

# 4th JAEA Synchrotron Radiation Research Symposium X-Ray and High Magnetic Field

March 5-7, 2009  
Lecture Hall in Public Relations Center, SPring8, Hyogo, Japan

Supported by Priority area; Spin Science in 100 T

Program Ver. Final      04, March. 2009

## March 5th (Thu)

13:30-13:40      Opening      J. Mizuki (JAEA, Japan)

### *[Session 1] Chair; A. Kotani (RIKEN, Japan)*

13:40-14:10 O1      Pulsed magnetic field experiments at the ESRF beam line ID06: Recent progress and future plans      C. Detlefs (ESRF, France)

14:10-14:35 O2      High energy x-ray diffraction under high magnetic fields at DESY      M. von Zimmermann (DESY, Germany)

14:35-15:00 O3      XAS and XMCD under pulsed magnetic fields using energy dispersive beam line      O. Mathon (ESRF, France)

15:00-15:25 O4      Spin chirality detection using non-resonant circular X-ray diffraction      H. Sagayama (Tohoku Univ., Japan)

15:25-15:50 O5      Theory of XAS and XMCD for the field-induced valence transition in RE compounds      I. Harada (Okayama Univ., Japan)

15:50-16:05      Coffee Break

### *[Session 2] Chair; Z. Islam(APS, USA)*

16:05-16:35 O6      Direct evidence of magnetic field induced structural transition in the electron-doped manganite  $\text{Ca}_{0.8}(\text{Sm}, \text{Nd})_{0.2}\text{MnO}_3$       F. Duc (LNCMP, France)

16:35-17:00 O7      Pulsed high magnetic fields used at large instruments (for X-ray and neutron sources): experience, limitations and challenges      P. Frings (LNCMP, France)

17:00-17:25 O9      Magnetic field induced ordered states in geometrically frustrated pyrochlore magnets      B. Gaulin (McMaster Univ., Canada)

17:25-17:50 O10      High field XMCD study on the rare-earth valence fluctuating compounds      Y. H. Matsuda (Univ. of Tokyo, Japan)

17:50-18:15 O11      Field induced lattice deformation of quantum magnets studied by high-field x-ray diffraction      Y. Narumi (Tohoku Univ., Japan)

## March 6th (Fri)

### *[Session 3] Chair; T. Sakai (JAEA, Japan)*

- 9:00-9:25 O12 Angle resolved photoemission study on uranium heavy Fermions  
S.-I. Fujimori(JAEA, Japan)
- 9:25-9:50 O13 Semiconductor nanostructure growth observed by in situ X-ray diffraction  
M. Takahasi(JAEA, Japan)
- 9:50-10:15 O14 Exotic properties of vanadium oxides under pressure  
K. Ohwada (JAEA, Japan)
- 10:15-10:40 O15 Momentum-resolved charge excitations in correlated electron systems  
studied by resonant inelastic x-ray scattering K. Ishii (JAEA, Japan)
- 10:40-11:00 Coffee Break

### *[Session 4] Chair; C. Detlefs (ESRF, France)*

- 11:00-11:25 O16 Soft x-ray resonant scattering study on A-type antiferromagnetic ordering in  
LaSr<sub>2</sub>MnO<sub>7</sub> J.-H. Park (POSTEC, Korea)
- 11:25-11:50 O17 X-ray diffraction measurements under high magnetic fields on triangular  
lattice antiferromagnet CuFeO<sub>2</sub> N. Terada (NIMS, Japan)
- 11:50-12:20 O18 Patterns of Strain in Nanocrystals  
I. Robinson (University College London, UK)
- 12:20-13:30 Lunch

### *[Session 5] Chair; F. Duc (LNCMP, France)*

- 13:30-14:00 O19 High field, pulsed magnet system for x-ray studies of materials at the APS  
Z. Islam (APS, USA)
- 14:00-14:25 O20 Structural Changes in Correlated Electron Systems: Studies at the NSLS  
High-Field Facility C. Nelson (BNL, USA)
- 14:25-14:50 O21 Iron Semiconductors and Superconductors C. Petrovic (BNL, USA)
- 15:00-16:30 Laboratory tour
- 16:30-17:45 Poster session
- 18:00-19:30 Banquet

## March 7th (Sat)

*[Session 6] Chair; S. Takeyama (University of Tokyo, Japan)*

- 9:00-9:25 O22 Neutron diffraction in high magnetic fields, past, present and future  
H. Nojiri (Tohoku Univ., Japan)
- 9:25-9:50 O23 Neutron scattering study of spinel magnets in magnetic field  
M. Matsuda (JAEA, Japan)
- 9:50-10:15 O24 Resonant magnetic X-ray diffraction study of TbB<sub>4</sub> under pulsed high  
magnetic field T. Inami (JAEA, Japan)
- 10:15-10:40 O25 Development of high field ESR using a cantilever and a possible  
combination with the X-ray measurement H. Ohta (Kobe Univ., Japan)
- 10:40-11:00 Coffee Break

*[Session 7] Chair; H. Nojiri (Tohoku University, Japan)*

- 11:00-11:25 O26 Field-induced quantum phase transitions in low-dimensional spin systems  
T. Sakai (JAEA, Japan)
- 11:25-11:50 O27 Electronic ferroelectricity and magneto-dielectric effect in correlated  
electron system S. Ishihara (Tohoku Univ., Japan)
- 11:50-12:15 O28 Theory of High-Magnetic-Field XAS and XMCD at L Edges of Mixed  
Valence Ce and Yb Compounds A. Kotani (RIKEN, Japan)
- 12:15-12:25 Closing H. Nojiri (Tohoku University, Japan)

## Poster session

16:30~17:45 on March 6th (Fri)

- P1 High magnetic field studies of multiferroic  $\text{RMnO}_3$  compounds  
J. Stremper(HASYLAB/DESY, Germany)
- P2 Design study of high field continuous magnets suitable for diffraction experiments  
F. Debray(CNRS LNCMI Grenoble, France)
- P3 X-ray Magnetic Circular Dichroism Studies of Paramagnetics  
A. Rogalev(ESRF, France)
- P4 Actively Shielded Split-Pair Magnets for Neutron Scattering  
L. Santodonato(ORNL, USA)
- P5 In-Field scattering studies using a cryogen-free 4-Tesla magnet at APS beamline 4-ID-D  
J. Lang(APS, USA)
- P6 Recent development on high magnetic research at Wuhan High Magnetic Field Center of China (WHMFC)  
J. Wang and Y. Huang (WHMFC, China)
- P7 Pulsed Magnetic Field for Neutron Diffraction at J-PARC  
K. Okada(Tohoku University, Japan)
- P8 High magnetic field experiments at BL19LXU in SPring-8: Present Status  
Y. Tanaka(RIKEN, Japan)
- P9 Theoretical study of XAS and XMCD spectra for the field-induced valence transition in Eu compounds  
M. OKO(Okayama Univ., Japan)
- P10 Development and application of high-field and high-pressure ESR system  
T. Sakurai (Kobe University, Japan)
- P11 Half Magnetization Plateau in a Frustrated  $S=1$  Antiferromagnetic Chain  
T. Tonegawa(Fukui Univ. of Technology, Japan)
- P12 Present status of neutron diffraction experiments under high pulsed magnetic fields in reactor facilities  
K. Ohoyama(Tohoku Univ., Japan)
- P13 Possible lattice effect in BEC of magnon near the saturation field  
T. Zenmoto(Tohoku Univ., Japan)
- P14 A new light weight capacitor bank system for molecular magnetism  
M. Hayashi(Tohoku Univ., Japan)
- P15 Generalized susceptibility of  $(\text{TMTSF})_2\text{ClO}_4$   
K. Kishigi(Kumamoto University, Japan)
- P16 Structural relations among intermediate phase, martensite phase and X-phase in ferromagnetic shape memory alloy  $\text{Ni}_2\text{MnGa}$   
H. Kushida (Osaka Univ., Japan)
- P17 Metamagnetic transitions in DyCu studied by neutron diffraction and elastic constants measurement  
M. Yasui(Osaka Univ., Japan)

- P18 Recent developments of the electro-magnetic flux compression using Cu lining coil system  
E. Kojima(Univ. of Tokyo, Japan)
- P19 Application of a mega-gauss magnetic field to highly frustrated chromium spinels for the study of magnetic phases  
A. Miyata(Univ. of Tokyo, Japan)
- P20 High-field magnetization of a distorted spin frustration system  $\text{Ni}_5(\text{TeO}_3)_4\text{Br}_2$   
J. L. Her (University of Tokyo, Japan)
- P21 Resonant Magnetic X-ray Diffraction and Magnetization Experiments on the Triangular Lattice Antiferromagnet  $\text{GdPd}_2\text{Al}_3$   
H. Kitazawa(NIMS, Japan)
- P22 Neutron diffraction study on the multiple magnetization plateau in  $\text{TbB}_4$  under Pulsed High Magnetic Field  
S. Yoshii(Tohoku Univ., Japan)
- P23 Spiral charge frustration in molecular conductor  $(\text{DI-DCNQI})_2\text{Ag}$   
H. Seo(JAEA, Japan)
- P24 Field-induced incommensurate order and magnetostriction effect for the quasi one-dimensional XXZ antiferromagnet  $\text{BaCoV}_2\text{O}_8$  K. Okunish(Niigata Univ., Japan)
- P25 Magnetization plateau of the Haldane-gapped spin chain  
H. Nakano(Univ. of Hyogo, Japan)
- P26 Anomalous temperature dependence of the magnetization of a spin-gapped chain under finite magnetic field  
K. Okamoto(Tokyo Institute of Technology, Japan)
- P27 Pressure-Induced Valence Anomaly in  $\text{TmTe}$  Probed by Resonant Inelastic X-ray Scattering  
I. Jarrige(JAEA, Japan)
- P28 Growth and Characterization of Bismuth Magnesium Titanate  $\text{Bi}(\text{Mg}_{1/2}\text{Ti}_{1/2})\text{O}_3$   
Y. Yoneda(JAEA, Japan)
- P29 Pressure-Induced Suppression of the Cobalt Magnetic Moment in Laves Phase  $\text{RCo}_2$  ( $R=\text{Dy, Ho, Er}$ ) probed by XMCD  
N. Ishimatsu(Hiroshima University, Japan)
- P30 Temperature dependence of charge excitation spectra in  $\text{Sr}_{14-x}\text{Ca}_x\text{Cu}_{24}\text{O}_{41}$  ( $x=0,6$ ) by resonant inelastic x-ray scattering  
M. Yoshida(JAEA, Japan)
- P31 Phonon Properties on Iron-Based New Superconductors  
T. Fukuda (JAEA, Japan)
- P32 Spectroscopic Investigations for the Chemical Bond Properties of the Actinide and Lanthanide-Soft Donor Complexes and Molecular Design of New Ion Recognition Ligands  
T. Yaita (JAEA, Japan)
- P33 Intermediate-Valence State in the Binary Cd-Yb Quasicrystal  
D. Kawana(JAEA, Japan)
- P34 Dynamic structural change of Pd-perovskite nanoparticles under redox atmosphere studied by dispersive XAFS  
D. Matsumura (JAEA, Japan)
- P35 Development of DC magnets for X-Ray scattering at the NHMFL  
M. D. Bird(NHMFL-FSU)