



Positive Spin

The Newsletter of the ISIS Muon Group

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News

WELCOME

"Welcome. We had a very successful muSR school this year! A new generation of potential muSR users was trained and FAP6 looks forward to receiving enlightening proposals from them. ISIS will soon undergo a rejuvenation process and new instrumentation will be installed to increase the performance of the muSR spectrometers for your future experiments. Best wishes, Pietro"

ISIS Access
Spring and Summer 2017

Next proposal deadline
16th Oct 2016

MUON TRAINING SCHOOL

In March 2016 we held our biennial **muon spectroscopy**

Muon spectroscopy e-learning now online

Muon spectroscopy and neutron scattering exercises and simulations of experiments are now available online for free at e-neutrons.org. The platform was developed with support from NMI3-II and features a bespoke introductory course in μ^+ spectroscopy. Further material from the muon training school will be added.

training school. It was attended by 33 participants with students coming from as far away as India and China. In five days they attended 19 hours of lectures and three practical sessions on the muon beam lines. Thanks to all the students, group members and lecturers for making such a successful school.

COLD S.E. OBSOLESCENCE

To improve reliability and flexibility of low temperature muon measurements, we're in the process of purchasing a number of 4He cryostats, together with dilution and 3He inserts. We anticipate a staged introduction of this new apparatus over the next three years.

UK Neutron and Muon science user meeting

26-28 July 2016

Warwick, UK

NEW MuSR MAGNET

A new magnet was installed after Christmas that will increase applied fields to 6kG. Separately, a redesigned beam snout has been installed to make better use of the detectors.

Instrumentation

BEAUTIFUL VISTAS!



The 'muon village' is attracting visitors from all over the world following installation of a bridge to connect all muon instrument cabins directly with the instrument platform and construction of a dedicated muon user working area. Come visit!

BEAMLINE UPGRADE: Pt II

This summer Phase 2 of the beamline upgrade project will commence, revamping the remaining parts of the original 1987 installation. Quadrupole magnets will be replaced (with new optimized assemblies, see figure) as will other components



such as beam pipes, vacuum pumps and slits. Upon completion this September, and after retuning, we expect a further increase in rate on all spectrometers together with an improvement in reliability.

HOT OIL APPARATUS

HiFi now has an oil cooled/heated sample stage which runs from -40 to +200C. The system may be preferred over the CCR for experiments near room temperature, where frequent sample changes are required (no defrosting), and where external wiring or liquid pipework has to be connected to the sample cell.

Science highlights

PAPERS RESULTING FROM ISIS WORK ARE AN IMPORTANT OUTPUT AND INCREASINGLY USED AS A MEASURE OF THE VALUE OF THE FACILITY. PLEASE KEEP US UP TO DATE WITH YOUR PUBLICATIONS. WE HAVE COMPILED LISTS FOR RECENT YEARS THAT ARE NOW AVAILABLE AT WWW.ISIS.STFC.AC.UK/GROUPS/MUONS/PUBLICATIONS PLEASE INFORM US IF ANY ARE MISSING.

- UNCONVENTIONAL SUPERCONDUCTIVITY IN LA71r3 REVEALED BY MUON SPIN RELAXATION
- PROBING BENEATH THE SURFACE WITHOUT A SCRATCH
- RATE CONSTANTS FOR THE SLOW MU + PROPANE ABSTRACTION REACTION AT 300 K BY DIAMAGNETIC RF RESONANCE
- HYDROGEN STORAGE MECHANISM AND LITHIUM DYNAMICS IN Li12C60 INVESTIGATED BY MSR
- QUESTIONING ANTIFERROMAGNETIC ORDERING IN THE EXPANDED METAL, Li(NH3)4: A LACK OF EVIDENCE FROM MSR
- FAST MICROWAVE-ASSISTED SYNTHESIS OF LI-STUFFED GARNETS AND INSIGHTS INTO LI DIFFUSION FROM MUON SPIN SPECTROSCOPY
- MAGNETIC SURFACTANTS AS MOLECULAR BASED-MAGNETS WITH SPIN GLASS-LIKE PROPERTIES

Dates for your diary

- ISIS PROPOSAL DEADLINE: 16 OCT 2016
- IN SITU STUDIES OF FUNCTIONAL NANO MATERIALS AT LARGE SCALE FACILITIES: FROM MODEL SYSTEMS TO APPLICATIONS, MAY 2016
- UK NEUTRON AND MUON SCIENCE USER MEETING, JULY 2016

Any other business...

PUBLICATIONS Please inform your local contact and the ISIS User Office of publications arising from work on Muon instruments. A link to the work can then be included on the STFC publications database: <http://epubs.stfc.ac.uk>

CO-AUTHORS Please remember to include Muon Group staff as co-authors on publications when deemed appropriate

CYCLE DATES Forthcoming cycle dates

Further information: [Muon Group Homepage](#) - [Group Members](#) - [HiFi](#) - [MuSR](#) - [EMU](#) - [ARGUS](#)