



Positive Spin

The Newsletter of the ISIS Muon Group

Volume 3, Issue 1

September 2013

News

WELCOME

"Welcome! As you can see from this issue there is a lot going on in the ISIS Muon Group. It's a great time to maintain your research with muons or start a new project. Enjoy the newsletter and I look forward to reading your proposals in the FAP. Best wishes, Don"

ISIS Access : 2014

The next ISIS proposal submission deadline will be **16th October 2013**. However, there will be **NO** ISIS proposal round in April 2014 due to the long ISIS shutdown. In addition, the muon instruments **will not** run during the July/August cycle before the long shutdown. This is to allow the radiation levels around the muon target to reduce and allow work to commence on upgrading the muon EPB and front instrument quads as soon as the July/August cycle ends.

STAFF NEWS

We are pleased to announce that we have been joined by Fiona Coomer and Paul



McClarty. Fiona, formerly at the University of Strathclyde, will assume the role of instrument scientist on EMu. Fiona's scientific interest is solid state chemistry and magnetism. Paul is a theoretician whose research interest is strongly correlated electrons. He will provide theoretical interpretation of complementary experimental μ^+ data. Welcome both! We are also pleased to announce that, as of July 2013, Francis Pratt is an STFC Fellow. Congratulations!

BEAM LINE UPGRADE

Work on the front end of the Muon beam lines has commenced with installation planned during next year's long shutdown. Initially, the two ageing quadrupole magnets closest to the μ^+ production target will be replaced with a triplet of

wide aperture magnets. The following year the magnets from quadrupoles to kicker will be renewed. The whole upgrade should give both an increase in rate and improved reliability. The new quadrupoles are currently in manufacture. Other components have already been delivered.

MuSES Update

Installation of the high-power laser system on HiFi continues apace; the focus of this exciting instrument upgrade being the understanding of fundamental physics of photo-excited states using μ^+ . Modifications to the instrument area



are complete and a dedicated cabin for the laser system has been erected. The MuSES team hope to deliver laser beam to sample by early 2014.

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.

- WEAK MAGNETIC TRANSITIONS IN PYROCHLORE Bi_2IrO_7
- COMPETING 4f-ELECTRON DYNAMICS IN $\text{Ce}(\text{Ru}_{1-x}\text{Fe}_x)_2\text{Al}_{10}$ ($0 \leq x \leq 1.0$): MAGNETIC ORDERING EMERGING FROM THE KONDO SEMICONDUCTING STATE
- EVIDENCE FOR SUPERCONDUCTIVITY WITH BROKEN TIME-REVERSAL SYMMETRY IN LOCALLY NONCENTROSYMMETRIC SrPtAs
- IMPORTANCE OF SPIN-ORBIT INTERACTION FOR THE ELECTRON SPIN RELAXATION IN ORGANIC SEMICONDUCTORS
- μSR STUDY OF MAGNETIC ORDER IN THE ORGANIC QUASI-ONE-DIMENSIONAL FERROMAGNET F_4BimNn
- GAPLESS SPIN LIQUID GROUND STATE IN THE $S=1/2$ VANADIUM OXYFLUORIDE KAGOME ANTIFERROMAGNET $[\text{NH}_4]_2[\text{C}_7\text{H}_{14}\text{N}][\text{V}_7\text{O}_6\text{F}_{18}]$

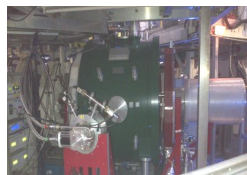
Dates for your diary

- ISIS PROPOSAL DEADLINE, 16TH OCTOBER 2013
- ISIS MUON TRAINING SCHOOL, MAY 2014
- 13TH INTERNATIONAL CONFERENCE ON MUON SPIN ROTATION, RELAXATION AND RESONANCE, JUNE 2014, SWITZERLAND
- 6TH EUROPEAN CONFERENCE ON NEUTRON SCATTERING (ECNS2015), SPAIN, AUGUST 2015

Instrumentation

HIFI DETECTOR STABILITY

The stability of the detector array has been further improved by regulating the temperature of the PMTs using a dedicated enclosure. Coupled with improved counting rate on the instrument, this upgrade will allow measurement of weaker signals with improved reliability.



MUON VILLAGE UPDATE

As mentioned in the last issue, the muon village upgrade is a

3-phase project which will see the MuSR cabin relocated beside EMu, incorporation of a bridge to connect the cabins directly with the instrument platform and construction of a dedicated muon user working area. Relocation of MuSR is now complete and the other installations are in the planning stage.

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](#)