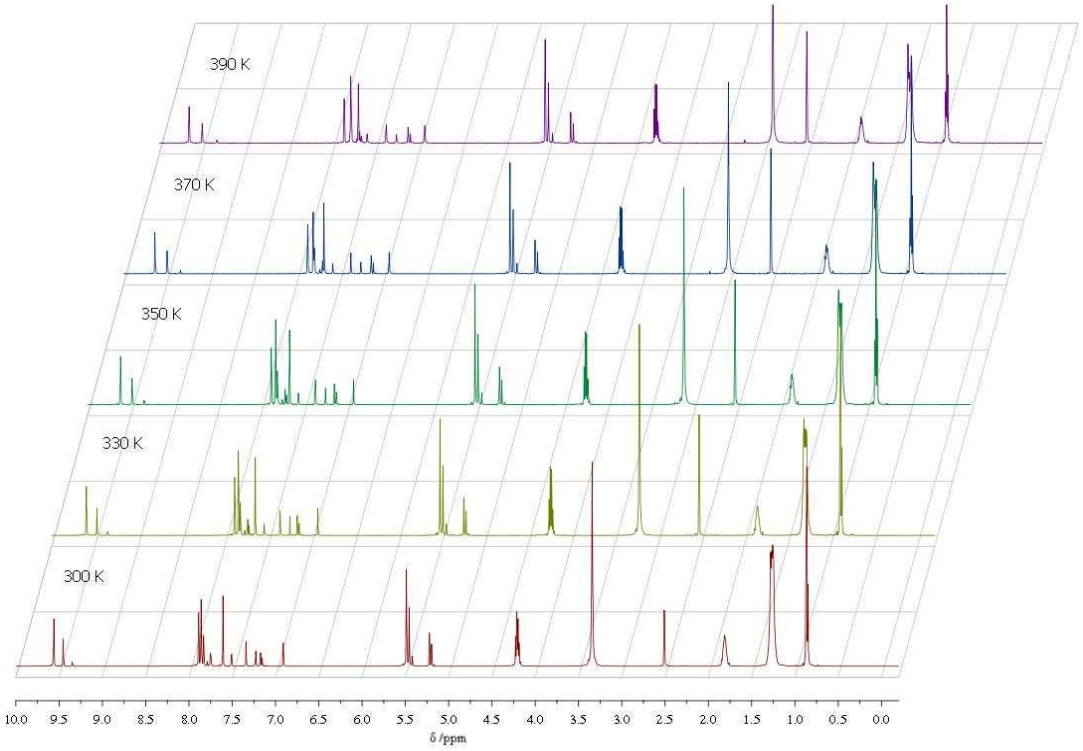

Figure 1b: $[2C_8bti][BF_4]_2$ (**2b**)

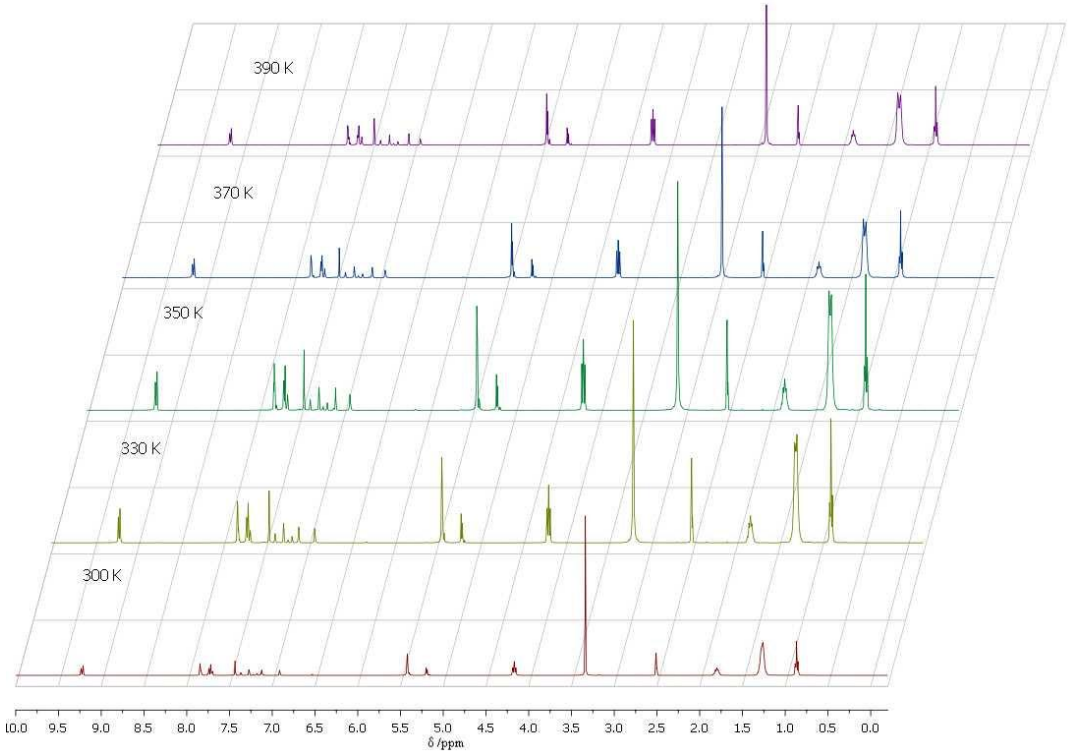

Figure 1c: $[2C_8bti][NTf_2]_2$ (**2c**)

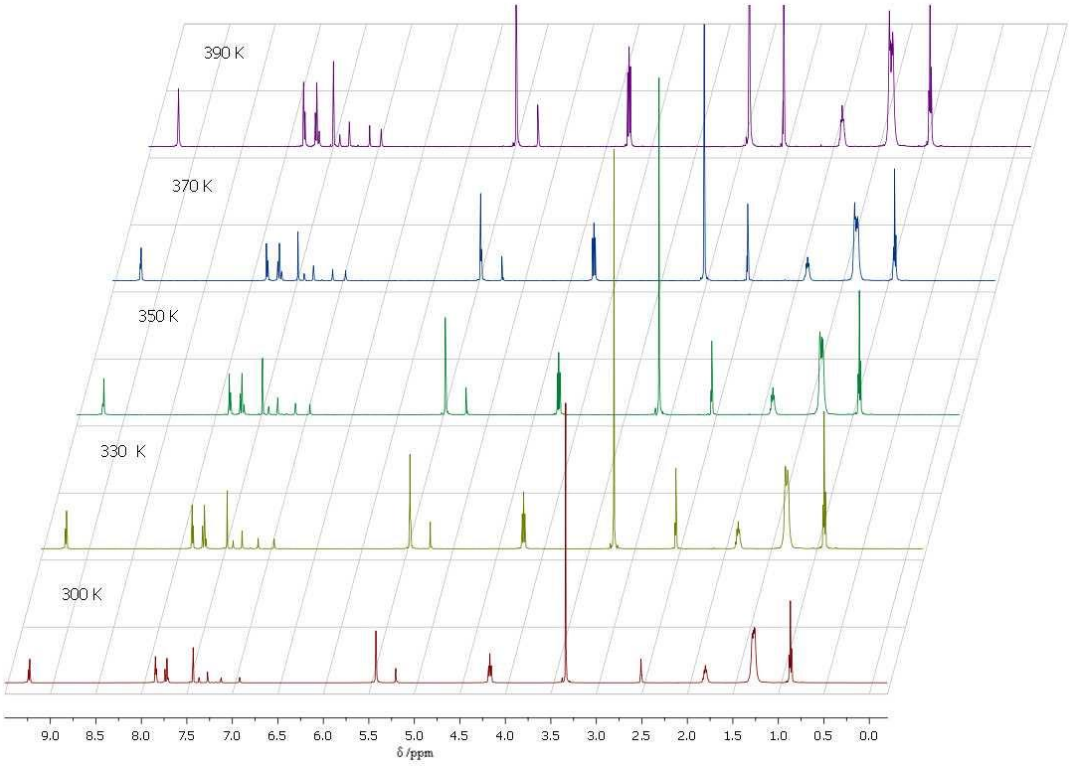

Figure 1d: $[2C_8bti][2,6\text{-nds}]$ (**2e**)

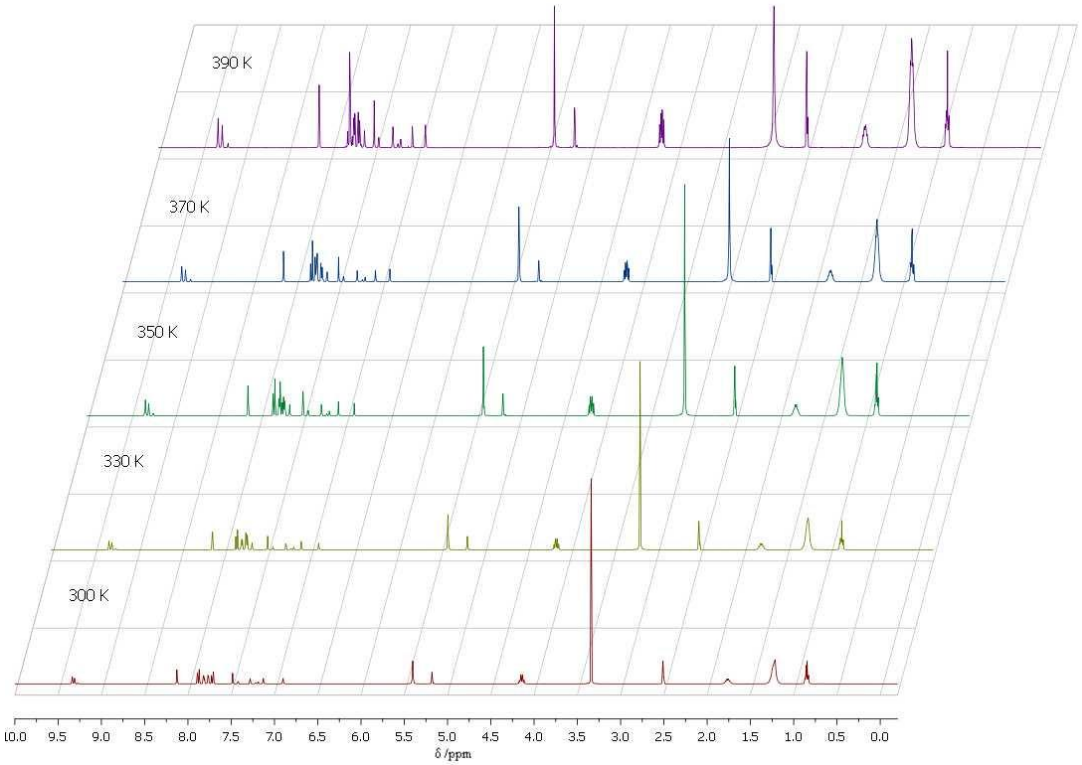

Figure 1e: [2C_8bti][1,4-bdc] (**2f**)

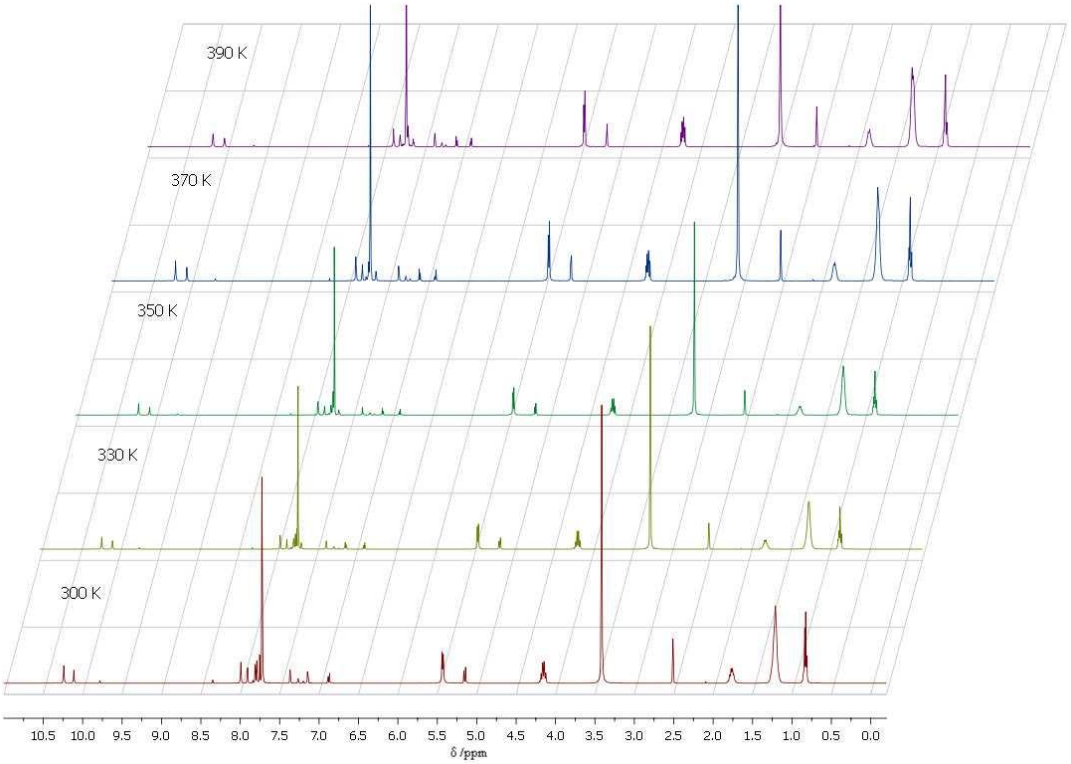

Figure 1f: [2C_8bti][2,6-ndc] (**2g**)

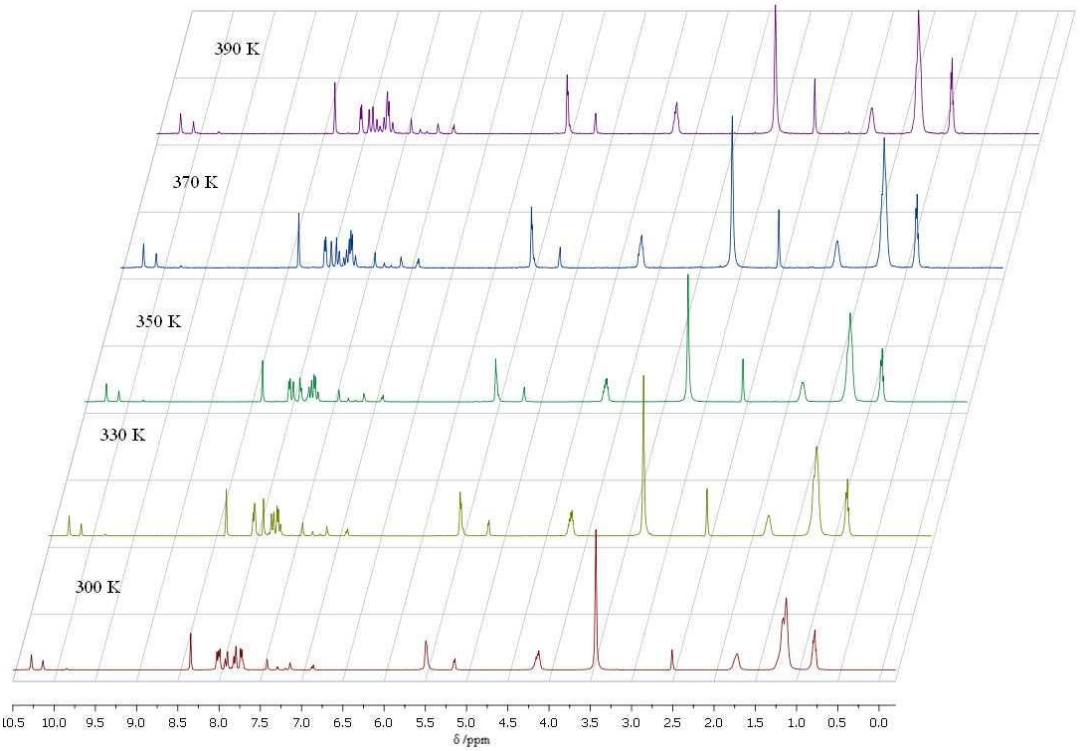

Figure 1g: [2C_8bti][ad] (**2h**)

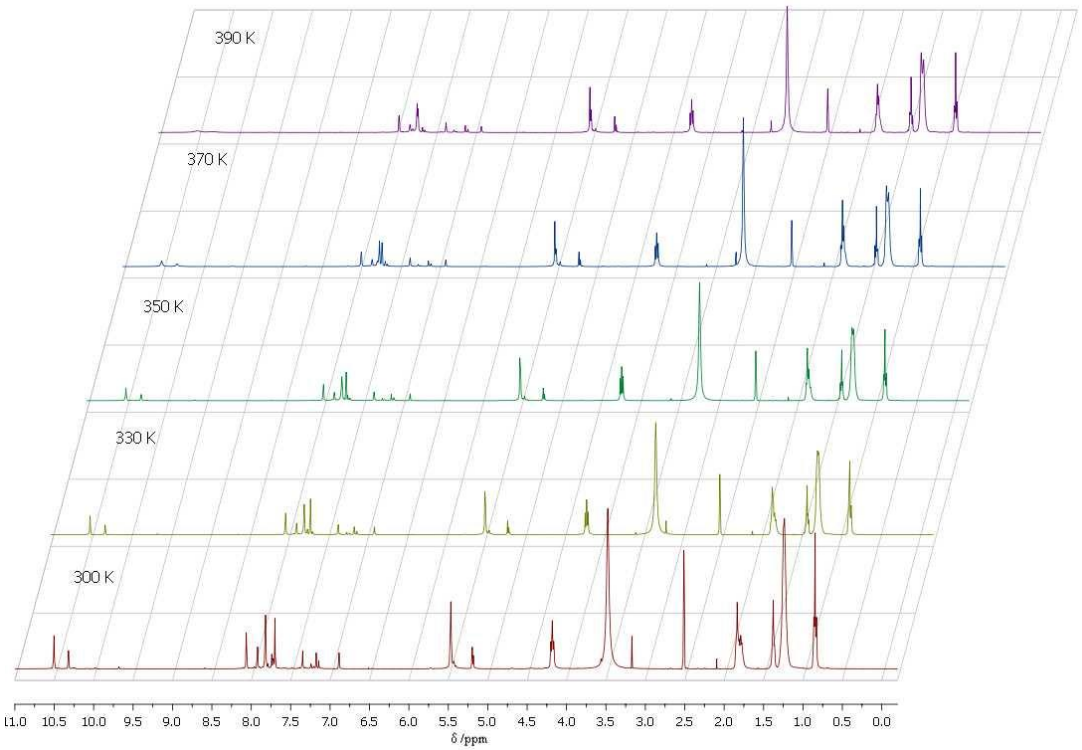

Figure 1h: Expanded regions for [2C_8bti][ad] (**2h**)

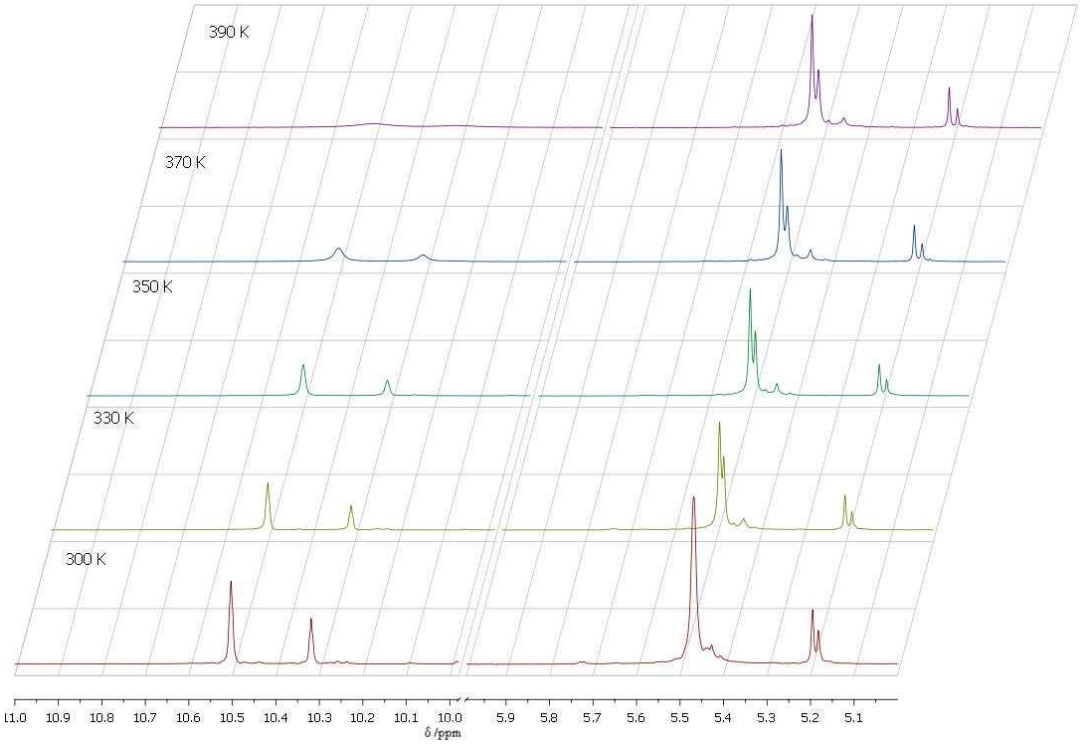

Figure 1i: [2C$_8$bti][sub] (**2i**)

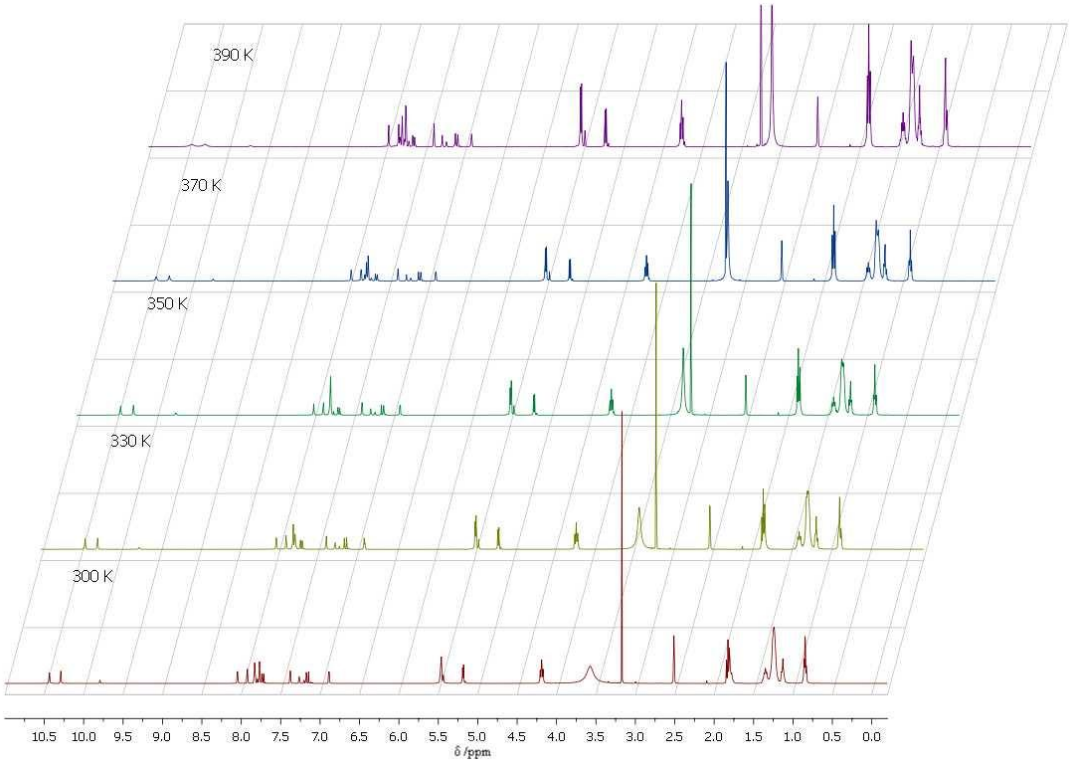

Figure 1l: Expanded regions for [2C$_8$bti][sub] (**2i**)

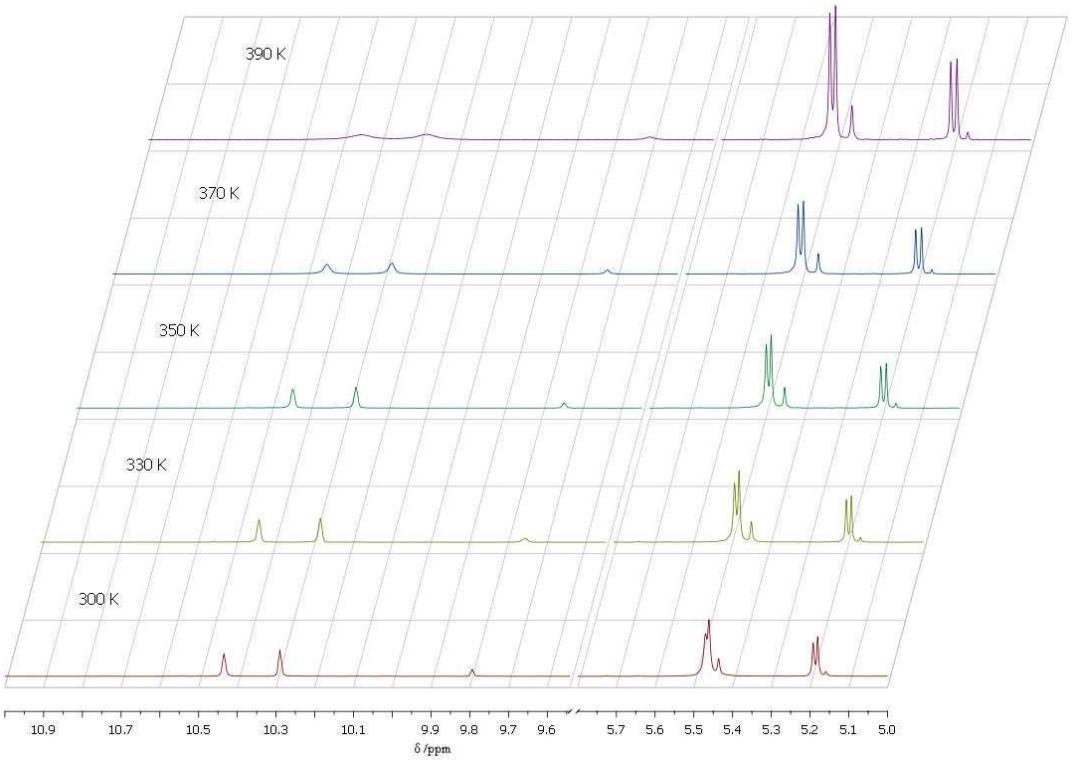

Figure 1: ^{1}H NMR spectra in dmso-d_6 solution (0.038 M) in the range 300-390 K relevant to dicationic functionalised salts **2a-i**.

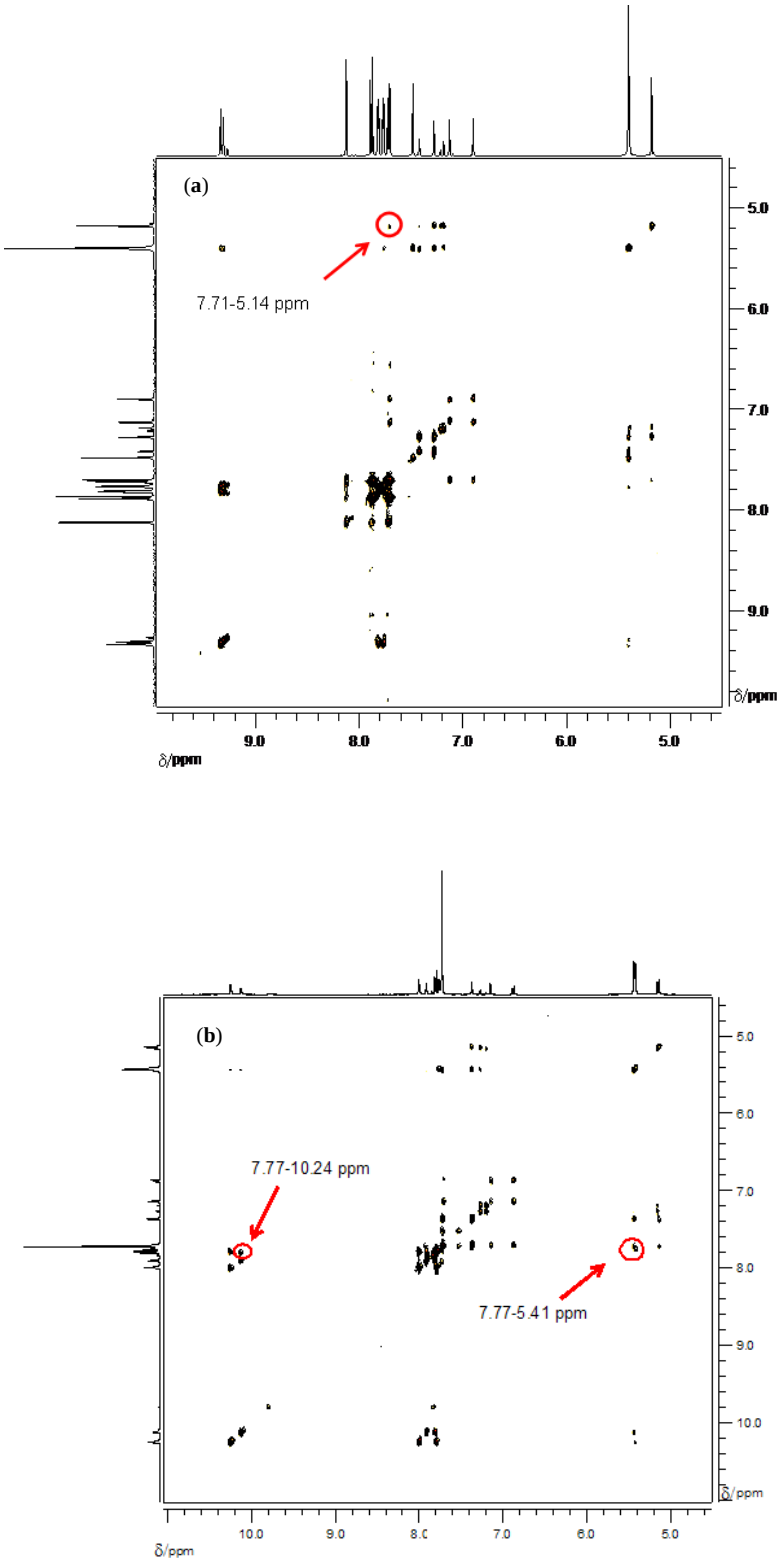

Figure 2. 2D NOESY spectra of dicationic functionalised salts**:** (**a**) [2C$_8$bti][2,6-nds] (**2e**); (**b**)[2C$_8$bti][1,4-bdc] (**2f**).

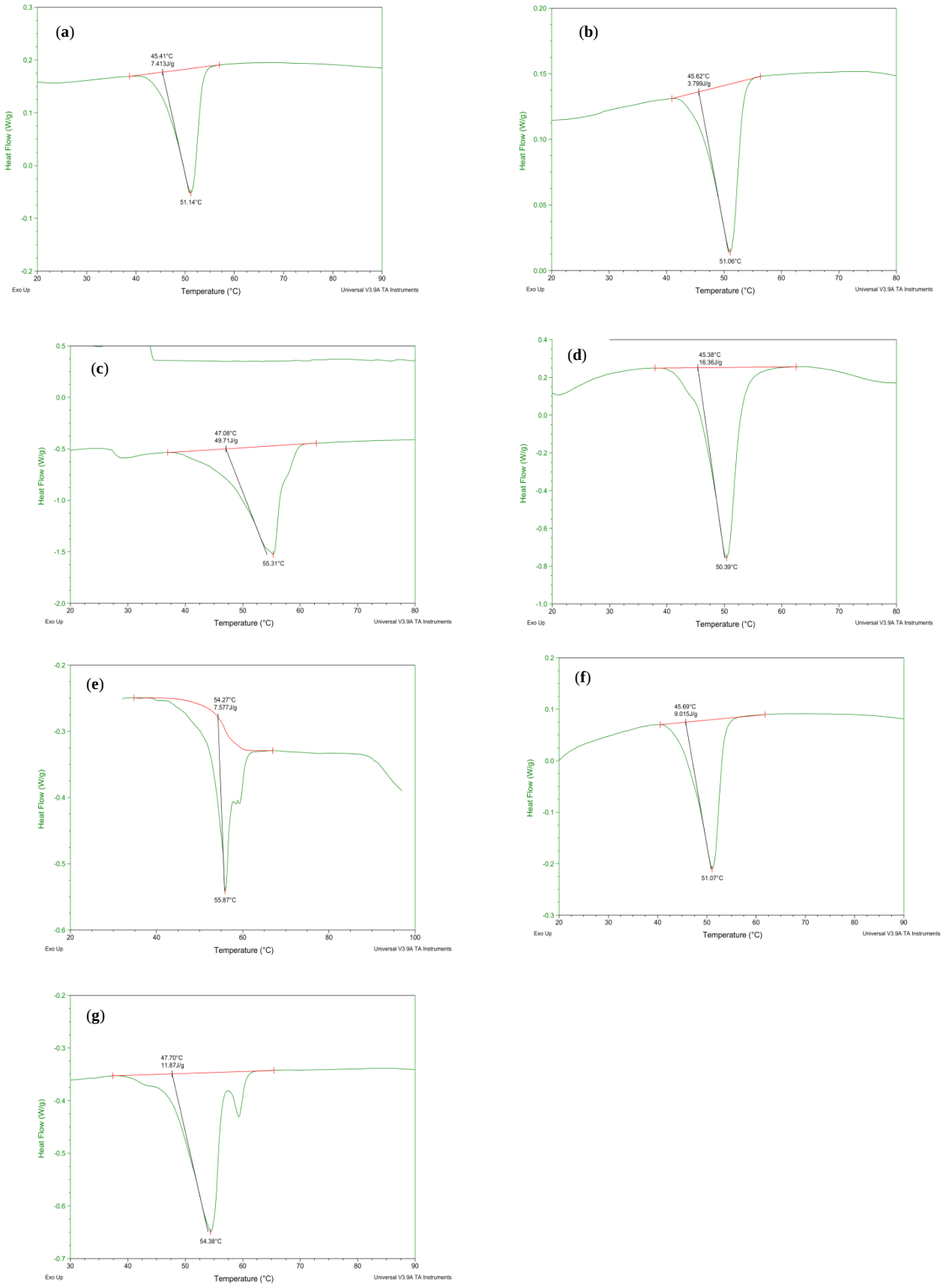

Figure 3. DSC traces of dicationic functionalised salts**:** (**a**) $[2C_8bti][BF_4]_2$ (**2b**); (**b**) $[2C_8bti][NTf_2]_2$ (**2c**); (**c**) $[2C_8bti]$[1,5-nds] (**2d**); (**d**) $[2C_8bti]$[[2,6-nds] (**2e**); (**e**) $[2C_8bti]$[1,4-bdc] (**2f**); (**f**) $[2C_8bti]$[ad] (**2h**); (**g**) $[2C_8bti]$[sub] (**2i**).

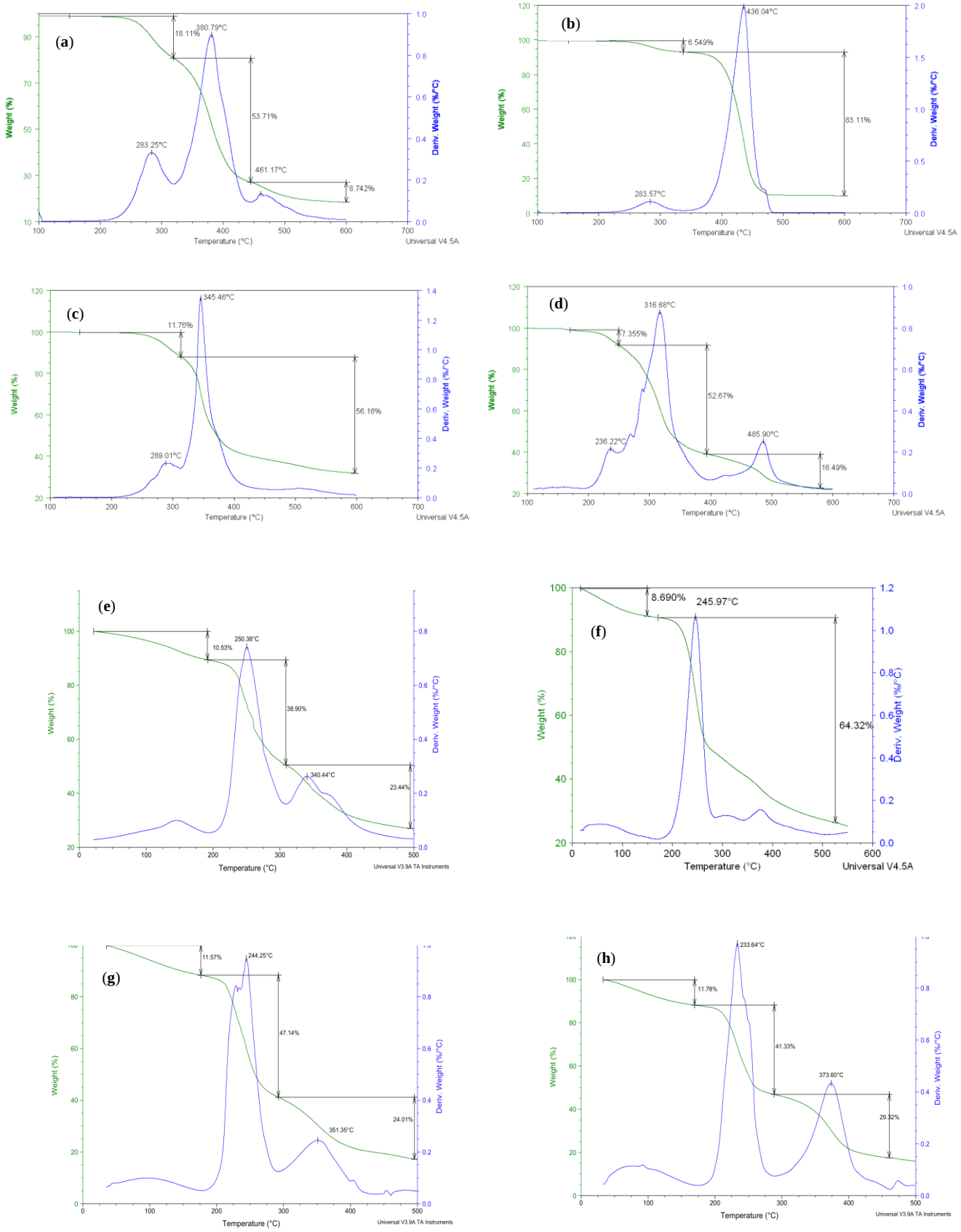

Figure 4. Traces of TGA measurements relevant to dicationic functionalised salts: (**a**) $[2C_8bti][BF_4]_2$ (**2b**); (**b**) $[2C_8bti][NTf_2]_2$ (**2c**); (**c**) $[2C_8bti]$[1,5-nds] (**2d**); (**d**) $[2C_8bti]$[[2,6-nds] (**2e**); (**e**) $[2C_8bti]$[1,4-bdc] (**2f**); (**f**) $[2C_8bti]$[2,6-ndc] (**2g**); (**g**) $[2C_8bti]$[ad] (**2h**); (**h**) $[2C_8bti]$[sub] (**2i**).

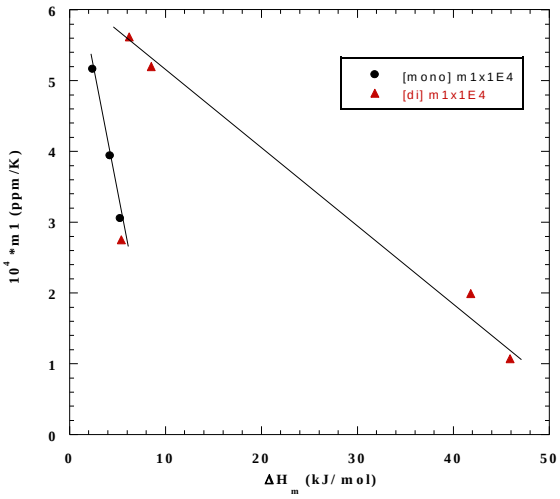

Figure 5. Plot of NMR linear correlation parameters as a function of ΔH_m values corresponding to dicationic functionalised salts**.**