



PhD Position: Developing Solid-State NMR Methods for Probing Structure and Dynamics of Proteins

Knowledge of structure and dynamics of proteins is essential for understanding mechanistic details of their function. Solid-state NMR (ssNMR) is a powerful and quickly developing approach to access such information at atomic resolution and thus provide us with glimpses into processes of life. However, in spite of being quite mature field ssNMR is still far from reaching its full potential. Further methodological developments are needed to solve riddles of such important systems as amyloid fibrils and membrane proteins. To develop detailed models of molecular motions new and faster experimental measurements need to be introduced – recent technological developments enabling fast magic angle spinning and low temperature magic angle spinning created new opportunities in this context. Moreover, new approaches for obtaining precise numerous structural restraints and methods for dealing with assignment ambiguity are needed – fast acquisition methods and simultaneous/parallel acquisition of different types of spectra will be explored.

This project will involve the development of new solid-state NMR methods for probing structure and dynamics of proteins. The project is a collaboration between the research groups of Józef R. Lewandowski (Warwick) and Steven P. Brown (Warwick). The research program will combine experimental work using the high-field spectrometers in Warwick with numerical simulations.

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The Centre for Doctoral Training in Integrated Magnetic Resonance (**IMR**) is a collaboration between researchers at the Universities of Warwick, St Andrews, Southampton, Aberdeen and Nottingham.