Supplementary Material (ESI) for Soft Matter

Supporting Information

Thermally Activated Diffusion in Reversibly Associating Polymers

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Experimental

^{1}H NMR analysis to determine UPy or DMPU side-group content in synthesized copolymers

^{1}H NMR was taken using $CDCl_3$ as solvent. Examples of RAC-2 and CCP-2 ^{1}H NMR spectra are shown in Fig. S1 and Fig. S2. For RAC copolymers, the content of UPy was determined by comparing three N-H signals on the UPy ring (present around 10-13 ppm) to the O-CH_2 signal. For CCP copolymers, the content of DMPU was determined by comparing the C-H signal of the aromatic ring at around 6.8 ppm to the O-CH_2 signal.

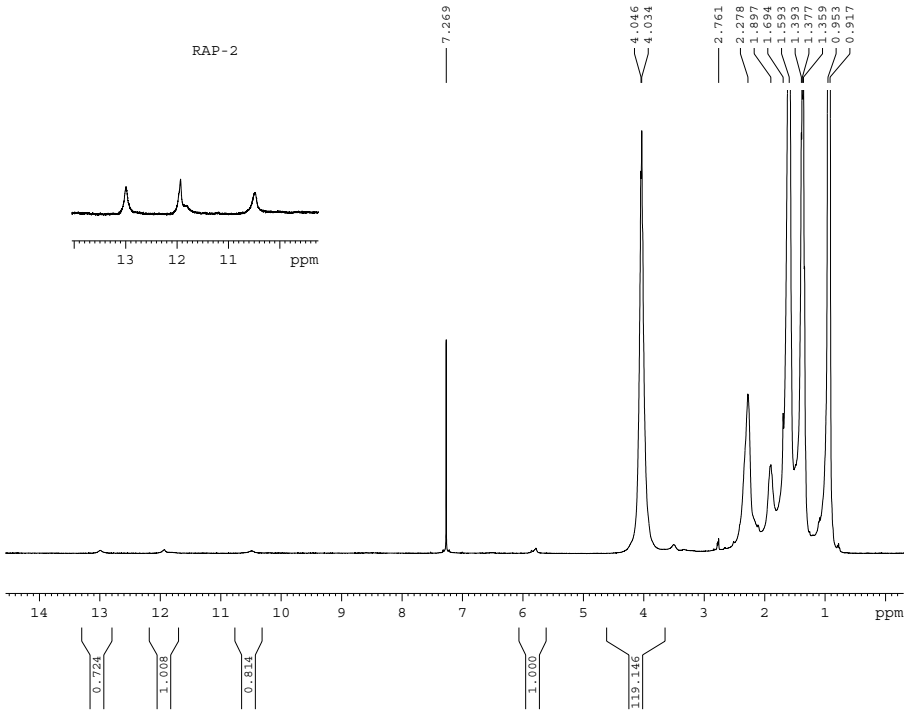

Fig. S1 ^{1}H NMR spectrum for RAP-2

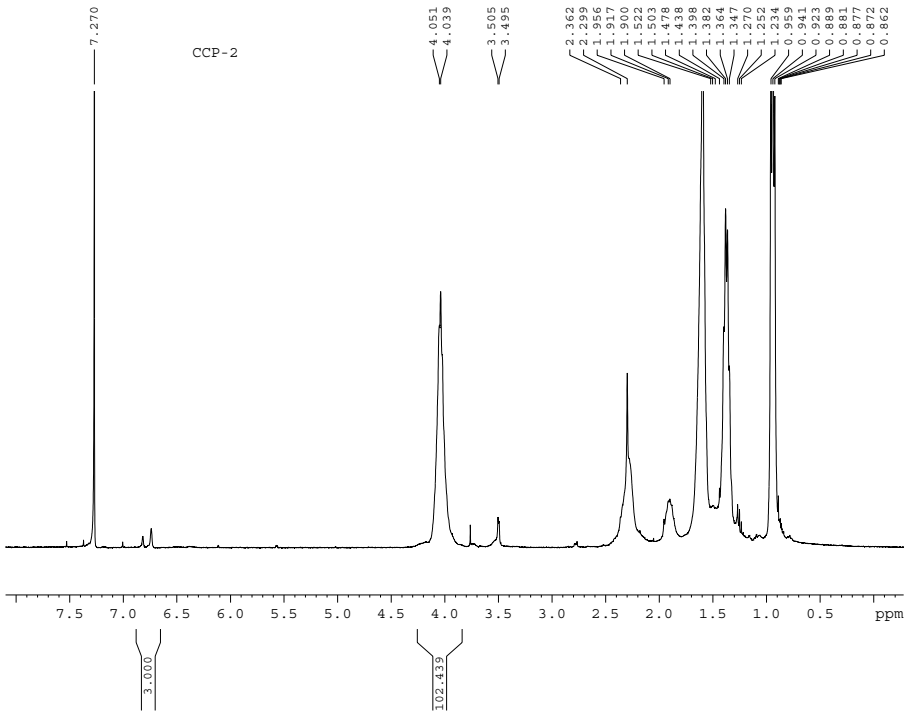

Fig. S2 ^{1}H NMR spectrum for CCP-2

Gel permeation chromatography (GPC) to determine polymers molecular weights

GPC chromatograms of each synthesized polymer were obtained using a Viscotek Agilent 1100 GPC system using THF as eluent and the universal calibration method. Conditions: Polymer concentration 1 mg/ml, volume 100 µl, rate 1ml/min, column temperature 60 °C.

Viscosity measurements

Linear viscosity was measured using TA G-II Rheometer. Polymer melt samples were placed under a standard 25 mm stainless steel plate with 800 µm gap. The experiment was run under steady-shear mode with angular velocity of 0.1 rad/s. Temperature ramps from 20 – 80 °C at a rate of 5 °C/min (10 °C /min for CCP-1 and CCP-2 samples).