Selective Substitution of Hex_2SiFCl for the Preparation of Polymers with Two Different Alternate π-Electron Systems Linked by Hex_2Si Units

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Organosilicon polymers having a regular alternate arrangement of $–Hex_2Si–\pi–Hex_2Si–\pi'–$ (π, π' = π-electron system) were prepared by successive treatment of Hex_2SiFCl with dilithiated π-conjugated compounds, $Li–\pi–Li$ and $Li–\pi'–Li$ (π = diethynylanthracene, diethynylpyrene, diethynylcarbazole; π' = bithiophenediyl, terthiophenediyl). UV-vis absorption spectra and cyclic voltammograms of the resulting polymers indicated that the two π-electron systems, π and π', are electronically isolated, while the emission spectra indicated that energy transfer between the π-electron systems occurred in the excited states.

Key words: Organosilicon Polymers, Chlorofluorosilanes, Selective Addition