Job Description

Job title	Research Fellow
Department	Physics
Grade	6

Job purpose (a brief summary of the role)	A development role that uses solid-state NMR techniques at high magnetic fields (1 GHz and 850 MHz) for functional characterization of complex materials and chemical systems. To facilitate implementation of NMR methodology at high fields in materials research including promoting existing techniques and developing new protocols and experiments.
Duties and responsibilities	Provide support and knowledge for projects undertaken at the UK High-Field Solid-State NMR National Research Facility (NRF) by non-NMR specialist PIs. Your direct line manager will be NRF Technical Director, Dr Dinu Iuga, and you will become part of the NRF's Local Management Team that is made up of the NRF Director. Prof. Steven P. Brown, the Facility Management Team (FMT, this is currently Dr Dinu Iuga and Dr Trent Franks, and the appointee will join this) and an Administrator, Charlie Whitewood. This includes: • Interact directly with the project's PI and their research team working in materials science and chemistry fields such as energy materials, sustainable materials or biopolymers, to understand the research questions they are seeking to answer using high-field solid-state NMR. • Discuss among the FMT the best experimental approach to answer these questions. • In collaboration among the FMT and with the PI teams, carry out the required NMR experiments at the NRF's 1 GHz or 850 MHz spectrometers, being aware of and implementing health and safety procedures. • Analyse the results and discuss them with the PI teams (including PhD students) enabling them to understand the NMR methodology and results. • As necessary, carry out additional numerical simulation work (e.g., spectra deconvolution, SIMPSON simulation, CASTEP computations) to complement the experimental results. • Assist the project PI teams in the preparation of co-authored papers by preparing figures of publishable quality as well as a written description of the NMR experiments and results. • Carry out your own research in the FMT's 10% of NRF spectrometer time. • Support trans-national access to the Warwick solid-state NMR spectrometers as part of the European Union PANACEA project. • Assist the FMT in supporting all the Facility visitors. • Assist with the administrative and maintenance tasks associated with running the NRF. • Present reports to the 6-monthly and annual meetings of the NRF's Facility Executive and Oversight Committee, respectively. The duties and responsibilities outlined are not intended to be an exhaustive list but rather to provide guidance on the main aspects of the post. The post-holder will be required to be flexible in his or her duties.

Person Specification *The Person Specification focuses on the essential and desirable knowledge, skills, experience and qualifications required to undertake the role effectively. This is measured by (a) Application Form, (b) Test/Exercise, (c) Interview, (d) Presentation.*		
Essential Criterion No.	Essential Criterion Description	Measured by
E1	Hold, or be about to attain, a PhD or equivalent in a relevant scientific discipline (e.g. physics, mathematics) (a), (c)	A & C
E2	Specialist knowledge of solid-state NMR as demonstrated by publications and presentations at conferences. (a), (c)	A & C
E3	Ability to initiate, plan, implement and deliver programmes of research work to defined deadlines. (a) (c)	A & C
E4	Ability to work effectively both independently and as part of a research team. (a) (c)	A & C
E5	Excellent interpersonal and communication skills (a) (c), with an enthusiasm for promoting the capabilities of high-field solid-state NMR to non-specialists.	A & C
E6	An understanding of equal opportunity issues as they may impact on areas of research content. (a), (c)	A & C

Desirable Criterion No.	Desirable Criterion Description	*Measured by*
D1	Experience with developing and using state-of-the-art solid-state NMR hardware, notably advanced rf probe capability, for example for high- and low-temperature, and for fast magic-angle spinning.	A & C
D2	Experience with maintenance and modifying of solid-state NMR probes, notably the rf circuits.	A & C
D3	Experience with modifying and writing new pulse programs in TOPSPIN.	A & C