Supplementary Information

Supramolecular Networks from Block Copolymers Based on Styrene and Isoprene Using Hydrogen Bonding Motifs – Part 1: Synthesis and Characterization

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Figure S1: ¹H NMR spectra of PI-Precursor (red), PI-b-PS-Precursor (green) and Is₆₀Is₆₂ (blue) in CDCl₃. Spectra of PI-Precursor and PI-b-PS-Precursor were normalized to PI signals. Spectra of PI-b-PS-Precursor and Is₆₀Is₆₂ were normalized to aromatic protons of polystyrene (6.2–7.2 ppm, 5H).
Figure S2: $^1$H NMR spectra of S91I967 (black), and after hydroxylation with different degree of modification (0%, 13%, 18%, 29%, and 35%) in CDCl$_3$. Hydroxylation of 3,4-PI (signal at 4.45–4.65 ppm) is favoured. Spectra were normalized to aromatic protons of polystyrene (6.2–7.2 ppm, 5H).

Figure S3: $^1$H NMR spectra of unfunctionalized (black), hydroxylated (blue) and with succinic anhydride carboxylated (red) I5S90I562 in CDCl$_3$. Spectra were normalized to aromatic protons of PS (6.2–7.2 ppm, 5H).
Figure S4: (a) $^1$H NMR spectra of S85I1551 (black), after hydroxylation (blue), and after reaction with CDI (orange) and DETA (green) in CDCl$_3$. (b) $^1$H NMR spectra of CDI-functionalized S85I1551 (top), and after addition of DAP with reaction times of 7 h, 3 d and 4 d (from top to the bottom) in CDCl$_3$. $^1$H NMR spectra were normalized to aromatic protons of PS (6.2–7.2 ppm, 5H).
Figure S5: ATR-FTIR spectra of S$_{\text{H}_{\text{L}}}$ before (black) and after (blue) hydroxylation ($D_{f} = 30\%$). Characteristic decrease of PI related bands can be observed, for example, at 1645 and 890 cm$^{-1}$. Both bands can be assigned to the main 3,4-addition product of PI. (a) Complete spectra and (b) enlarged area of (a) at 1800–800 cm$^{-1}$.
Figure S6: Full range temperature dependent FTIR spectra of 1:2Sn:1L2.82-SA (D1 = 33%). Temperature range was 30 to 110 (a) and to 30 °C (b) with 10 °C steps, and a 15 min isothermal hold at each temperature.
Figure S7: Full range temperature dependent FTIR spectra of IswIs62-DETA ($D_t = 32\%$). Temperature range was 30 to 110 (a) and to 30 °C (b) with 10 °C steps, and a 15 min isothermal hold at each temperature.