



Grenoble, March 15th, 2024.

Letter of commitment for the EU INFRATECH proposal BOBINE

The French Federation for Neutron Scattering, 2FDN, is a research structure gathering all the professional workers in the field of neutron scattering in French laboratories. It aims at exploiting at best the resources, supporting the scientific communities using neutron scattering and promoting the use of these techniques.

The use of high magnetic fields and mK temperatures provides an invaluable tool in the investigation of strongly correlated electron phenomena with neutron-based techniques. As such, the magnets developed within the project BOBINE will be a unique opportunity to strengthen the European large-scale research infrastructure. With a joint European 20T static magnet and a 40T pulsed magnet, both combined with a bespoke mK dilution insert, BOBINE will significantly extend the available parameter range towards more extreme sample environment. The project will bring unique opportunities for the exploration of (quantum) disordered systems or exotic electronic ordering phenomena, especially in combination with the latest generation of neutron scattering instruments. BOBINE will thus be a key development towards the discovery of exciting new physics. Moreover, the technology employed in BOBINE -based on HTS superconductors- will serve as a prototype for future high-performance magnets, with potential applications beyond neutron scattering.

We believe that the BOBINE project provides a very interesting and promising contribution towards a stronger and more competitive European neutron research landscape. The French community is a very strong one in the field of magnetism and correlated electrons physics. Moreover, several groups were deeply involved in the development of such instrumentation, the former CEA 12 T magnet and the 40 T magnet currently available for users at the ILL. French researchers are also important users of the current 15 T magnet at ILL.

In its role of coordinating the use of CRGs instruments at the ILL and PSI, the 2FDN foresees a strong request from our user community to have access to such a magnetic field and temperature range and to address scientific challenges mainly from, but not limited to, the areas of information technology and quantum phenomena.

We strongly support the BOBINE project and are committed to contribute by providing the infrastructure to conduct the project and the operation of the systems on the neutron scattering beamlines at our facilities. We will furthermore be happy to allocate beamtime on our CRGs instruments for hot commissioning of the magnets in the frame of pilot experiments.

A handwritten signature in blue ink, appearing to read 'Marie Plazanet', with a stylized flourish at the end.

Marie Plazanet
Director of the 2FDN