

The behavior of thermoresponsive star-shaped poly-2-isopropyl-2-oxazoline in saline media

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Concentration calculations

Volume concentration 0.0050 g ml^{-1} of PiPrOx solutions was recalculated to molar concentration using weight-average molecular weight $M_w = 16300 \text{ g mol}^{-1}$:

$$\begin{aligned} 0.0050 \text{ g ml}^{-1} &= 0.0050/16300 \text{ mol ml}^{-1} = 3.07 \times 10^{-7} \text{ mol ml}^{-1} = 3.07 \times 10^{-4} \text{ mol dm}^{-3} = \\ &= 0.307 \times 10^{-3} \text{ M}. \end{aligned}$$

NaCl solutions of concentration 0.33×10^{-3} , 2.47×10^{-3} and $39.3 \times 10^{-3} \text{ M}$ were obtained by a dilution of 0.9 % (0.154 M) NaCl solution for injection, delivered in ampoules. After that, solutions of PiPrOx of 0.0050 g ml^{-1} , *i.e.* 0.307 M, were prepared separately in each of these saline solvents.

Average salt content respect to polymers:

PiPrOx in 0.33 mM NaCl: 1.1 salt molecule per 1 macromolecule

PiPrOx in 2.47 mM NaCl: 8.0 salt molecule per 1 macromolecule, *i.e.* 1.0 salt molecule per 1 arm

PiPrOx in 39.3 mM NaCl: 128 salt molecule per 1 macromolecule, *i.e.* 16 salt molecule per 1 arm and 1 salt molecule per 1 monomer unit of isopropyl-2-oxazoline

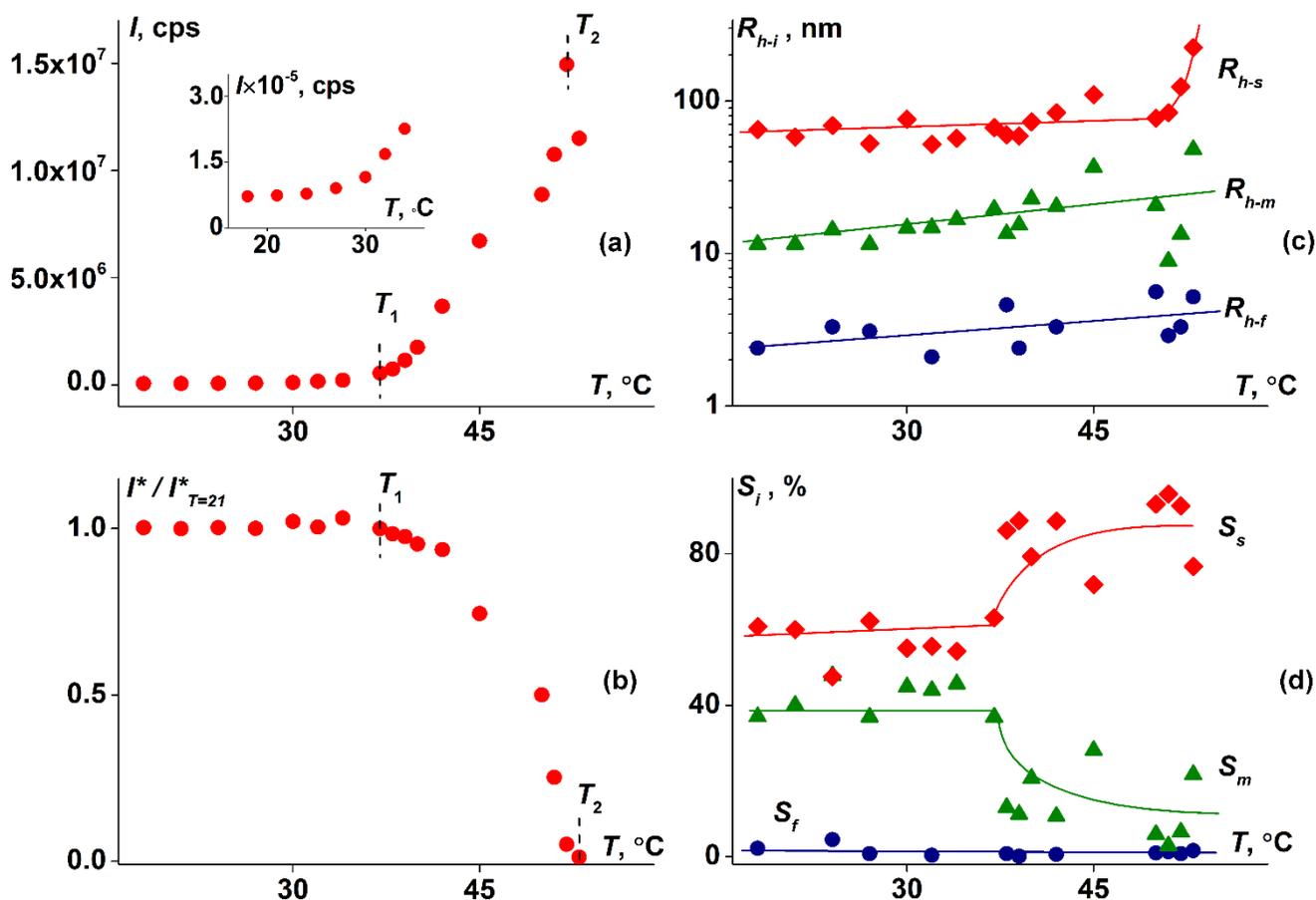


Figure 1S Temperature dependences of scattering intensity I (a), relative transmitted light intensity I^* (where $I^*_{T=21}$ is the value measured at $T = 21$ $^{\circ}\text{C}$) (b), hydrodynamic dimensions R_{h-i} of the scattering objects (c) and their contribution S_i to summary light scattering (d) for aqueous solution of PiPrOx at concentration $c = 0.002 \text{ g ml}^{-1}$.

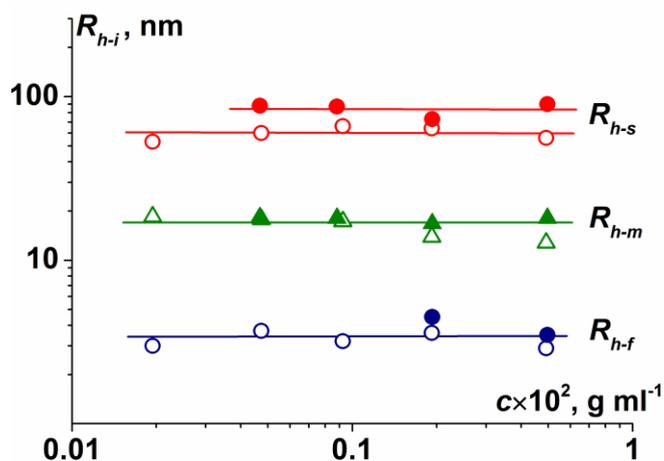


Figure 2S Hydrodynamic radii of fast (R_{h-f}), middle (R_{h-m}) and slow (R_{h-s}) modes at $T = 21$ $^{\circ}\text{C}$ in aqueous (open symbols) and 0.154 M NaCl (closed symbols) solutions.

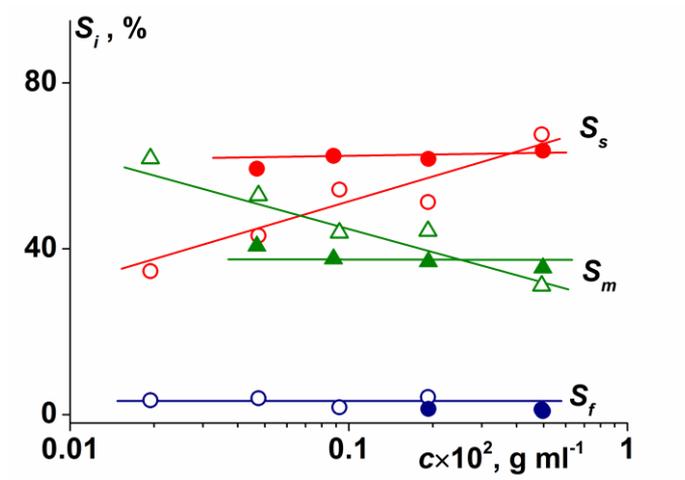


Figure 3S Contributions of fast (R_{h-f}), middle (R_{h-m}) and slow (R_{h-s}) modes to light scattering at $T = 21^\circ\text{C}$ in aqueous (open symbols) and 0.154 M NaCl (closed symbols) solutions.