Our institute, RIKEN, is a Japanese national institute for natural science research. RIKEN has established the RIKEN-RAL Muon Facility with the ISIS Muon Source at the Rutherford-Appleton Laboratory (RAL) in Didcot, Oxfordshire in 1994 on the basis of an international agreement between the UK and Japan for accelerator-based natural science researchs. The RIKEN-RAL Muon Facility can provide one of the world's most intense pulsed muon beams which can be used for material sciences. This experimental technique is known as μSR. The RIKEN-RAL Facility can in particular provide special sample environmental conditions in order to achieve unique results which cannot be obtained in other muon facilities. One of those is to combine laser application with muons. Our project supported by JSPS is to initiate this laser irradiation technique to a new experimental port and carry out exotic laser-irradiated experiments. We are collaborating with the RAL Muon group, the RAL Central Laser Facility group and the ISIS Project Engineering group in order to develop this laser irradiation setup. Such a collaborative project can be realized on the basis of the long-term reliable relationship between RIKEN and RAL. We have been funded by JSPS at the level of 2.5 million yen per year for 2 years (in total 5 million yen) to work on building up a new laser irradiation setup. This laser irradiation setup will be open to all RIKEN-RAL users for μSR research on photo-excited states. μSR studies with laser irradiation are quite unique and users can therefore have lots of benefits to investigate new fields of material science. At this moment, a new experimental setup for laser irradiation research is being arranged and will be open soon for general users. Our project will need more funding to upgrade the laser equipment in the near future. For this, we are planning to apply for more funding to JSPS to achieve worldwide unique experimental conditions at RIKEN-RAL on the basis of this continuing scientific relationship between the UK and Japan.

Photo:
RIKEN-RAL Muon Facility at RAL.