

The Bruker Avance III 400MHz NMR spectrometer

Category:
C. Particle Characterisation

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Short technology description/Overview:

NMR measures the magnetic properties of nuclei. Typical nuclei are: ^1H and ^{13}C , but also other nuclei can be studied.

Main Features (Equipment Capabilities):

For NMR experiments we have a Bruker Avance III 400MHz NMR spectrometer. The system includes a inverse broadband probe fitted with a Z-axis gradient and with automatic tuning and matching. The inner coil is optimized for ^1H and the outer coil can be tuned from ^{31}P to ^{97}Mo (and others in between). So X-frequencies are ranging from 162 to 27 MHz. The whole system is controlled by Bruker's Topspin software. A B-ACS 60 sample changer is present to be flexible in non-working hours.

Due to the presence of a gradient inverse probe 2D experiments like HSQC, HMQC, COSY and HMBC are easy to perform. Also ^1H -experiments are easy due to the high sensitivity.

Typical Samples & Images:

An example of an HSQC-experiment with direct coupling between ^1H and ^{29}Si

