

Supplementary information

EVIDENCE BY NEUTRON DIFFRACTION OF MOLECULAR COMPOUNDS IN TRIARYLAMINE TRIS-AMIDE ORGANOGELS AND IN THEIR HYBRID THERMOREVERSIBLE GELS WITH PVC.

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component	TATA	BrBzH	BrBzD	o-DCBH	o-DCBD	TCEH	TCED	PVC
$A = \sum b_i \times 10^{12} \text{ cm}$	8	2.8	8.03	4.4	8.59	4.41	6.51	1.17
$\frac{A}{v_m}$	0.011	0.0264	0.076	0.039	0.077	0.042	0.062	0.030
$\frac{Z_e}{v_m}$	0.583	0.72	0.72	0.68	0.68	0.78	0.78	0.71

Table S1: Scattering amplitudes¹⁸ 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 allow comparison between the different radiations and components.

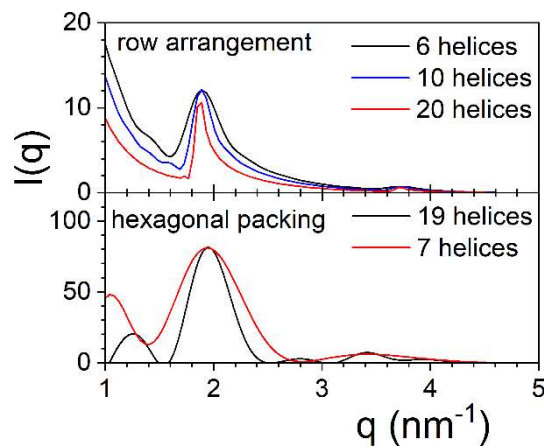


Figure S1: theoretical curves for hexagonal packing and for arrangement in a row calculated from relation 4. The number of helices is indicated.

q_{BrBZH}	d_{BrBZH}	q_{BrBZD}	d_{BrBZD}	q_{oDCBH}	d_{oDCBH}	q_{oDCBD}	d_{oDCBD}
1.96	3.2	1.96	3.2	2.005	3.134	2.005	3.134
		3.469	1.81	<i>3.38</i>	<i>1.859</i>	3.366	1.867
		5.76	1.091	<i>5.48</i>	<i>1.146</i>	5.483	1.146

Table S2: Diffraction peaks position q (nm^{-1}) in TATA/BrBZ and TATA/o-DCB at $T= 20^\circ\text{C}$, and the corresponding distances (nm) calculated by means of Bragg's law. Values in red italics indicate very weak peak.

q_{exp} (nm^{-1})	d_{exp} (nm)	I (q)	hk	FWHM	d_{cal} (nm)	Lattice parameters TATA/TCE	Lattice parameters structure I ¹³
2.22	2.86	S	11	0.17	2.86	Orthorhombic $a = 2.98$ nm $b = 10.04$ nm $\gamma = 90^\circ$	Orthorhombic $a = 2.78$ nm $b = 7.85$ nm $\gamma = 90^\circ$
2.5	2.51	S	04	0.13	2.51		
2.94	2.14	VS	13	0.15	2.22		
3.67	1.71	VS	06 15	0.15	1.674 1.665		
6.281	1.00	W	31	0.12	0.989		
6.59	0.95	W	28	0.13	0.960		
7.37	0.852	W	0,12	0.13	0.837		

Table S3: Tentative structure in TATA/TCEH at 20°C based on the structure I previously published¹³. q_{exp} , d_{exp} , q_{cal} , d_{cal} : experimental and calculated scattering vectors and spacings from peak position; I: intensity of reflection, signal intensity code: VS = very strong, S = strong, W = weak, hk are the Miller indices of the reflections; a , b , γ , lattice parameters. The lattice parameters of structure I from reference 13 are also given. Basically, only the reflections satisfying $h+k=2n$ are present.

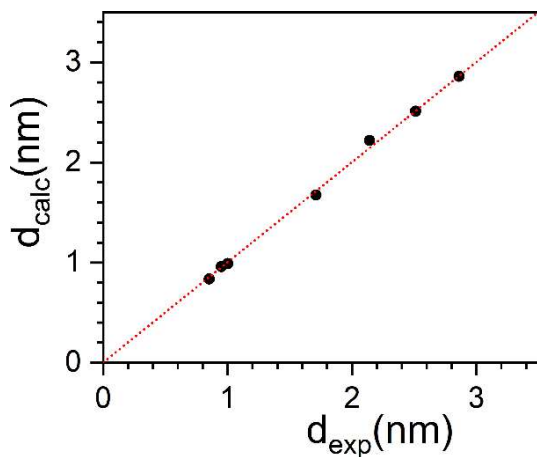


Figure S2: distance d_{calc} calculated with the above unit cell for TATA/TCE ($a = 2.98$ nm, $b = 10.04$ nm, $\gamma = 90^\circ$) versus the experimental values d_{exp} . Fit performed with a straight line of fixed slope of 1 and of intercept 0 gives a coefficient of determination $R^2 = 0.9980$. Conversely, a linear fit with a fixed intercept (0) gives a slope of 1.004, and a coefficient of determination $R^2 = 0.9998$.

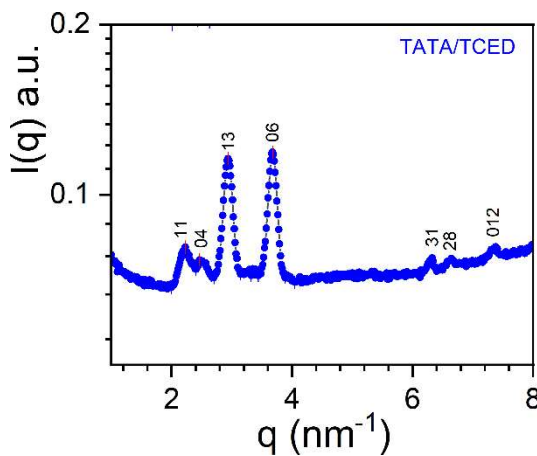


Figure S3: Indexation of the hk planes with the reflections corresponding to $h+k=2n$.

q_{exp} (nm ⁻¹)	d_{exp} (nm)	I (q)	hk	d_{cal} (nm) from lattice parameters of Structure I ¹³	Lattice parameters of structure I ¹³
2.449	2.56	VS	<i>11</i>	2.67	Orthorhombic $a = 2.78$ nm $b = 7.85$ nm $\gamma = 90^\circ$
3.25	1.933	S	<i>04</i>	1.96	
4.79	1.31	M	<i>22</i>	1.335	

Table S4: Diffraction peaks from PVC20/TATA/TCE at T= 50°C. Positions of peaks q_{exp} , and the corresponding distance d_{exp} , I(q): intensity of reflection, signal intensity code: VS = very strong, S = strong, M= middle, the corresponding Miller indices, and d_{cal} calculated with the lattice parameter of structure I¹³. Note that the 13 reflection is absent possibly due to a distortion of the unit cell.