

## NMR Crystallography Strategies for Structure Determination of Zeolites and Layered Silicates

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Solid-state nuclear magnetic resonance (SSNMR) spectroscopy has emerged as an important technique for structural characterization of solids. Due to the fact that it provides *local* structural information about the environments of NMR-active nuclei, SSNMR is highly complementary to diffraction techniques whose strength lies in providing information about the *long-range* periodic structure of a material. By combining solid-state NMR and diffraction techniques with various computational methods (modeling, density functional theory, etc), powerful approaches to structure determination of materials are being developed. These integrated structure determination strategies in which SSNMR spectroscopy plays a crucial role is broadly referred to as *NMR crystallography*. This talk will provide an overview of our NMR crystallography strategies for solving and refining zeolite crystal structures. Additionally, the application of this NMR crystallography approach to the structure determination of layered silicates that lack full 3D crystallinity, a considerably more challenging problem, will also be described.

