SCTE 2021 programme

Monday, April 12th 2021

12:45 – 13:00 Welcome address

13:00 – 14:30 Parallel sessions

Session 1A
In memory of Wolfgang Jeitschko

Chairperson: Peter Rogl

13:00 – 13:30	Takao Mori "Utilizing Magnetism to Enhance Performance of Thermoelectric Materials"
13:30 – 14:00	Antonio Gonçalves "Thermoelectric tetrahedrites: from materials to devices"
14:00 – 14:15	Roman A. Khalaniya "Magnetocaloric properties of $Fe_6Ge_{5-x}Ga_x$"
14:15 – 14:30	Beatriz Santos "Natural Alternatives for Thermoelectric Materials"

Session 1B

Chairperson: Ernst Bauer

13:00 – 13:30	Józef Spałek "Modified statistics of carriers in strongly correlated metals and semiconductors"
13:30 – 14:00	Tomasz Cichorek "Lower critical field of the multiband superconductor $PrOs_4Sb_{12}$"

14:00 – 14:15 Bartłomiej Wiendlocha
"Non-s-wave superconductivity in noncentrosymmetric $ThCoC_2$: Ab initio calculations and Eliashberg formalism"

14:15 – 14:30 Sylwia Gutowska
"The superconductivity of the $SrIr_2$ and $SrRh_2$ Laves phase compounds-phonon engineering of Ir and Rh"

15:00 – 17:00 Plenary session 1

Chairperson: Yuri Grin

15:00 – 16:00 Robert Cava
"Finding New Materials – a Chemical Perspective"

16:00 – 17:00 Paul Canfield
"Synthesis as the heart of New Materials Physics"

17:30 – 18:45 Parallel sessions

Session 2A

Chairperson: Robert Cava

17:30 – 18:00 Yuri Grin
"Structural complexity, chemical bonding and physicochemical properties of transition metals intermetallic compounds"

18:00 – 18:30	Arthur Mar “Discovery of Intermetallic Compounds from Traditional to Machine-Learning Approaches”
18:30 – 18:45	Liliia Kulish “Structure and Frustrated Magnetism of Layered Birnessites $AMnO_2 \cdot yH_2O$ (A = Na, K)”

Session 2B

Chairperson: Paul Canfield

17:30 – 18:00	Herwig Michor “Crystal Growth and Studies of Charge Density Wave Physics in Quasi-1D Metals $RNiC_2$”
18:00 – 18:30	Yuji Furukawa “Relationships between antiferromagnetic spin fluctuations, nematicity and superconductivity in $FeSe_{1-x}S_x$ revealed by ^{77}Se nuclear magnetic resonance”
18:30 – 18:45	Kamil Kolincio “Charge density wave, magnetism and enhanced mobility in ternary carbides $RNiC_2$”

19:00 – 20:00 **Poster session 1**

Tuesday, April 13th 2021

13:00 – 14:30 Parallel sessions

Session 3A

Chairperson: Andrzej Szytuła

13:00 – 13:30	Dai Aoki "Multiple Superconducting Phases and Field-Induced Superconductivity in UTe_2"
13:30 – 14:00	Zakir Hossain "Griffiths Phase and Quantum Criticality in $Ce(Cu_{1-x}Co_x)_2Ge_2$"
14:00 – 14:15	Dávid Hovančík "The complex T-x phase diagram of $UCo_{1-x}Ir_xGe$ system"
14:15 – 14:30	Nhu-Tarnawska Hoa Kim Ngan Superconductivity in U-T splat-cooled systems stabilized in the cubic γ-U phase and magnetism in their (UH_3)-T hydrides ""

Session 3B

Chairperson: Fernando Bartolomé

13:00 – 13:30	Oleg Drozhzhin "Novel electrode materials for metal-ion batteries based on vanadium redox transitions: interplay of crystal structure and electrochemical properties"

13:30 – 14:00 Janina Molenda
"From simple alkaline oxides to high entropy transition metals oxides - applications in electrochemical energy storage. Electronic model of intercalation process"

14:00 – 14:15 Jamal-Eldin F. M. Ibrahim
"Preparation of Nano-structure Mullite-Based Ceramic Composites"

14:15 – 14:30 Rodrigo Coelho
"Carbon as an effective diffusion barrier for $Cu_{11}Mn1Sb_4S_{13}$ Tetrahedrites"

15:00 – 17:00 Plenary session 2

Chairperson: Vladimir Sechovský

15:00 – 16:00 Marek Samoć
"New perspectives for multifunctional materials with enhanced optical nonlinearity"

16:00 – 17:00 Roberto Caciuffo
"Synchrotron Radiation Studies of Actinide Materials"

17:30 – 18:45 Parallel sessions

Session 4A

Chairperson: Mathieu Pasturel

17:30 – 18:00 Vladimir Sechovský
"Phase transitions in U antiferromagnets: $UIrSi_3$ case"

18:00 – 18:30 Krzysztof Gofryk
"Piezomagnetism in Uranium Dioxide"

18:30 – 18:45	Eteri Svanidze “Revealing intrinsic properties of solid-state compounds”

Session 4B

Chairperson: Roman Gladyshevskii

17:30 – 18:00	Valeriy Verchenko “Endohedral cluster intermetallics: a narrow gap between semiconducting and superconducting materials”
18:00 – 18:30	Julian Ledieu “Pseudomorphic Growth of Intermetallics on Al(100)”
18:30 – 18:45	Roman Mukhachev “Changes in the electronic structure and magnetic properties in a series of intermetallic compounds GdTMSi”

19:00 – 19:45 **Parallel sessions**

Session 5A

Chairperson: Anna Tursina

17:30 – 18:00	Kirill Kovnir “Chemistry of chiral and polar tetrel-pnictides of transition metals”
18:00 – 18:30	Kathrin Götze “Probing monopole density and domain wall dynamics in pyrochlore iridates”

Session 5B

Chairperson: Herbert Boller

17:30 – 18:00	Marina Shelyapina “NMR (spectroscopy, relaxometry, diffusometry) to probe metal-hydrogen systems”
18:00 – 18:30	Mohammed Tihtih “Study of the Structure, Microstructure and Temperature Dependent Thermal Conductivity Properties of Strontium Titanate: via Y3+ substitution”

Wednesday, April 14th 2021

13:00 – 14:30 Parallel sessions

Session 6A

Chairperson: Zakir Hossain

13:00 – 13:30	Andrei Shevelkov "Patterns of magnetic ordering in complex europium pnictides"
13:30 – 14:00	Ryszard Zach "Magnetoelastic, magnetocaloric, high pressure properties and electronic structure of MnTX compounds (T = Fe, Co, Ru, Rh, X = P, As, Si, Ge)"
14:00 – 14:15	Jiří Pospíšil "Magnetic anisotropy in van-der-Waals ferromagnet VI_3"
14:15 – 14:30	Alexey Lukoyanov "Electronic structure, correlation effects and stability of tantalum carbides TaC and $TaC_{0.8}$"

Session 6B

Chairperson: Takao Mori

13:00 – 13:30	Ross Colman "Growth optimization of low twinning stress magnetically reorienting, shape memory Heusler alloy crystals"
13:30 – 14:00	Vitaliy Romaka "Stability of Heusler-type phases driven by structural disorder effects"

14:00 – 14:15 Gabriel Kuderowicz
"Superconductivity and soft-mode behavior in Heusler compounds $LiPd_2X$ (X=Si,Ge,Sn) - theoretical studies"

14:15 – 14:30 Alexander Ovchinnikov
"Geometric frustration on a square lattice in the new gold-containing intermetallic phase $LaMn_{2-x}Au_{4+x}$"

15:00 – 17:00 Plenary session 3

Chairperson: Marek Samoć

15:00 – 16:00 Evgeny Antipov
"Transition Metal Phosphates as Perspective Electrode Materials for Na- and K-ion Batteries"

16:00 – 17:00 Ernst Bauer
"Thermoelectricity in Heusler compounds: structure – property relations"

17:30 – 18:45 Parallel sessions

Session 7A

Chairperson: Adriana Saccone

17:30 – 18:00 Mathieu Pasturel
"Magnesiothermy: an efficient route to mesostructured thermoelectric intermetallics"

18:00 – 18:30	Iryna Antonyshyn “Chemical properties of intermetallic compounds: important for catalysis?”
18:30 – 18:45	Filipe Neves “Recovery of mining waste as source of raw material for the synthesis of tetrahedrite-tennantite materials”

Session 7B

Chairperson: Arthur Mar

17:30 – 18:00	Gaël Bastien “Suppression of the magnetic order by hydrostatic pressure or chemical substitution in the Kitaev magnet α-$RuCl_3$”
18:00 – 18:30	Weiwei Xie “Novel Quantum Materials under High Pressure”
18:30 – 18:45	Tomasz Klimczuk “The first-type superconductivity in new Li-based Heusler compounds”

19:00 – 20:00	**Poster session 2**

Thursday, April 15th 2021

13:00 – 14:30 Parallel sessions

Session 8A

Chairperson: Andrei Shevelkov

13:00 – 13:30	Shintaro Ishiwata "Anomalous Magnetotransport Phenomena in a Magnetic Polar Semiconductor"
13:30 – 14:00	Yukihiro Kawamura "Structural Transition and Long Range Ordering of CeCoSi by XRD study under Pressure"
14:00 – 14:15	Artur Błachowski "^{57}Fe and ^{151}Eu Mössbauer studies of 3d-4f spin interplay in $EuFe_{2-x}Ni_xAs_2$"
14:15 – 14:30	Paweł Starowicz "Effects of hybridization between *f*-electrons and conduction band in $CeCoIn_5$ revealed by ARPES"

Session 8B

Chairperson: Antonio Gonçalves

13:00 – 13:30	Jean-Louis Bobet "Hydrogen generation from complex Mg-based materials"
13:30 – 14:00	Laetitia Laversenne "High Pressure Synthesis of light element Hydrides"

14:00 – 14:15 Victor Kuznetsov
"The influence of Cu, Ag and Au on structure and stability of Pd_3M compounds (M = In, Sn)"

14:15 – 14:30 Yuri Prots
"Complexity of the crystal structure of $Al_{28}Ir_9$"

15:00 – 17:00 Plenary session 4

Chairperson: Jean-Louis Bobet

15:00 – 16:00 Alberta Bonanni
"The role of Mn in selected III-nitrides, ferromagnetic topological insulators and 2D $TMPS_3$"

16:00 – 17:00 Tomasz Dietl
"Phase separations and nematicity of transition metal impurities"

17:30 – 18:45 Parallel sessions

Session 9A

Chairperson: Tomasz Dietl

17:30 – 18:00 Madhab Neupane
"Experimental Realization of Topological Insulator and Beyond"

18:00 – 18:30 Zahir Islam
"Complementary X-ray scattering and imaging studies of novel order and mesoscale phenomena in magnetic materials"

18:30 – 18:45 Orest Pavlosiuk
"Fermi Surface Properties of Semimetals $MoSi_2$ and WSi_2"

Session 9B

Chairperson: Weiwei Xie

17:30 – 18:00 Roman Gladyshevskii
"The Family of Crystal Structures with Al- or Ga-Atom Triangles"

18:00 – 18:30 Adriana Saccone
"Phase relationships and intermetallic compounds in R-X-Mg systems (R= rare earth; X=Cu, Ag, Au)"

18:30 – 18:45 Peter Rogl
"Phase Relations, Crystal Structures and Physical Properties in the Sc-rich Part of the Systems Sc-{Mn,Fe,Co,Ni}-Ga"

18:45 – 19:00 Closing

LIST OF POSTER PRESENTATIONS

Poster session 1

1. E. Anikina
   "Study of hydrogen interaction with Ho_2Fe_{17} via Calvet-calorimetry method"

2. A. Broda
   "A Ternary Phase with the $Zr_2Nb_3Ge_4$ Structure Type in the Hf–V–Ge System"

3. M. Gamża
   "Antiferromagnetism in trigonal $CaMn_2P_2$"

4. V. Hreb
   "Phase separation in $Bi_{1-x}Ho_xVO_4$ system"

5. L. Kalandadze
   "Validity of effective medium theory in ferrofluids and nano iron films"

6. D. Kowalska
   "Band engineering of the narrow band gap LaN"

7. S. Królak
   "Physical property measurement and synthesis of ferromagnetic compound Pr_7Ru_3"

8. K. Łątka
   "Heat capacity studies of $EuAg_{5-x}Ga_x$ (x = 0.5 and 1)"

9. R. Martyniak
   "Element Substitution Effects on the Structure and Magnetic Properties of $(Cr,Ni)_{4-x}T_xSi$ Phases"

10. P. Mohanty
    "Effect of Site Mixing in $CoCr_2O_4$ Nanoparticles and Epitaxial Thin Films"

11. E. Murashova
    "Novel $RE_{10}RuAl_3$ Intermetallic Compounds with Heavy Rare Earth Metals"

12. U. Nwankwo
“Observing the Effects of P-Type-Metal-Doping of the Compact-TiO_2 Electron Transporting Layer on the Performance of Perovskite Solar Cells”

13. A. Pavlenko
“Phase equilibria in the Ag–Pd–Sn ternary at 500ºC”

14. N. Pavlyuk
“Crystal structure of the novel MgT_6Ga_6 (T=Ni, Pd) ternary compounds”

15. M. Roman
“Crossover from charge density wave stabilized antiferromagnetism to superconductivity in $Nd_{1-x}La_xNiC_2$ series”

16. M. Samsel-Czekała
“The dual nature of the U 5f electrons in caged UTE_2Al_{10} systems with TE = Fe, Ru, and Os, exhibiting anomalous rattling”

17. D. Sedelnikov
“Intermetallic Compounds $RE_{26}(Ru_xIn_{1-x})_{17}$ (RE - Pr, Nd, Sm, Gd-Tm, Lu)

18. I. Stetskiv
“Electrochemical hydrogenation of $Tb_2Co_{16.5}Sb_{0.2}Li_{0.3}$”

19. M. Tihtih
“Study of the $BaTiO_3$ Electronic Structure Using Density Functional Theory Calculations”

20. A. Tursina
“Ternary Aluminides $Ce_{0.67}Pd_2Al_5$, $Ce_{1.33}Pd_3Al_8$, and $Ce_{1.74}Pd_{5.29}Al_{11.71}$”

21. M. Winiarski
“Electronic structure of $Tl_xLa_{1-x}N$ materials”

22. N. Zaremba
“New quaternary germanide $Ca_{0.265}Yb_{0.735}Ni_3Ge_2$”

23. A. Zarzecka
“Tuning the CePdIn magnetism by p-electrons and hydrogen”

Poster session 2

1. E. Aoun
   "The effect of calcination temperature on the photocatalytic performance of $SrNiO_{3-\delta}$ nanoparticuls for the degradation of Rose Bengal under UV irradiation"

2. N. Dominyuk
   "Crystal structure of $LaRh_{0.65}Ge_{0.35}In$, $CeRh_{0.71}Ge_{0.29}In$ and $SmRh_{0.67}Ge_{0.33}In$ compounds"

3. K. Górnicka
   "Characterization of the Laves-phase superconductors ROs_2 (R = Sc, Y, Lu)"

4. J. Rahman
   "Synthesis and crystal structure of Sb-based high entropy alloys"

5. R. Kara
   "On Electrochemical synthesis and characterization of p-type cuprous oxide thin films: Effects of Na aluminate solutions"

6. H. Krarcha
   "Theoretical study of structural, elastic, mechanical, thermic and vibrational properties of new transition metal iodide perovskites: Cs_2MI_6 (M=Zr, Ti, Hf &Pt)"

7. A. Kuchin
   "Cr or V - doped GdFeSi compound"

8. L. Litzbarski
   "Magnetic behavior of disordered ternary AlB_2-type intermetallics RE_2TGe_3"

9. D. Moço
   "Development of new thermoelectric materials – Tetrahedrite co-doped with Nickel and Selenium"

10. Y. Morozova
    "The phase equilibria of the Ce-Pt-Al system"

11. S. Nesterenko
    "Two polymorphs of Ce_2Rh_2Ga"

12. I. Oshchapovskyy
“Complementing diffraction data by first-principle calculations: hydrogen sublattice in Mg_2NiH_x (x=0.3) hydride”

13. V. Pavlova
“New intermetallic $SmRu_{0.26(1)}Sn_2$”

14. S. Pukas
“New Representatives of the Structure Type $Y_3NiAl_3Ge_2$”

15. P. Ruszała
“Tilted Dirac cone gapped due to spin-orbit coupling and transport properties of a 3D metallic system $CaIr_2Ge_2$”

16. M. Sahakyan
“Density Functional Theory study of electronic structure and magnetic properties of $CePd_2P_2$”

17. V. Shilov
“Electronic structure and magnetic properties of Heusler alloy $Mn_{1.5}Fe_{1.5}Al$”

18. H. Świątek
“Crystal structure and physical properties of $Mg_{2-x}In_xNi$ solid solution”

19. L. M. Tran
“Synthesis of single crystal $GdFe_{1-x}Co_xAs$”

20. J. Veretennikova
“Influence of irregularities on internal fields in multilayer granular systems”

21. N. Zapp
“YHO and HoHO – a Structural Exception in Rare Earth Chemistry”

22. O. Zaremba
“Four-Component Perovskite Phases in Ca–R–Fe–O Systems, where R = Rare-Earth Metal”

23. L. Zinko
“Crystal Structure of the $Hf_5Re_{1.36}Al_{2.64}$ Compound”