NEUTRON SCIENCES
USERNews Weekly
May 23 – May 29, 2011 — Oak Ridge National Laboratory Neutron Sciences

The Director's Coffee Break

HFIR
User Lounge
Bldg. 7964K, Rm 17
May 27, 2011
11:00 AM

Contacts:

SNS Instrument Hall Coordinator	241-4432
ORNL LSS	574-6606
Computer Helpline	241-6765
ORNL Taxi	680-2303
	680-9800
Weather	574-9836
SNS	
Control Room	576-1503
RCT Support (radiation control technician)	274-8658
User Support	241-4432
User Office	574-4600
HFIR	
Control Room	574-7035
RCT Support (radiation control technician)	574-6713
User Office	574-4523

SNS Café, Bldg 8600
Breakfast hours: M–F, 7:00 am – 9:30 am
Lunch hours: M–F, 10:45 am – 1:15 pm

HFIR Canteen, Bldg 7962
Lunch hours: M–F, 10:45 am – 1:15 pm

For questions or comments email us:
neutronscience@ornl.gov

neutrons.ornl.gov
Follow Us

Research Spotlight

Nodes or no nodes in the gap in an Fe-based superconductor

Theorists have proposed that a "sign-changing s-wave" superconducting gap exists in the pnictide superconductors, a gap that changes sign between the hole- and electron-Fermi-surface pockets. Numerical calculations confirm such a gap structure. However, the calculations find significant anisotropy of the gap for such electron-doped compounds as the Fe-based superconductor $Ba(Fe,Co)_2As_2$. Angle-resolved photoemission spectroscopy consistently provides evidence of an isotropic gap structure in momentum space. Other experiments appear to find low-lying excitations, possibly due to nodes in the gap structure. With its high neutron flux at the sample and its fine energy resolution, the SEQUOIA Fermi Chopper Spectrometer at SNS may be a model tool to probe the momentum structure of the superconducting gap in $Ba(Fe,Co)_2As_2$. This study will help to resolve whether nodes exist in the superconducting gap. Mark Lumsden, Thomas Maier, Andrew Christianson, K. J. Marty, and Steve Nagler are collaborating.

This Week's Users

SNS, NOMAD (BL1B)
Joerg Neuefeind (ORNL NScD)
Mikhail Feygenson (ORNL NScD)
Xiaowei Teng
James Morris (ORNL)
Cristian Contescu (ORNL)
Bryan Chakoumakos (ORNL NScD)
Joerg Neuefeind (ORNL NScD)
Juan Londono (DuPont)

SNS, BASIS (BL2)
Eugene Mamontov (ORNL NScD)
David Cole (Ohio State Univ)
Gernot Rother (ORNL PSD)
Lawrence Anovitz (ORNL PSD)
Sow-Hsin Chen (Mass Inst of Tech)
Emiliano Fratini (Florence Univ)
Wei-Shan Chiang (Mass Inst of Tech)
Hua Li (Mass Inst of Tech)

SNS, SNAP (BL3)
Christopher Tulk (ORNL NScD)
Jamie Molaison (ORNL NScD)
Antonio M Dos Santo (ORNL NScD)
Neelam Pradhan (ORNL NScD)
Ruth Mikkelson (Univ of Wisconsin)
Dennis Mikkelson (Univ of Wisconsin)

SNS, Magnetism Reflectometer (BL4A)
Xiaobo Shen (Univ of Mass)
Rosario Gerhardt (Georgia Inst of Tech)
Matt Marchese (Georgia Inst of Tech)
Salil Joshi (Georgia Inst of Tech)
Valeria Lauter (ORNL NScD)
Joshua Zide (Univ of Delaware)
Pernell Dongmo (Univ of Delaware)
Hailemariam Ambaye (ORNL E&ESD)
Sindhu Jagadamma (ORNL E&ESD)
Melanie Mayes (ORNL E&ESD)
Ilia Ivanov (ORNL CNMS)
Stephen Wilson (Boston College)
Chetan Dhital (Boston College)

SNS, Liquids Reflectometer (BL4B)
Stephen Holt (Australian Nuc Science)
Jeremy Lakey (Univ of Newcastle)
Anton LeBrun (Australian Nuc Science)
Luke Clifton (ISIS)
John Ankner (ORNL NScD)
Eugenia Kharlampieva (Univ of AL)
Veronika Kozlovskaya (Univ of AL)
Olekasandra Zavgorod (Univ of AL)

SNS, CNCS (BL-5)
Yang Zhao (Univ of Maryland)
Kittiwit Matan (Madikol Univ Bangkok)
Yusuke Nambu (Univ of Tokyo)
Kim Lefmann (Univ of Copenhagen)
Jacob Larsen (Tech Univ of Denmark)
Niels Christensen (Tech Univ of Denmark)
Turi Schaffer (Univ of Copenhagen)
Georg Ehlers (ORNL NScD)
Mark Lumsden (ORNL NScD)
Andrew Christianson (ORNL NScD)
Cuihuan Wang (ORNL NScD)
Jennifer Niedziela (ORNL NScD)

SNS, EQ-SANS (BL6)
Sandip Harimkar
Ashish Singh
Zimei Bu (City College of NY)
Yuri Melnichenko (ORNL NScD)
Gregory Smith (ORNL NScD)
Lilin He (ORNL NScD)
Wei-Ren Chen (ORNL NScD)
Xin Li (Rensselaer Polytechnic)
Bruce Moyer (ORNL PSD)
Volker Urban (ORNL NScD)
Shinichi Suzuk (JAEA)
Ryuhei Motokawa (JAEA)

SNS, VULCAN (BL7)
Ke An (ORNL NScD)
Chengdu Liang (ORNL PSD)
Zengcai Liu (ORNL NScD)
Lu Cai (ORNL NScD)
Orlando Rios (ORNL PSD)
John Wilgen (ORNL E&ESD)
Gil Ludtka (ORNL PSD)
Don Nicholson (ORNL C&CSD)
Bart Murphy (ORNL PSD)
Xun-Li Wang (ORNL NScD)
Thomas Watkins (ORNL PSD)
Ling Yang (ORNL NScD)
Ke An (ORNL NScD)

SNS, POWGEN (BL11A)
Craig Bridges (ORNL PSD)
M. Paranthaman (ORNL PSD)
Olivier Gourdon (ORNL NScD)

Jakoah Brgoch (Iowa State Univ)
Sean Muir (Oregon State Univ)
Sevda Avci (ANL)
Omar Chmaissem (Northern Ill Univ)
Jason Hodges (ORNL NScD)
Ashfia Huq (ORNL NScD)

SNS, TOPAZ (BL12)
B. Chakoumakos (ORNL NScD)

SNS, NSE (BL15)
Wei-Ren Chen (ORNL NScD)
Sow-Hsin Chen (Mass Inst of Tech)
Yun Liu (Univ of Delaware)
Kunlun Hong (ORNL CNMS)
Kenneth Herwig (ORNL NScD)
Yang Zhang (ORNL NScD)
Xin Li (Rensselaer Poly Inst)
M. Medina-Noyola (Universidad Autonoma Metropolitana)
Bin Wu (Rensselaer Polytechnic Inst)
Lutz Willner (Juelich)
Reidar Lund (Donostia Inter Physic Ctr)

SNS, SEQUOIA (BL17)
Georg Ehlers (ORNL NScD)
Andrey Podlesnyak (ORNL NScD)
Matthias Frontzek (ORNL NScD)
Mark Lumsden (ORNL NScD)
Thomas Maier (ORNL C&CSD)
Andy Christianson (ORNL NScD)
Karol Marty (ORNL NScD)
Stephen Nagler (ORNL NScD)
Guangyong Xu (Brookhaven Nat'l Lab)
Jinsheng Wen (Brookhaven Nat'l Lab)
Zhijun Xu (Brookhaven Nat'l Lab)

SNS, ARCS (BL18)
Paul Sokol (Indiana Univ)
Timothy Prisk (Indiana Univ)
Matthew Bryan (Indiana Univ)
Douglas Abernathy (ORNL NScD)
Jae-Ho Chung (Korea Univ)
Brent Heuser (Univ of Illinois)
Tai-Ni Yang (Univ of Illinois)

HFIR, GP-SANS (CG-2)
Keisha Walters (Miss State Univ)
Erick Vasquez (Miss State Univ)
Jarod Nall (Miss State Univ)
Ken Littrell (ORNL NScD)
Lisa Debeer-Schmitt (ORNL NScD)
Mark Dadmum (Univ Tenn)
Cameron Lee (Univ Tenn)
Wen Yin (Univ Tenn)
Brent Heuser (Univ of Illinois)
Tai-Ni Yang (Univ of Illinois)

HFIR, Bio-SANS (CG-3)
Nigel Clarke (Durham Univ)
Jamie Ford (Penn Univ of Penn)
Lilin He (ORNL NScD)
Michael Hu (ORNL E&ESD)
Ting Zhu (ORNL NScD)
Michael Crawford (DuPont)

HFIR, Cold TAS (CG-4C)
Olivier Delaire (ORNL NScD)
Jie Ma (ORISE)
Takatsugu Masuda (Univ of Tokyo)
Minoru Soda (Univ of Tokyo)

HFIR, TAS (HB-1)
Mark Lumsden (ORNL NScD)
Andrew Christianson (ORNL NScD)
Cuihuan Wang (ORNL NScD)
Karol Marthy (ORNL NScD)
Stuart Calder (ORNL NScD)
Feng Ye (ORNL NScD)
Jaime Fernandez-Baca (ORNL NScD)
Dalgis Mesa (Louisiana State Univ)

HFIR, TAS (HB-1A)
David Vaknin (Ames Lab)
Vivek Thampy (Johns Hopkins Univ)
Feng Ye (ORNL NScD)
Jaime Fernandez-Baca (ORNL NScD)
Mark Lumsden (ORNL NScD)

HFIR, Powder Diffractometer (HB-2A)
Claudia Rawn (ORNL PSD)
Gilbert Brown (ORNL PSD)
Antonio Moreira Santos (ORNL NScD)
Daniel Hillesheim (ORNL)

HFIR, NRSF (HB-2B)
Kiran Solanki (Miss State Univ)
Ray Whittington (Miss State Univ)

HFIR, US/Japan WAND (HB-2C)
Hiroshi Fukazawa (JAEA)

HFIR, TAS (HB-3)
Xiaoli Tang (Calif Inst of Tech)
Chen Li (Calif Inst of Tech)
Jorge Munoz (Calif Inst of Tech)
Lee Robertson (ORNL NScD)
Steve Nagler (ORNL NScD)
Andrew Christianson (ORNL NScD)
MarkLumsden (ORNL NScD)
Karl Marty (ORNL NScD)

HFIR, Four Circle Diffractometer (HB-3A)
Christina Hoffmann (ORNL NScD)
William Ratcliff (NIST NCNR)
Karunkar Kothapalli (NIST NCNR)
Bryan Chakoumakos (ORNL NScD)
Jie Ma (ORNL NScD)
Olivier Delaire (ORNL NScD)
Huibo Cao (ORNL NScD)
Xiaoping Wang (ORNL NScD)

Local Happening

5/23/2011 – Seminar
Development of Magnetic Resonance Techniques for Biophysics Applications: EPR Oximetry and MRI for Susceptibility Mapping, Deepti Vikram, Bldg. 8600, C156, 10:30 -11:30 AM

5/23/2011 – Seminar
Search for Majorana Fermions in p-Type Semiconductor Thin Films and Nanowires, Chuanwei Zhang, Washington State University, Bldg. 4515, Room 265, 11:00 AM-12:00 PM

5/26/2011 – Seminar
NSSD Technical Forum: Neutron Imaging Capability at CG-1, Hassina Biheux, Building 8600, Room C-156, 9:30 - 10:30 AM

5/26/2011 – Seminar
Infrared Mafneto-Optical Studies of Graphene, Prof. John Cerne from the University at Buffalo, 4515/HTML, Room 265, 11:00 AM-12:00 PM