Abstract Submitted
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Ordered Helices in Chiral σ-conjugated Polysilanes[1] WITHOON CHUNWACHIRASIRI, MICHAEL WINOKUR, Dept. of Physics, University of Wisconsin, JOSEF MICHL, University of Colorado at Boulder, JULIAN KOE, International Christian University — Molecular modeling of studies of poly[(S)-2-methylalkyl(n-alkyl′)]silanes identify a tacticity insensitive steric packing constraint that underlies the existence of highly ordered helices in these polymers. Thus this family of polymers is dominated by extended repeating sequences of the D+/g-g- (main chain deviant, side chain gauche/gauche) conformational isomer. Solid-state films of poly[(S)-2-methylbutyl(nonyl)]silane have been studied by optical spectroscopy. Sharp photoabsorption and photoluminescence peaks are observed at both ambient and reduced temperatures. The observed photoabsorption and photoluminescence spectra are interpreted using Hückel molecular orbital theory.

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