



# Proficiency Course Solid-State Nuclear Magnetic Resonance Spectroscopy for Materials Science and Pharmaceuticals

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**Schedule: 1 May to 31 July**  
**10 A.M. To 11:30 A.M.**  
**Every Saturday**

## OBJECTIVES

1. Understand Fundamental Principles
2. Apply SSNMR to Pharmaceuticals and Different Material Classes
3. Employ Key Experimental Techniques: 1D, 2D and Relaxation Measurements
4. Interpret SSNMR Spectra for Structural Insights
5. Analyze Real-World Case Studies and Research Applications
6. Develop Practical Skills in SSNMR Experimentation

## SYLLABUS

This course covers the principles and applications of solid-state nuclear magnetic resonance spectroscopy. Topics include spin interactions, chemical shifts, quadrupolar nuclei, relaxation studies, and advanced techniques such as dipolar recoupling and dynamic nuclear polarization. Applications focus on pharmaceuticals, battery materials, and porous materials. Case studies explore material characterization, degradation analysis, and structural insights. The course also discusses the integration of nuclear magnetic resonance with complementary techniques.

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