



Description

- A benchtop NMR device using a permanent magnet operating at 40 °C for the investigation of liquid samples.
- Use cases:
 - Detection of impurities in samples
 - Check of the relative fraction of components in samples if they can be observed in the same measurement
 - Determination of self-diffusion coefficients in liquid electrolyte samples

Further information

- External D₂O lock
- Operation in flow-through mode possible
- Operation is possible with regular NMR tubes, but also with a FEP tube fed through the probe hat allows to automatically supply the sample to the device using the ASAB system.

Highlights

- **Magnet weight** 159kg
- **Operating magnet temperature** 40°C
- **¹H resonance frequency** 60 MHz
- **X-Channel** tunable to observe nuclei between ²⁹Si and ³¹P
 - **Possible nuclei**
 - ¹H
 - ¹⁹F
 - ²³Na
 - ⁷Li
 - ³¹P
 - ²⁷Al
- **High-Frequency Channel** dedicated to ¹H and ¹⁹F observations
- **Resolution** <0.35 Hz (50%) and <10 Hz (0.55%)

Publications

- [1] Szczęsna-Chrzan, A., Vogler, M., Yan, P. *et al.* Ionic conductivity, viscosity, and self-diffusion coefficients of novel imidazole salts for lithium-ion battery electrolytes. *J. Mater. Chem. A* **11**, 13483–13492 (2023).
- [2] Vogler, M., Steensen, S. K. *et al.* Autonomous Battery Optimization by Deploying Distributed Experiments and Simulations. *Adv. Energy Mater.* **14**, 2403263 (2024).