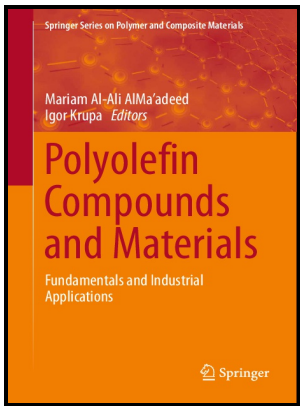
Nuclear spin relaxation and morphology of solid polyolefins.

University of East Anglia - Solid



Description: -
-Nuclear spin relaxation and morphology of solid polyolefins.
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13 C NMR Study of Solid

The polymorphic phase II to I transition causes significant immobilization of polymer chains in the crystalline and the amorphous phases. One technique for removing dipolar couplings, at least relatively weak ones, is.

The morphology of coexisting liquid and frozen phases in porous materials as revealed by exchange of nuclear spin magnetization followed by H

This exchange is detectable in these materials thanks to the high contact area. To establish magnetization transfer, the RF pulses applied on the two frequency channels must fulfill the Hartmann—Hahn condition , that is, the nutation frequencies in both rf fields must be identical. Even at MAS rates of 20 kHz and above, however, nonlinear groups of the same nuclei i.

Nuclear Spin Relaxation and Diffusion Studies of Adsorption and Dynamics at the Catalyst

A similar method to MQMAS is satellite transisition magic angle spinning STMAS NMR proposed by Zhehong Gan in 2000. The fairly slow polarization transfer mediated by the dipolar interaction between two distant spins of the same kind, e.

Nuclear Spin Relaxation and Diffusion Studies of Adsorption and Dynamics at the Catalyst

The stability of the organic modifiers on the clay surface is clarified by the simple 1H MAS spectra. An example of experimental data and analysis is shown in Figure 5. The first-order quadrupolar broadening is largely suppressed by sufficiently fast MAS, but the second-order quadrupolar broadening has a different angular dependence and cannot be removed by spinning at one angle alone.

Polyolefin catalysis of propene, 1

These changes can be predicted from molecular structure using empirical rules or quantum-chemical calculations. Material from this article can be used in other publications provided that the correct acknowledgement is given with the reproduced material and it is not used for commercial

purposes. This usually undesirable effect is commonly referred to as dipolar truncation.

Solid

By means of isotope labeling schemes or radio-frequency pulse sequences, however, it has become possible to circumvent this problem in a number of ways.

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Solid-State NMR in Materials Science: Principles and Applications; CRC Press, 2012. The process of thermal treatment can be interpreted as a loosening the inter polymer bonds between the cellulose, hemicellulose and lignin macromolecules in wood Baldwin and Goring 1968. Typical nuclei investigated are 13C and 1H, with 13C providing superior resolution but 1H requiring much shorter data acquisition times.

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