

NIMS-MPI Workshop on Materials Aspects of Novel Quantum Systems

Day 2 Nov. 19


Venue

Auditorium of the
WPI-MANA Building (The
NAMIKI Site), NIMS

8:50-9:00 **Opening**
Takashi Taniguchi (NIMS, Japan)

9:00-10:15 **Session 1**

Alexei Belik (NIMS, Japan)	A-site columnar-ordered perovskites as a new playground in perovskite science
Kunlang Ji (Kyoto University, Japan)	Corundum-related A ₂ BB'O ₆ : chemical tuning of spin states and lattice structure
Masahiko Isobe (MPI-FKF, Germany)	Exotic phenomena in mixed-valence transition-metal oxides

10:15-10:40 **Coffee break**

10:40-12:15 **Session 2**

	Alannah Hallas (UBC, Canada)	Enhanced electronic homogeneity in high entropy electron-doped cuprates
	Tomohiro Takayama (NIMS, Japan)	Magnetic properties and functionalities of high-entropy oxides
	Sungkyun Choi (IBS-CINAP, South Korea)	Controlled crystal growth of polar altermagnets and their characterization

12:15-13:30 **Lunch**

13:30-15:30 **Session 3**

	Takao Mori (NIMS, Japan)	Novel principles for enhanced thermoelectric materials & devices
	Yoshihiko Okamoto (ISSP University of Tokyo, Japan)	Orbital physics and thermoelectric properties in tetrahedral cluster compounds
	Ayako Yamamoto (Shibaura Institute of Technology, Japan)	Structural variation with temperature and pressure in perovskite-type RbNbO ₃ ferroelectric
	Takayuki Harada (NIMS, Japan)	Quasi-2D conductor PdCoO ₂ for semiconductor devices

15:30-15:55 **Coffee break**

15:55-17:10 **Session 4**

Björn Wehinger (ESRF, France)	Quantum materials at high pressures
Aleksandra Krajewska (MPI-FKF, Germany)	Spin-orbital phases in d ⁴ Mott insulators
Aly Abdeldaim (Diamond Light Source, UK)	Kitaev interactions in the Jeff = 1/2 honeycomb system, RuP ₃ SiO ₁₁

17:15-18:00 **Lab Tour**

18:00 **Reception**
(Namiki Cafeteria)



SCIDRE
SCIENTIFIC INSTRUMENTS DRESDEN GMBH

Tomohiro Takayama, Team Leader (MANA, NIMS)
TAKAYAMA.Tomohiro[at]nims.go.jp

Inquiry

NIMS-MPI Workshop on Materials Aspects of Novel Quantum Systems

Day 3
Nov. 20



Venue

Auditorium of the
WPI-MANA Building (The
NAMIKI Site), NIMS

9:00-10:15 Session 5

Gideok Kim (MPI-FKF,
Germany)

Reactive sputtering growth of pyrochlore ruthenate thin films

Amir-Abbas Haghighirad (KIT,
Germany)

Crystal growth and properties of emerging quantum materials

Andrius Pakalniskis (PSI,
Switzerland)

Synthesis and crystal growth aspects of quantum rare-earth
pyrochlores

10:15-10:40 Coffee break

10:40-12:15 Session 6



Hiroshi Kageyama (Kyoto
University, Japan)

Unconventional routes to quantum materials: anion chemistry
and beyond

Soshi Iimura (NIMS, Japan)

Room temperature conduction of hydride ion in solids

Oliver Clemens (University of
Stuttgart, Germany)

Topochemical reduction of nickelate materials - the oxyfluoride
route

12:15-13:30 Lunch

13:30-15:30 Session 7



Jun Sung Kim (Postech,
South Korea)

Colossal singular angular magnetoresistance in a
quasi-one-dimensional nodal-line ferromagnetic semiconductor

Ryutaro Okuma (ISSP
University of Tokyo, Japan)

Topological Hall excitonic insulator GdGaI

Mohamed Oudah (UBC,
Canada)

Charge-entropy-stabilization and fluctuating valence in
superconducting (Ag,Sn)Se

Seongjoon Lim (MPI-FKF,
Germany)

Symmetry and dimensionality control in intercalated quantum
metals

15:30-17:00 Poster Session

17:00-18:40 Session 8

Noriki Terada (NIMS, Japan)

Crystal electric field level scheme leading to giant
magnetocaloric effect for hydrogen liquefaction

Kristin Kliemt

(Goethe-University Frankfurt,
Germany)

Crystal growth of materials close to elastic critical points

Denise Christovam (MPI-FKF,
Germany)

Challenges exploring a spin-triplet superconductor: from growth
to spectroscopy on UTe₂

Fusako Kon (Hokkaido
University, Japan)

Microscopic study of 5f electrons in UPt₂Si₂ using resonant
X-ray scattering

19:30 Conference Dinner (Tenryu, Tsukuba) Free Discussion



SCIDRE
SCIENTIFIC INSTRUMENTS DRESDEN GMBH

Inquiry

Tomohiro Takayama, Team Leader (MANA, NIMS)

TAKAYAMA.Tomohiro[at]nims.go.jp

NIMS-MPI Workshop on Materials Aspects of Novel Quantum Systems

Day 4
Nov. 21

9:00-10:15 **Session 9**

Andreas Bauer (Technical
University of Munich,
Germany)

Compositional studies of compounds with nontrivial topology
using the floating-zone technique

Akiko Kikkawa (RIKEN,
Japan)

Single crystal growth by laser floating zone technique and small
sample alignment

Monica Ciomaga Hatnean
(PSI, Switzerland)

Developments in the synthesis and crystal growth of quantum
materials

10:15-10:40 **Coffee break**

10:40-11:55 **Session 10**

Pascal Puphal (MPI-FKF,
Germany)

Kagome quantum spin systems

Guratinder Kaur
(University of Edinburgh,
UK)

Magnetoelastic dynamics of the "Spin-Jahn Teller" transition in
CoTi₂O₅

Gøran Nilsen (ISIS
Neutron and Muon
Source, UK)

Is KTi(SO₄)₂(H₂O) the first example of a spontaneously
dimerized frustrated chain?

11:55 **Closing**

Lunch

Excursion

Free Discussion



Venue

Auditorium of the
WPI-MANA Building (The
NAMIKI Site), NIMS



SCIDRE
SCIENTIFIC INSTRUMENTS DRESDEN GMBH

Inquiry

Tomohiro Takayama, Team Leader (MANA, NIMS)
TAKAYAMA.Tomohiro[at]nims.go.jp