



ICC-IMR WORKSHOP

International Workshop on Inelastic Neutron and X-Ray Scattering in Strongly Correlated Electron Systems

October 1-3, 2008

Venue: Lecture Hall [1st floor, 2nd bldg.]
Institute for Materials Research, Tohoku University

Speakers:

T. ADACHI (Tohoku Univ.)	A. MISHCHENKO (RIKEN)
H. AOKI (Univ. of Tokyo)	N. MOMONO (Muroran Inst. of Tech.)
M. ARAI (JAEA)	M. MORI (Tohoku Univ.)
A. Q. R. BARON (SPring-8)	T. MORINARI (Kyoto Univ.)
T. DEVEREAUX (Stanford Univ.)	H. MUKUDA (Osaka Univ.)
H. EISAKI (AIST)	N. NAGAOSA (Univ. of Tokyo)
I. EREMIN (MPI-Dresden)	S. R. PARK (Yonsei Univ.)
M. FUJITA (Tohoku Univ.)	D. REZNIK (Karlsruhe)
S. FUJIYAMA (RIKEN)	Y. SAKURAI (Spring-8)
M. GREVEN (Stanford Univ.)	S. TAJIMA (Osaka Univ.)
T. HANAGURI (RIKEN)	T. TOHYAMA (Kyoto Univ.)
S. M. HAYDEN (Univ. of Bristol)	K. TOMIYASU (Tohoku Univ.)
A. INO (Hiroshima Univ.)	S. UCHIDA (Univ. of Tokyo)
K. ISHII (JAEA)	T. YOSHIDA (Univ. of Tokyo)
C. KIM (Yonsei Univ.)	

Organized by

- the International Collaboration Center (ICC-IMR), IMR, Tohoku Univ.
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Program: <http://www.yamada-lab.imr.tohoku.ac.jp/pdf/program081001.pdf>

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**International Workshop on
"Inelastic Neutron and X-Ray Scattering in Strongly Correlated Electron Systems"
(October 1–3 at Institute for Materials Research, Tohoku University)**

October 1 (Wed.)

10:30–10:40 Greetings

Phonon Chair: Junichiro MIZUKI (JAEA)

10:40–11:10 Anomalous Nature of Electron–Phonon Coupling in Cuprate Superconductors
Dmitry REZNIK (Karlsruhe)

11:10–11:40 Excitations in Correlated Materials via High–Resolution Inelastic X–Ray Scattering:
This Generation and the Next
Alfred Q.R. BARON (SPRING-8)

11:40–12:10 Magnetic and Lattice Excitations in CoO, the Simplest Strongly Correlated Electron System
with an Orbital Angular Momentum
Keisuke TOMIYASU (Tohoku Univ.)

Lunch

ARPES Chair: Takami TOHYAMA (Kyoto Univ.)

14:00–14:30 Fermi Arc and Pseudogap of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ Observed by Angle–Resolved Photoemission
Spectroscopy
Teppei YOSHIDA (Univ. of Tokyo)

14:30–15:00 Pseudo–Gap in Electron Doped Cuprates: Spin Fluctuation Origin and Close Relation with
Superconducting Gap
Seung Ryong PARK (Yonsei Univ.)

15:00–15:30 ARPES Study of Single–Layer and Bilayer Cuprates Using Low–Energy Synchrotron
Radiation
Akihiro INO (Hiroshima Univ.)

Coffee Break

Single–layer Chair: Stephen M. HAYDEN (Univ. of Bristol)

16:00–16:30 Recent Neutron Scattering Results for the High–Temperature Superconductors
 $\text{HgBa}_2\text{CuO}_{4+\delta}$ and $\text{Nd}_{2-x}\text{Ce}_x\text{CuO}_{4+\delta}$
Martin GREVEN (Stanford Univ.)

16:30–17:00 Neutron–Scattering Study on Stability of Spin and Charge Orders in La–214 System
Masaki FUJITA (Tohoku Univ.)

17:00–17:30 Compton Scattering as a Probe of Fermiology and its Applications to Ruthenates,
Cobaltates and Cuprates
Yoshiharu SAKURAI (Spring-8)

18:00–20:00 Banquet

October 2 (Thurs.)

STM/STS Chair: Hiroashi EISAKI (AIST)

9:00–9:30 Coherence–Incoherence Crossover in the Cuprates
Shinichi UCHIDA (Univ. of Tokyo)

9:30–10:00 Spectroscopic–Imaging STM Studies of Cuprates under High Magnetic Fields – Vortex
Checkerboard Revisited –
Tetsuro HANAGURI (RIKEN)

10:00–10:30 STM/STS Study on Spatially Non–Uniform Pseudogap Structure of High T_c
Superconductors
Naoki MOMONO (Muroran Inst. of Tech.)

Coffee Break

Pseudo–gap Chair: Sadamichi MAEKAWA (Tohoku Univ.)

11:00–11:30 New Structures in the Spin Excitations of $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ and Their Evolution with Doping
and Temperature
Stephen M. HAYDEN (Univ. of Bristol)

11:30–12:00 Cu–Spin Dynamics in the Normal State of High– T_c Cuprates Probed by Muon Spin Relaxation
Tadashi ADACHI (Tohoku Univ.)

12:00–12:30 Quantum Oscillations and Fermi Surface Topology in Underdoped High Temperature
Superconductors
Takao MORINARI (Kyoto Univ.)

Lunch

RIXS Chair: Martin GREVEN (Stanford Univ.)

14:00–14:30 Multi–Orbital Cluster Calculations for K–Edge RIXS
Thomas P. DEVEREAUX (Stanford Univ.)

14:30–15:00 New Development in Resonant Inelastic X–Ray Scattering
Kenji ISHII (JAEA)

15:00–15:30 Strong Correlation Effects in Cuprates as Evidenced from Single–Particle and Charge
Excitations
Takami TOHYAMA (Kyoto Univ.)

Coffee Break

Fe super Chair: Shinichi SHAMOTO (JAEA)

16:00–16:30 Synthesis and Physical Properties of LnFeAsO_{1-y}
Hiroshi EISAKI (AIST)

16:30–17:00 Mechanism of Unconventional Pairing in the Iron–Based Superconductor
Hideo AOKI (Univ. of Tokyo)

Coffee Break

- Fe short talk Chair: Shinichi SHAMOTO (JAEA)
- 17:15–17:30 Evidence of Spin Density Wave in LaFeAsO, the Parent Material of the New Fe-Based Oxypnictide Superconductors
Masatoshi ARAI (JAEA)
- 17:30–17:45 Magnetism, Superconductivity, and Pairing Symmetry in Fe-Based Superconductors
Ilya EREMIN (MPI-Dresden)
- 17:45–18:00 ^{75}As NQR Studies on LaFeAsO $_{1-y}$ and NdFeAsO $_{0.6}$
Hidekazu MUKUDA (Osaka Univ.)
- 18:00–18:15 Resonant Photoemission Study of LaFeAsO $_{1-x}$ F $_x$ and LaFePO $_{1-x}$ F $_x$
Teppei YOSHIDA (Univ. of Tokyo)
- 18:15–18:30 C-Axis Phonons in Fe-As Based Superconductors
Dmitry REZNIK (Karlsruhe)

October 3 (Fri.)

- Spin & Charge Chair: Masatoshi ARAI (JAEA)
- 9:00–9:30 Magnetic and Charge Excitations in the Superconducting Electron-Doped Cuprates
Ilya EREMIN (MPI-Dresden)
- 9:30–10:00 Electronic State in the Overdoped Region Where the Pseudogap Disappears
Setsuko TAJIMA (Osaka Univ.)
- 10:00–10:30 The Interplay of Magnetic Correlations and Electron-Phonon Coupling in the Underdoped Phase of Cuprates: Diagrammatic Monte Carlo Study
Andrey MISHCHENKO (RIKEN)

Coffee Break

- Multi-layer Chair: Thomas DEVEREAUX (Stanford Univ.)
- 11:00–11:30 Genuine Phase Diagram of high-T $_c$ superconductors: Cu-NMR Studies on Five-layered Cuprates
Hidekazu MUKUDA (Osaka Univ.)
- 11:30–12:00 Apical Oxygen and Pairing gap in Cuprates
Michiyasu MORI (Tohoku Univ.)

Lunch

- New Direction Chair: Kazuyoshi YAMADA (Tohoku Univ.)
- 14:00–14:30 Octahedral Rotation and Spin-Orbit Coupling Effects on the Electronic Structures of 4d and 5d Transition Metal Oxides
Changyoung KIM (Yonsei Univ.)
- 14:30–15:00 Magnetic X-Ray Scattering of Spin-Orbital Strongly Coupled Antiferromagnet, Sr $_2$ IrO $_4$
Shigeki FUJIIYAMA (RIKEN)
- 15:00–15:30 Role of Time-Reversal Symmetry in Superconductors
Naoto NAGAOSA (Univ. of Tokyo)
- 15:30–15:40 Closing