Measuring methods available and examples of their applications

^{13}C NMR structure characterization of polyolefines

Quantitative measurement of ^{13}C NMR spectra is performed in our laboratory using a 10 mm dual 13C-{1H} NMR probehead on the NMR Bruker AVANCE III 500 spectrometer at the field of 11.74 T (500 MHz and 125 MHz for ^{1}H and ^{13}C nuclei, respectively). The analysis of the NMR data enables to characterize various polyolefins such:

- ^{13}C NMR structure characterization of polyethylene (HDPE, LDPE, LLDPE): determination of comonomer(s), number of side chain branches
- ^{13}C NMR characterization of poly(ethylene-propylene) block and random copolymers: calculation of ethylene and propylene content, sequence length distribution
- ^{13}C NMR tacticity characterization of polypropylene on the level of pentads

The detailed analysis of these NMR data is performed by Polymer Institute Brno. www.polymer.cz

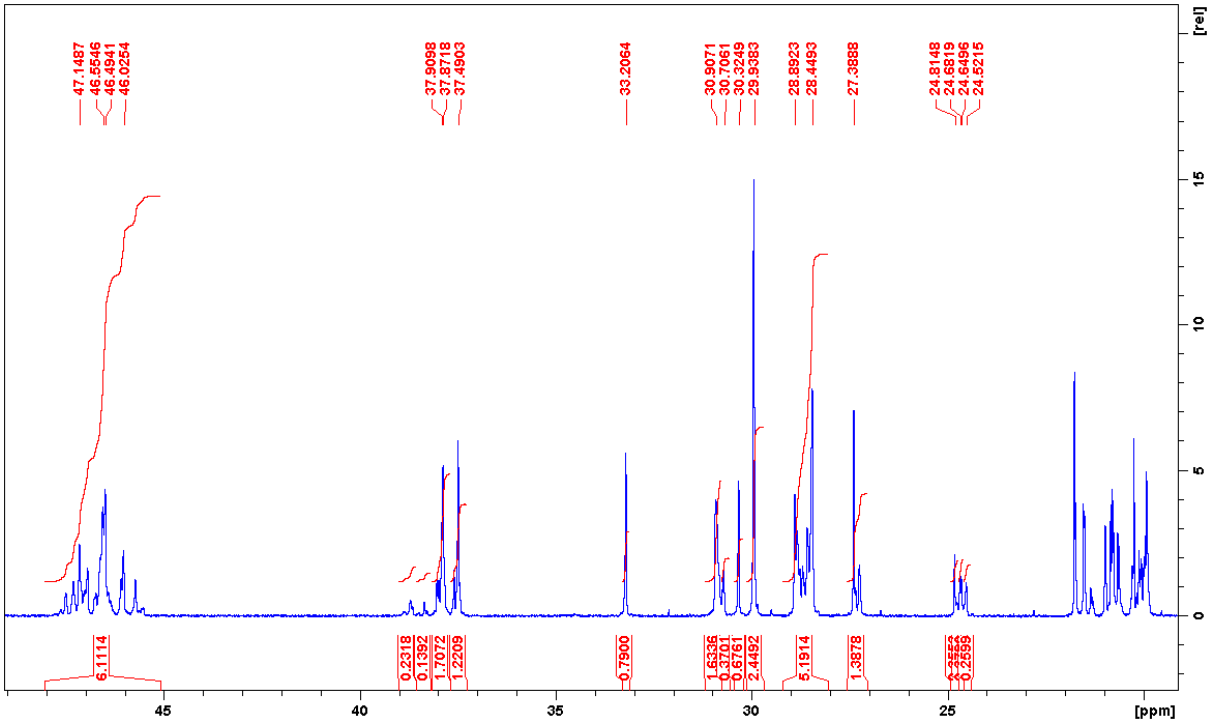

Fig. 1. ^{13}C NMR spectrum of poly(ethylene-propylene) block copolymer