FGMAS probe

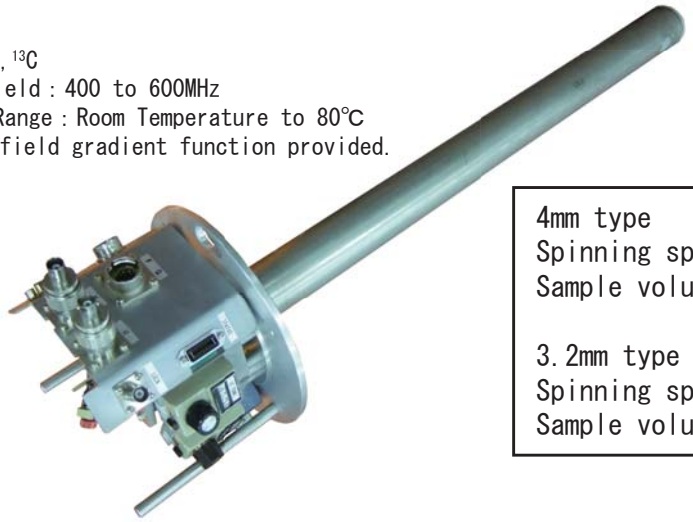
Realization of high resolution measurement of semi-solid sample by high speed MAS.
Easy inverse measurement by magnetic field gradient function further.

《Feature》

"FG(Field Gradient) MAS(Magic Angle Spinning) Probe" is a probe with magnetic field gradient which enables high speed MAS. The target samples are so-called semi-solid sample such as cream, gel, paste samples, or very viscous sample such as ionic liquid, as well as tissue from a living body and sample combined with resin for solid-phase synthesis. Further, high resolution measurement of rubber samples which used to be analyzed by liquid (latex state) NMR or solid NMR, is possible with high speed MAS by using this method.

《Specification》

Observation nuclei : ^{1}H, ^{13}C
Applicable Magnetic Field : 400 to 600MHz
Temperature Variable Range : Room Temperature to 80℃
^{2}H NMR Lock, magnetic field gradient function provided.



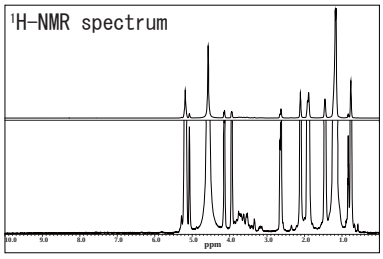
4mm type
Spinning speed: 17 kHz
Sample volume: 37 μL

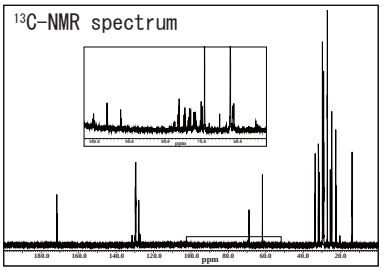
3.2mm type
Spinning speed: 22 kHz
Sample volume: 27 μL

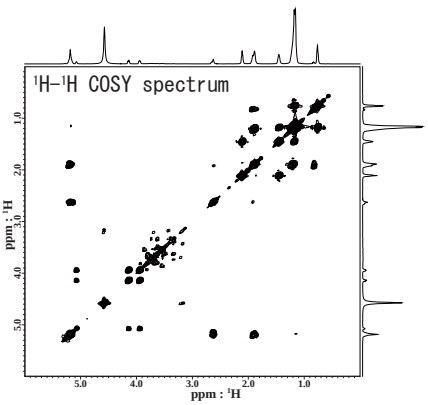
Soymilk mayonnaise

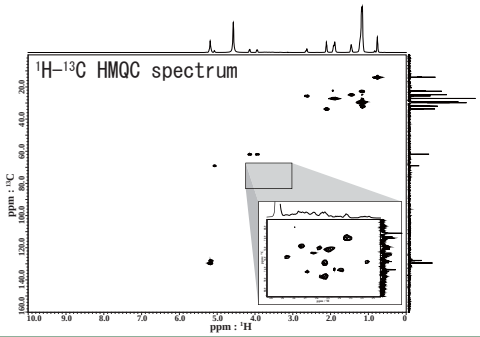
Ingredients
- Canola oil
- Soymilk
- Cider Vinegar
- Salt
- Sugars

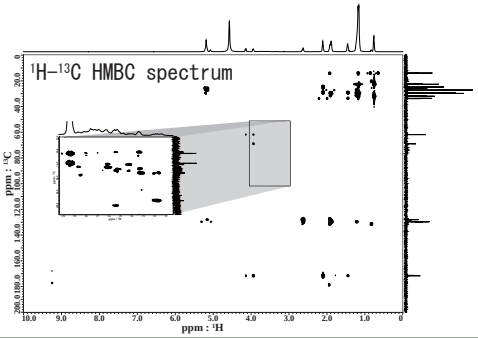
MAS speed: 5kHz











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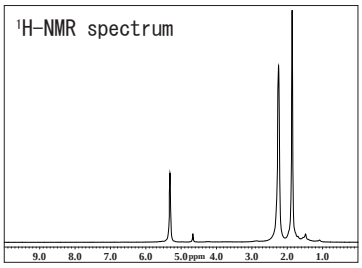
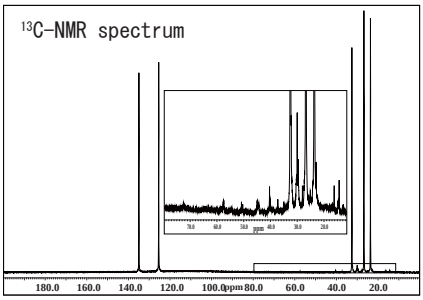
Vulcanized Natural Rubber

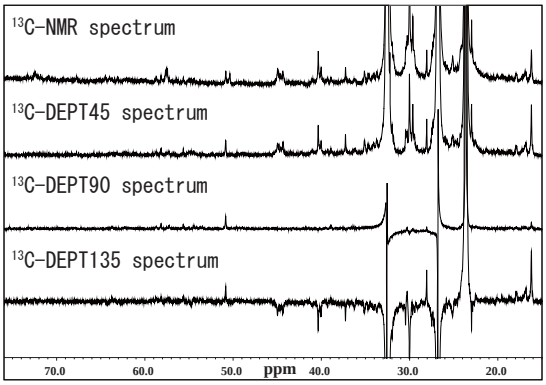
Crosslink density: 1.36×10^{-4} mol/cm^3

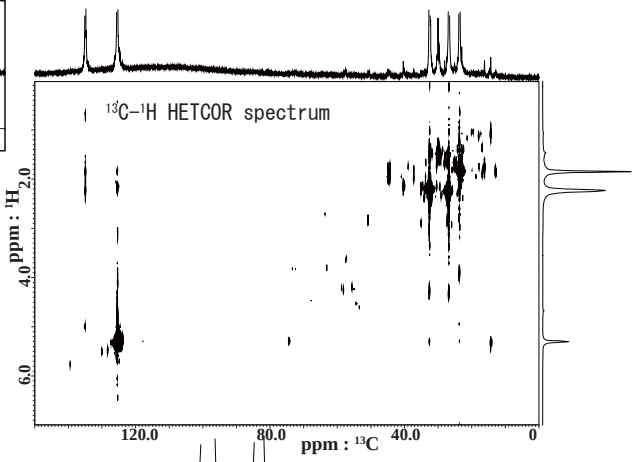
Sample kindly provided by Dr. Seiichi Kawahara (Nagaoka University of Technology).

MAS speed: 17kHz

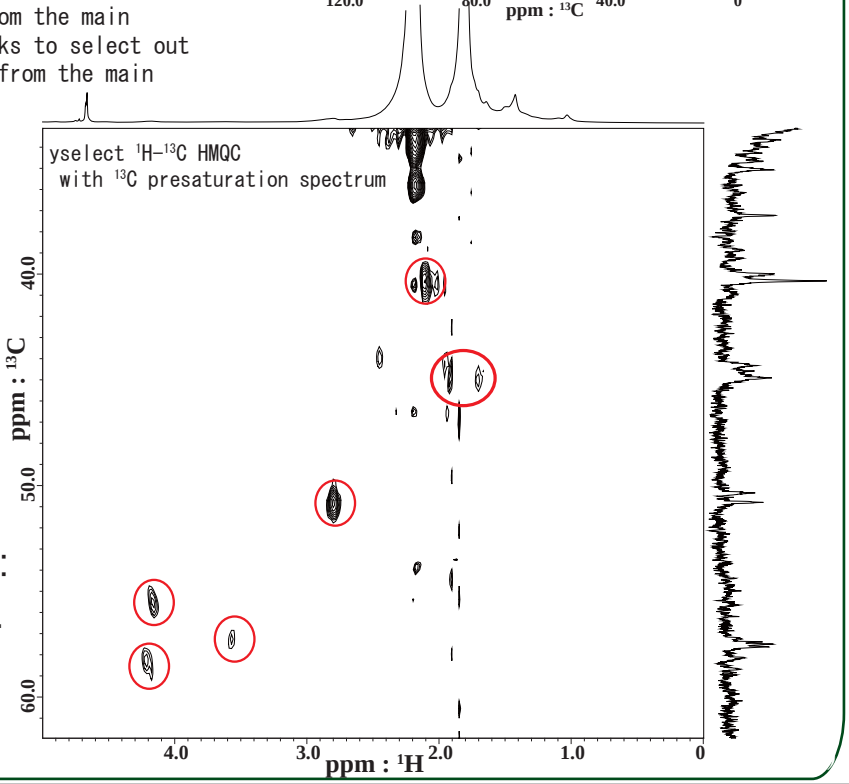








In most cases of rubber sample, the structure of main chain is already known, and the analysis of side chain is the main. However, signal coming from side chain is very small, so stable measurement becomes important.
In addition, inverse two-dimensional measurement of 1H observation, the cross peak coming from the side chain is buried in the cross peak coming from the main chain, so, some kind of works to select out or to delete signal coming from the main chain, are necessary



Measurement Time:
About 35h 45min.

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