Substituted Azolium Disposition: Examining the Effects of Alkyl Placement on Thermal Properties

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Supporting Information

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1. Differential scanning calorimetry (DSC) data

Abbreviations used in the figures below: SmA = smectic A phase; Iso = isotropic liquid phase. Tabulated DSC data can be found in Table 1.

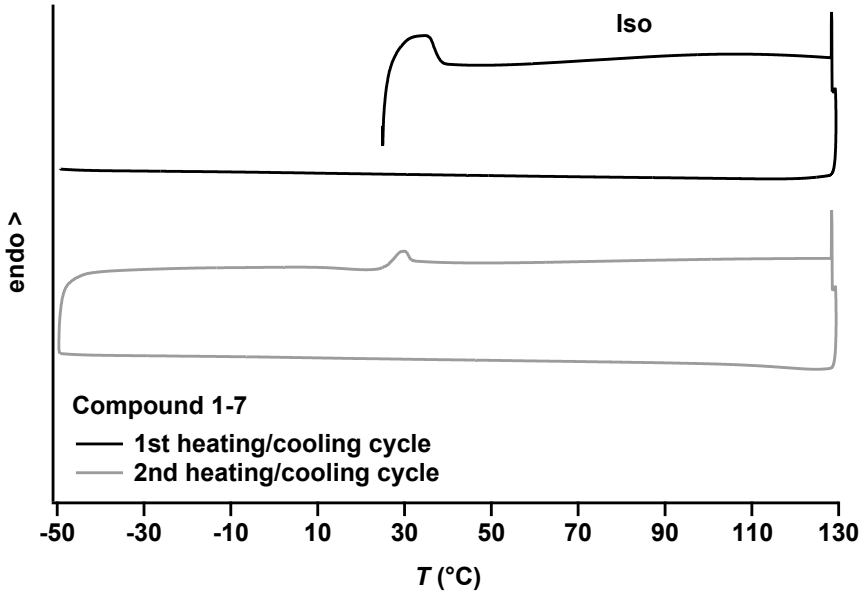

Figure S1. DSC data recorded for compound **1-7** at a heating rate of 10 °C min^{-1} and a cooling rate of 5 °C min^{-1} under an atmosphere of N_2. Endothermic peaks point upward.

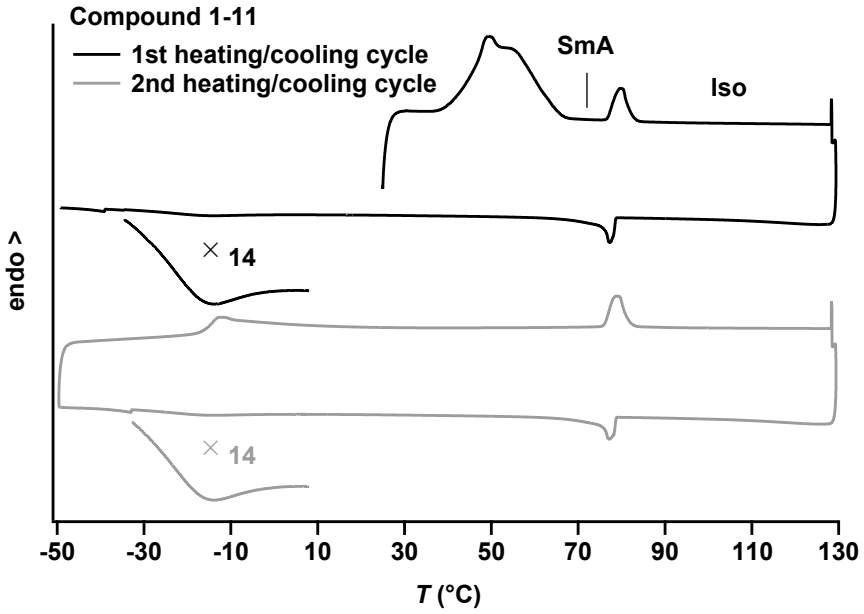

Figure S2. DSC data recorded for compound **1-11** at a heating rate of 10 °C min^{-1} and a cooling rate of 5 °C min^{-1} under an atmosphere of N_2. Endothermic peaks point upward. The third and fourth heating/cooling cycles were similar to the second heating/cooling cycle.

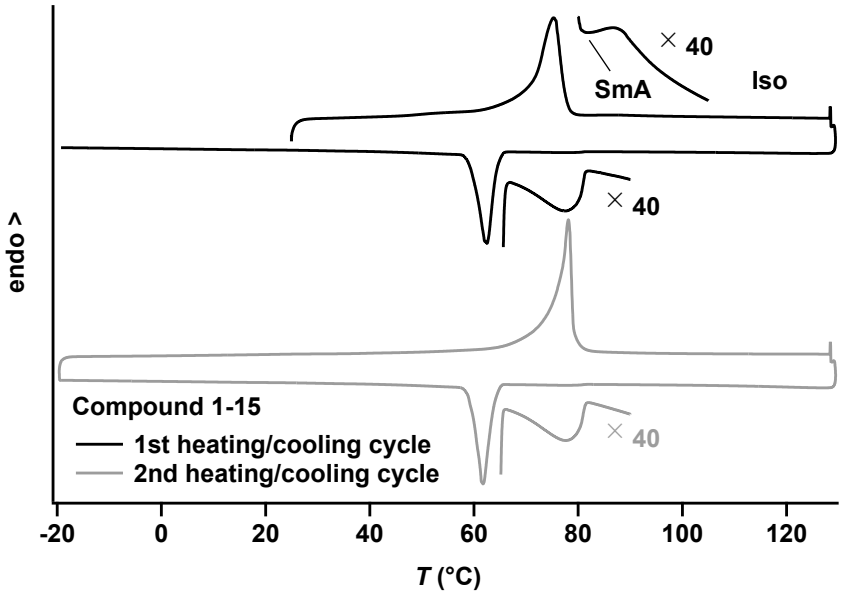

Figure S3. DSC data recorded for compound **1-15** at a heating rate of 10 °C min^{-1} and a cooling rate of 5 °C min^{-1} under an atmosphere of N_2. Endothermic peaks point upward.

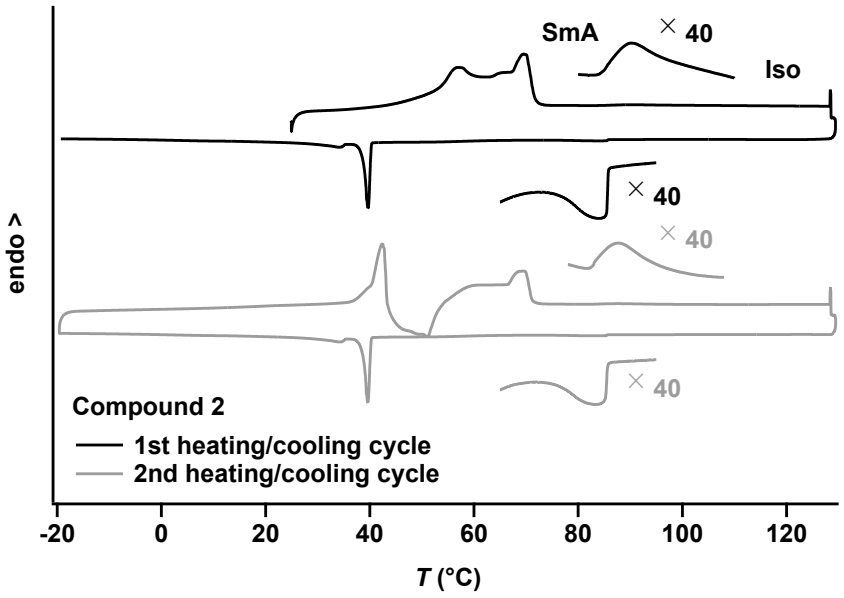

Figure S4. DSC data recorded for compound **2** at a heating rate of 10 °C min^{-1} and a cooling rate of 5 °C min^{-1} under an atmosphere of N_2. Endothermic peaks point upward.

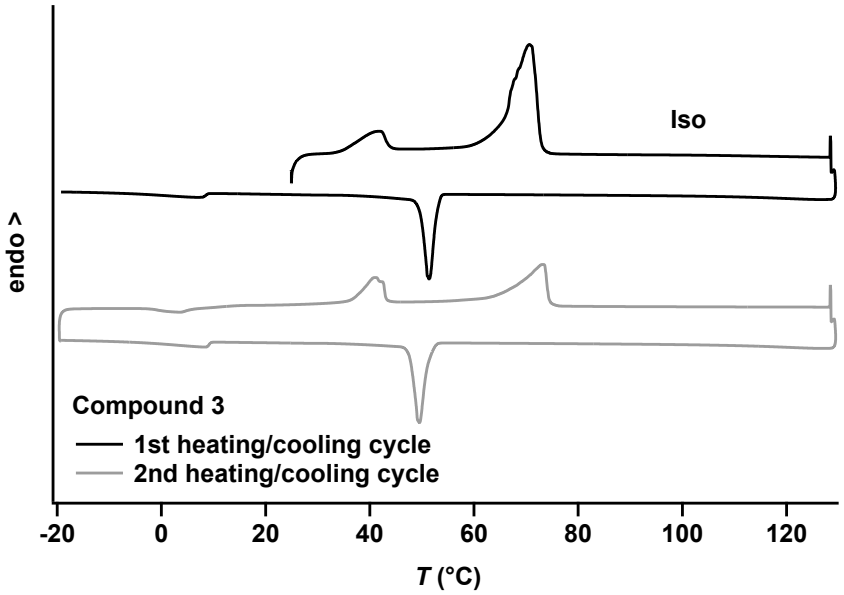

Figure S5. DSC data recorded for compound **3** at a heating rate of 10 °C min^{-1} and a cooling rate of 5 °C min^{-1} under an atmosphere of N_2. Endothermic peaks point upward.

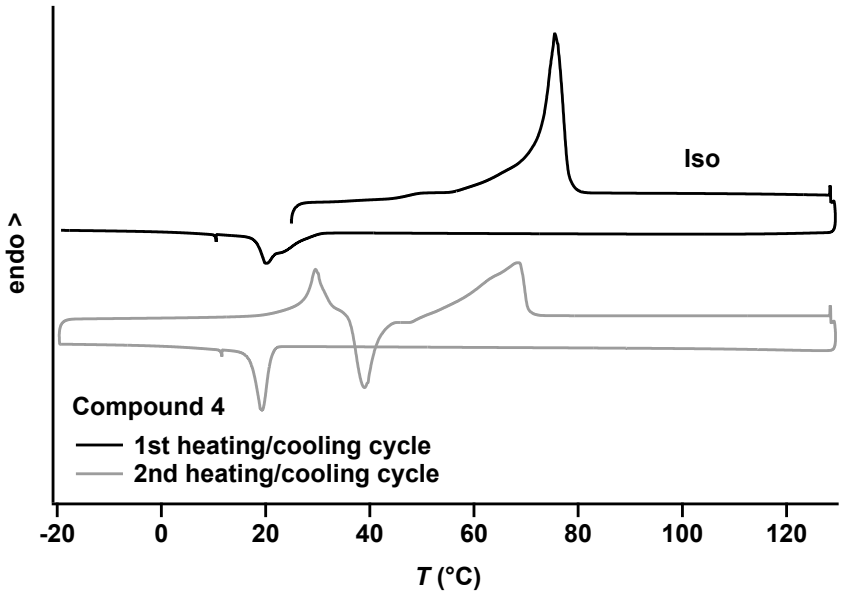

Figure S6. DSC data recorded for compound **4** at a heating rate of 10 °C min^{-1} and a cooling rate of 5 °C min^{-1} under an atmosphere of N_2. Endothermic peaks point upward.

2. Thermogravimetric analysis (TGA) data

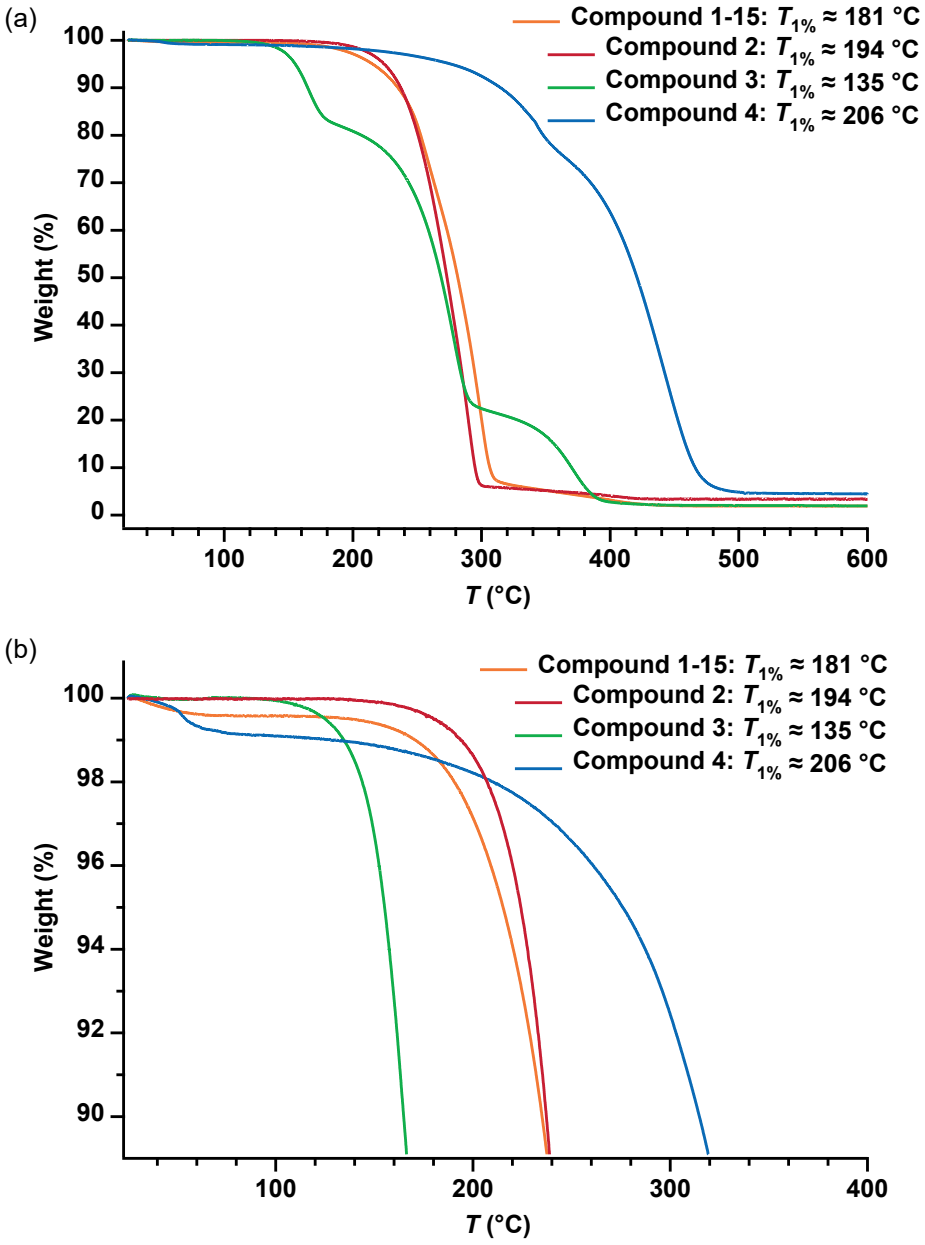

Figure S7. (a) TGA data recorded for compounds **1-15** and **2**–**4** (heating rate of 5 °C min^{-1}; N_2 atmosphere). The $T_{1\%}$ value represents the temperature at which 1% weight loss was measured (neglecting the initial small weight loss attributed to the release of H_2O). The observed weight losses for compound **3** are consistent with the expulsion of CH_3I as a first step of decomposition. (b) Enlarged view showing the initial weight losses recorded for compounds **1-15** and **2**–**4**.

3. Synchrotron-based small- to wide-angle X-ray scattering (SWAXS) data

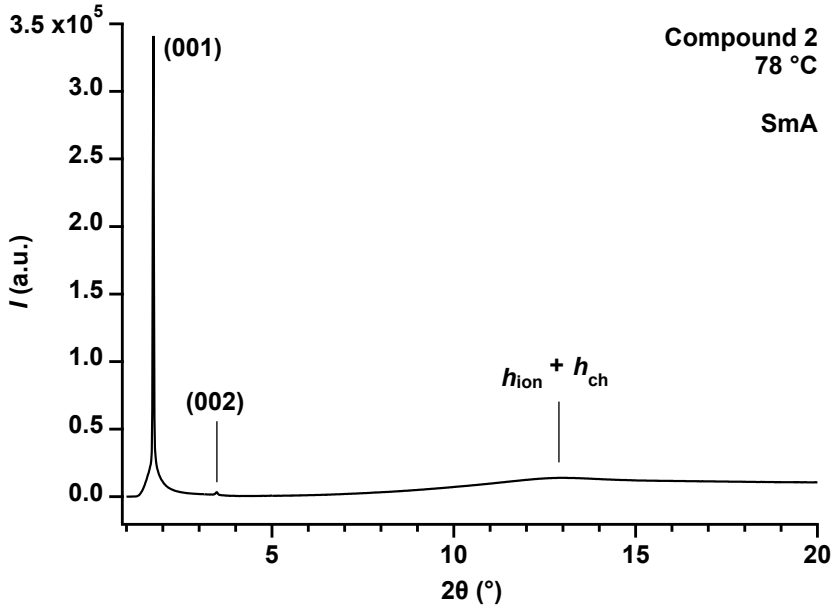

Figure S8. Synchrotron-based SWAXS data that were recorded for the SmA phase of compound **2** at 78 °C (the X-ray wavelength used was 1.00 Å).

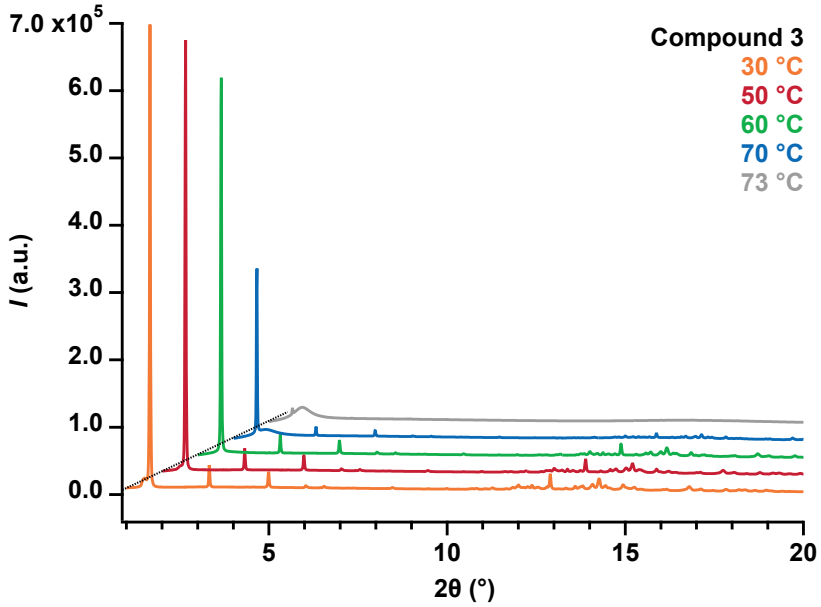

Figure S9. Synchrotron-based SWAXS patterns that were recorded for compound **3** at different temperatures (the X-ray wavelength used was 1.00 Å).