Supplementary Material (ESI) for Soft Matter

Supplementary Information for Gelation processes in the non-stoichiometric polylectrolyte – surfactant complex between κ-carrageenan and dodecyltrimethylammonium chloride in KCl

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Turbidity Measurements

Turbidity measurements were performed at 450nm using a UV/Visible Spectrometer (UNICAM, Mod. UV-540) equipped with a Peltier system for temperature control. Quartz cells (optical path: 1 cm) were used. Firstly the samples were held at 75°C for 30 min, then cooled to 25°C at 0.2°C/min, and afterwards heated up to 75°C at the same heating rate.

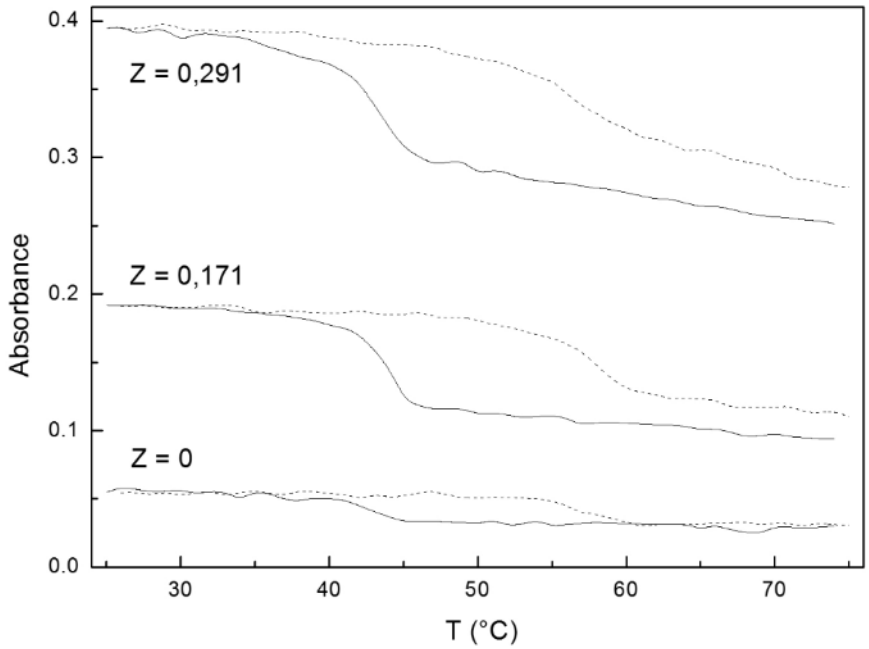

Figure SI-1. Dependence of turbidity with temperature on cooling (solid line) and heating (dashed line) processes for 0.5% (w/w) κ-carrageenan/DTAC complexes in 30mM KCl at different compositions as labeled in the figure.

Optical Rotation

The optical rotation of the stock of κ-carrageenan and PSC solutions were measured in a Perkin Elmer Polarimeter (Mod. 341, 50 Hz), controlled by external circulatory bath. The solutions were loaded to a quartz cell with an optical trajectory of 10 cm, λ = 365 nm (Hg lamp) The test consisted of cooling-heating cycle (85-10-85 °C) with isotherms of 10 minutes and a scanning rate of 2 °C..

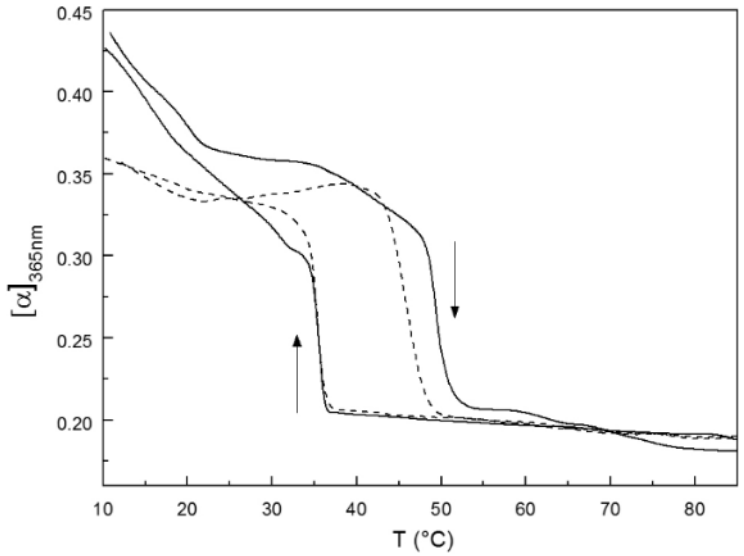

Figure SI-2. Dependence of optical rotation with temperature on cooling (up arrow) and heating (down arrow) process for 0.5% (w/w) κ-carrageenan solution (Z = 0; dotted line) and a NPSC (Z=0.171; solid line) in 30mM KCl.