Chain Trajectory of Semicrystalline Polymers As Revealed by Solid-State NMR Spectroscopy\textsuperscript{1}

TOSHIKAZU MIYOSHI\textsuperscript{2}, The University of Akron

Over the last half century, chain-folding structure of semicrystalline polymers is debatable of matter in polymer science. Recently, 13C-13C double quantum (DQ) NMR spectroscopy combined with 13C selective isotope labeling has been developed to investigate re-entrance sites of the folded chains, mean values of adjacent re-entry number $<n>$ and fraction $<F>$ of semi-crystalline polymers. This viewpoint highlights the versatile approaches using NMR and 13C isotope labeling for revealing i) chain trajectory in melt- and solution-grown crystals, ii) conformation of the folded chains in single crystals, iii) self-folding in the early stage of crystallization, and iv) unfolding of folded chains under stretching.

\textsuperscript{1} NSF DMR 1408855
\textsuperscript{2} I am APS member but I am traveling now. I can not access my password.