EFFECT OF SOLVENT ISOMER ON THE GELATION PROPERTIES OF TRI-ARYL AMINE ORGANOGELS AND THEIR HYBRID THERMOREVERSIBLE GELS WITH POLY[VINYL CHLORIDE].

SUPPLEMENTARY INFORMATION

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Keywords : hybrid materials, PVC, thermoreversible gels, organogels, arylamines, solvent type

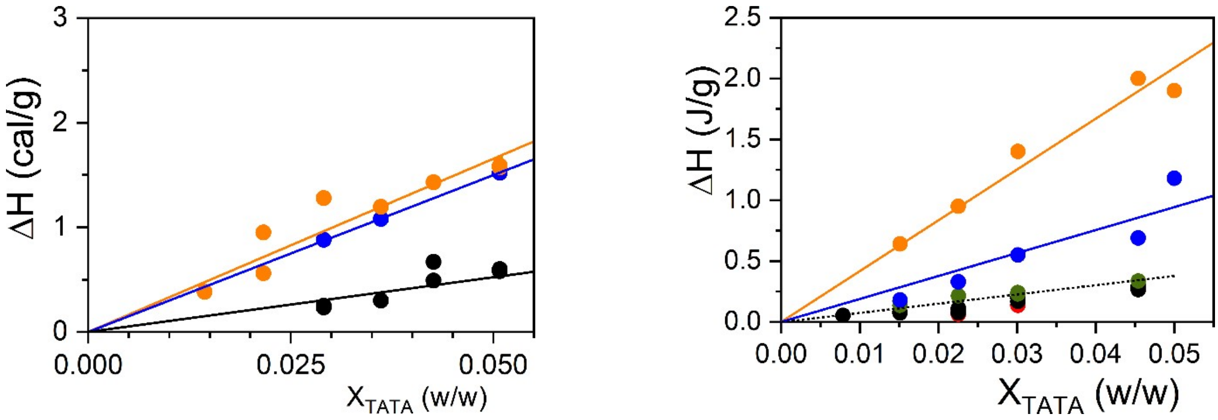

Figure S1: enthalpies of the different events in TATA/DCB gels. *left*:TATA/*m*DCB, ● for T= 51°C, ● for T= 109°C, ● for terminal melting. *Right*: TATA/*o*DCB, ● for T= 16°C, ● for T= 37°C, ● for T= 61°C, ● for T= 85°C, ● for terminal melting.

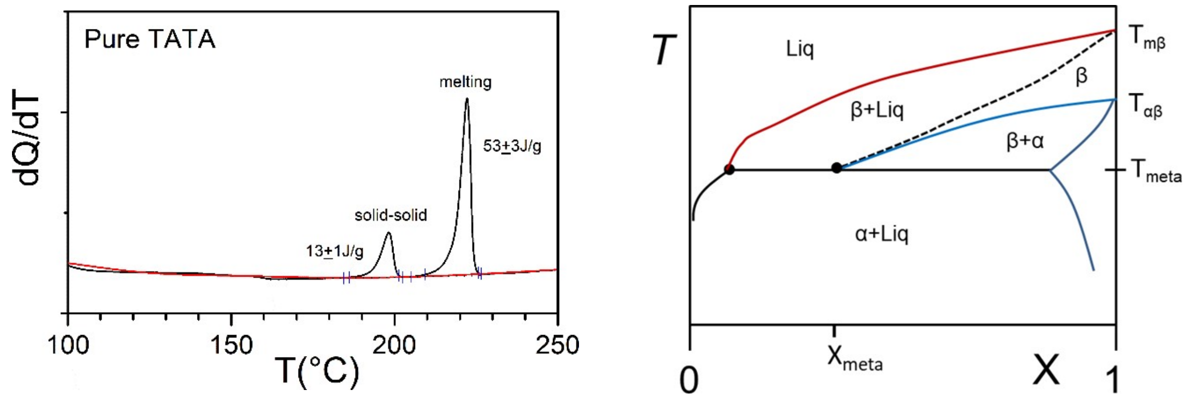

Figure S2: *left*, DSC endotherm showing the existence of a solid-solid transformation related to the existence of two crystalline structure in solid TATA. *Right*: a theoretical phase diagram presenting a metatectic transformation due to the existence of two crystal structures α and β.

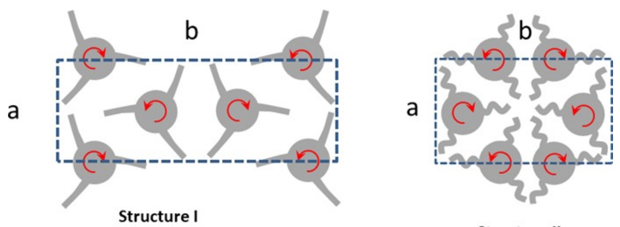

Figure S3: structures in the solid state for: *left*: after crystallization from a mixture of solvents, *right* at 200°C after the solid-solid transition seen in figure S2 left (ref. 15).

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component	TATA	o-DCBH	o-DCBD	PVC
$A = \sum b_i$ x10^{12} cm	8	4.4	8.59	1.17
A/v_m	0.011	0.039	0.077	0.030
Z_e/v_m	0.583	0.68	0.68	0.71

Table ST1: Scattering amplitudes[34] of the different components used in the present study obtained by summing the scattering length (b_i) of the constituting atoms, together with the amplitude per unit molar volume (v_m), and the number of electrons (Z_e) per unit molar volume. The latter allows comparison between the different radiations and components.

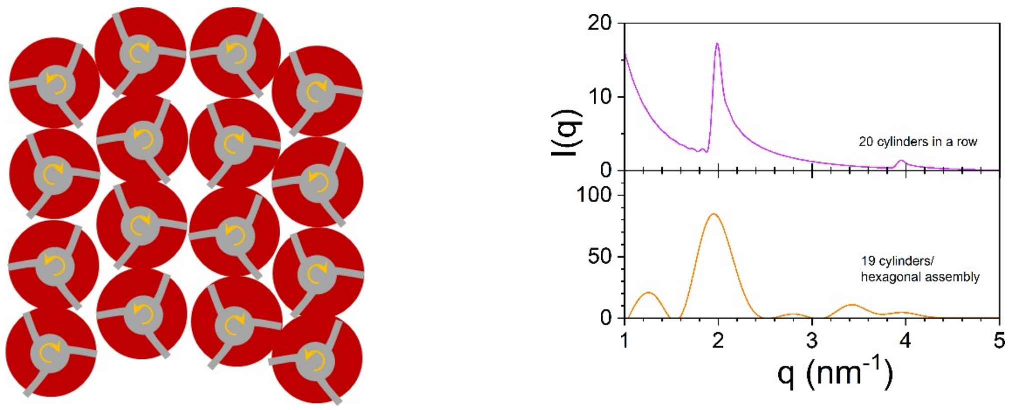

Figure S4: A tentative model for the molecular compound (left) based on recent calculations indicating that the helical structures may arrange in rows[15]. Right: calculation performed with equation 3 for helices arranged in rows, or in hexagonal packing.

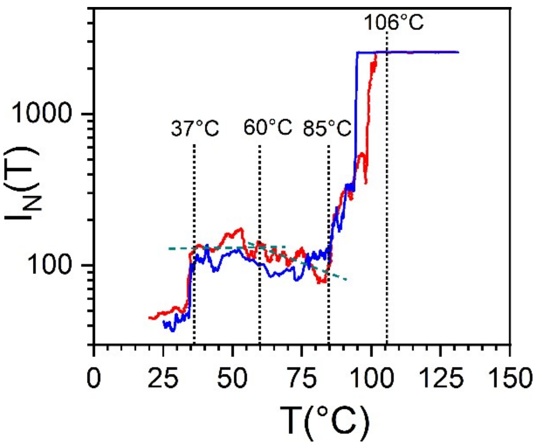

Figure S5: Turbidity determination for TATA/oDCB. The optical setup allows measurement of the light intensity attenuation by means of a collimated monochromatic laser beam ($\lambda = 632.8$ nm) shined onto a 5 mm-thick cuvette containing the sample. The transmitted light is collected onto a CCD camera. The samples are heated (red curve) at 130 °C and then cooled (blue curve) to room temperature at a rate of about 1.4−1.5 °C/min. A slight increase of transmission is seen at 37°C corresponding to the C2 $\Rightarrow$ C3 transformation. The other transformation are also indicated by dotted lines, T+ 106°C being the terminal melting.

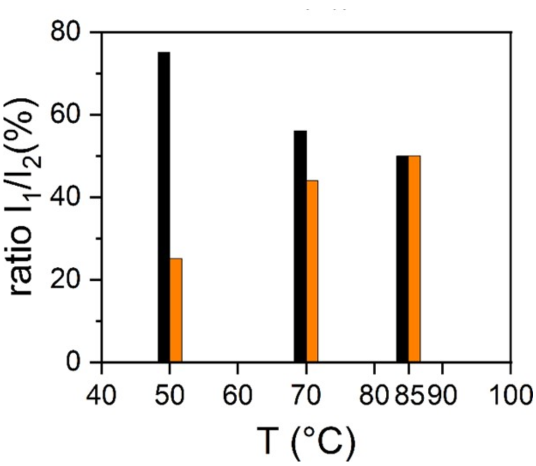

Figure S6: ratio of the intensities I_1/I_2 of peaks at q= 3.439 nm^{-1} (black) vs peak at q= 3.704 nm^{-1} (orange) at different temperatures (x axis) from figure 3 upper right. The relative intensities have been calculated by taking the peak surface once fitted by a Lorentzian function.

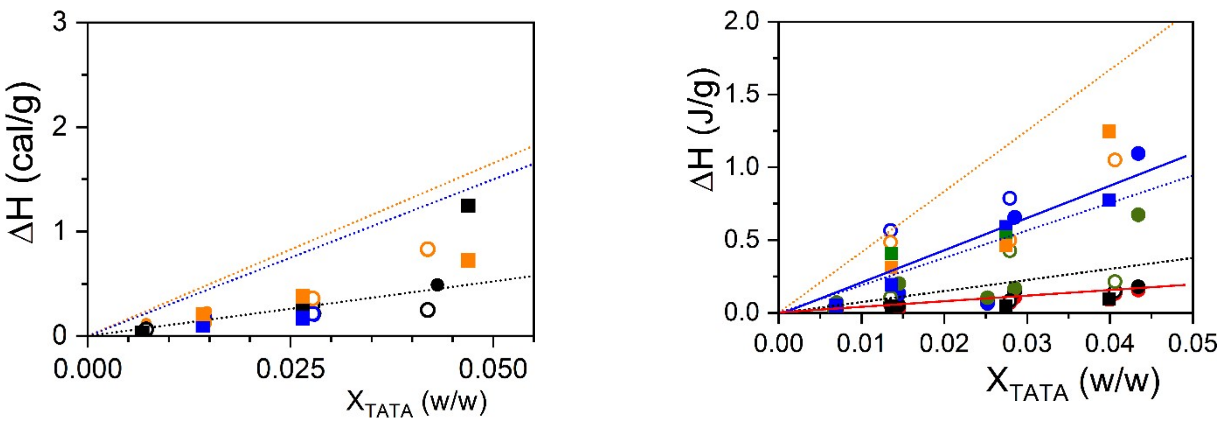

Figure S7: enthalpies of the different events in TATA/DCB gels. *left*: TATA/PVC/*m*DCB, PVC5% ● for T= 51°C, ● for T= 109°C, ● for terminal melting; PVC10% ○ for T= 51°C, ○ for T= 109°C, ○ for terminal melting; PVC15% ■ for T= 51°C, ■ for T= 109°C, ■ for terminal melting. *Right*: TATA/PVC/*o*DCB, PVC5%, ● for T= 16°C, ● for T= 37°C, ● for T= 61°C, ● for T= 85°C, ● for terminal melting; PVC10%, ○ for T= 16°C, ○ for T= 37°C, ○ for T= 61°C, ○ for T= 85°C, ○ for terminal melting; PVC15%, ■ for T= 16°C, ■ for T= 37°C, ■ for T= 61°C, ■for T= 85°C, ■ for terminal melting.