European Microkelvin Platform

Research at the frontier near absolute zero

EU now financing Transnational Access to EMP Labs

Would your research benefit from having access to milli- and microkelvin temperatures? If so, please read the following

Call for Proposals

With the recent rapid advances in the precision of measurements in the materials-science and quantum-technology fields, there is a growing need to take measurements down to the milli- and microkelvin temperature regimes. However, accessing ultralow temperatures is expensive. Thus there is a growing need for researchers without their own dedicated ultralow-temperature infrastructure to be able to access such temperatures in existing facilities.

Our **E**uropean **M**icrokelvin **P**latform (EMP) was set up precisely to fulfil this need.

The aim of the **EMP** is the creation of a major European "laboratory without walls" in the field of ultralow temperatures. The **EMP** is a consortium of 17 leading ultralow temperature physics and technology partners in Europe, forming a coherent group and able to provide a comprehensive portfolio of capacities. Our aim is to strengthen European research in ultralow temperature physics, both in our own institutions and by providing services for European, and other, researchers who do not have their own dedicated infrastructure. Since this is a rapidly changing frontier field, we also put considerable weight on improving and upgrading our capabilities since the lowest accessible temperatures are continuously falling. This allows us to study new phenomena in this expanding field and to generate new knowledge, applications and commercial opportunities. We have a particular interest in the benefits of ultralow temperature physics for the advancement of the fields of materials, nano-science in general and quantum technology, manipulation and computation in particular. These areas have enormous potential for innovation which we are just beginning to tap into.
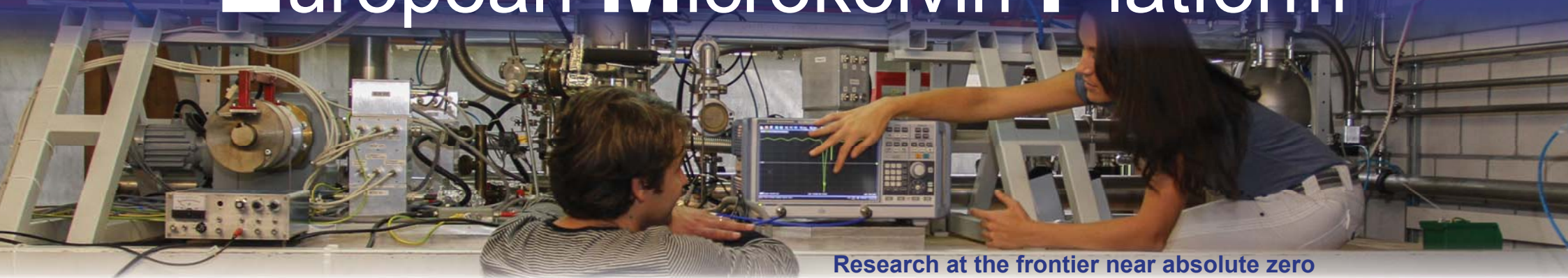
This call is intended to encourage researchers who might need such facilities but have none in their home institutes to make use of those offered by the EMP - free of charge!

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Available Facilities & Technology

Of the 17 partners within **EMP**, eight are set up to provide ultralow temperature access. The facilities available are substantial and probably represent the largest concentration of ultralow temperature capabilities in the world.

Among the facilities available for visiting researchers are: 15 nuclear demagnetization refrigerators with base temperatures from 100 µK down to 5 µK, including rotating cryostats, cryostats with experimental magnetic fields up to 9 T, with facilities for applying microwaves and many other capabilities. Most machines are "wet", but three are cryogen free machines as well.

There are well over thirty dilution refrigerators available, also with many capacities. Furthermore, many of the access-giving sites have micro- and nano-fabrication laboratories, which can be accessed by external researchers.

How to apply?

If we raised your interest, please visit our website emplatform.eu to find detailed information on the available facilities, how to submit your application and how to contact us. Please don't hesitate to discuss ideas for potential experiments prior to application.

User proposals can be submitted online anytime. An international, independent selection panel will review all proposals and accept projects based on feasibility and scientific merit.

EMP will provide logistical, technological and scientific support and have specific trainings for visiting user groups. Access to our sites is granted free of charge, travel and subsistence costs will be reimbursed.