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- To whom it may concern -

Garching, 2024 / 02 / 29

**Letter of commitment for the EU Infratech Proposal:
in the framework of HORIZON-INFRA-2024-TECH-01**

“Bettering our B-field Infrastructure for Neutrons in Europe” (BOBINE)

Dear Sir or Madam,

The Heinz Maier-Leibnitz Zentrum (MLZ) is a leading research center for cutting-edge research with neutrons and positrons which are provided by the Forschungs-Neutronenquelle Heinz-Maier-Leibnitz (FRM II). The MLZ is a cooperation between the Technische Universität München (TUM), the Forschungszentrum Jülich GmbH and the Helmholtz-Zentrum hereon GmbH. The MLZ provides neutron and positron beams with outstanding brilliance and offers a unique suite of high-performance neutron scattering instruments to an international user community. It plays a key role for the research with neutrons within the European landscape of large-scale research infrastructure.

The employment of high magnetic fields and low mK temperatures provides a key tool in the investigation strongly correlated electron phenomena with neutron based techniques. 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. 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 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 use also beyond neutron scattering applications such as quantum computing.

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Scientific Directorate

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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 MLZ / FRM II 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.

With kind regards,



Prof. Dr. Christian Pfleiderer
Scientific Director FRM II / MLZ