PAUL SCHERRER INSTITUT

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Letter of Commitment for the EU Infratech Proposal :
BOBINE–Bettering our B-field Infrastructure for Neutrons in Europe

The Paul Scherrer Institute (PSI) is the largest research institute for natural and engineering sciences in Switzerland. PSI's research areas include future technologies, fundamentals of nature, energy and climate, and health innovation, aiming to develop sustainable solutions for societal challenges. The institute operates unique combination of large scientific research facilities like the Swiss Synchrotron SLS and the X-ray free-electron laser SwissFEL, the Swiss research infrastructure for particle physics CHRISP, the muon source SμS and the neutron source SINQ providing insights into material structures and processes with over 2500 scientists visiting annually,

The employment of high magnetic fields and low mK temperatures provides a key tool in the investigation of quantum phenomena and functional materials with neutron-based techniques with importance for future technologies and applications. As such, the magnets developed within the project BOBINE will be 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.

In addition to providing a crucial tool for scientific exploration and discoveries, the technology employed in BOBINE, based on HTS superconductors, will serve as a prototype for future high-performance magnets, with potential use also beyond neutron scattering applications such as quantum computing.

We believe that the BOBINE project provides a very interesting and promising contribution towards a stronger and more competitive European neutron research landscape. We at SINQ/PSI foresee a strong request from our user community to have access to such a magnetic field and temperature range to address scientific challenges mainly from, but not limited to, the area of information technology and quantum phenomena. We strongly support the BOBINE project and are committed to contribute to the project by providing the infrastructure to conduct the project and the operation of the systems on the neutron scattering beamlines at our facility.

We furthermore are happy to allocate beamtime at our facility for hot commissioning of the magnets in pilot experiments.

Prof. Dr. Christian Rüegg
PSI Director

Dr. Alex Amato
Head of Division for Research with Neutrons and Muons (NUM), a.i.

Prof. Dr. Marc Janoschek
Head of Laboratory for Neutron and Muon Instrumentation (LIN)

Prof. Dr. Michel Kenzelmann
Head of Laboratory for Neutron Scattering and Imagine (LNS)