



INSTITUT ZA FIZIKU

**European
C-MetAC**



ECMetAC Days 2024

Zagreb, November 25 – 28, 2024

Conference schedule:

Monday, November 25

*Venue: hotel Dubrovnik,
Conference room:
BAN FRANKOPAN*

<i>ED&I Workshop (Magdalena Wencka)</i> - Innovative researcher: how to make an impression when presenting data.	
15:00 – 16:00	Zoom with Joanna Janowicz (speech and Q&A)
16:00 – 16:15	Coffee break
16:15 – 17:00	Interviews with ECMetAC scientists of different generations
17:00 – 17:30	Training

Venue: Hotel Central

16:00 – 20:00 Registration

18:00 – 20:00 Welcome reception

Tuesday, November 26

Venue: Institute of Physics

8:45 Opening

Welcome address by director of Institute of Physics

Osor S. Barišić, head of the Physics department of the Faculty of Science **Ivan Kupčić** and CEO of the **ECMetAC Julian Ledieu**

Session 1	Chair: Ana Smontara
9:00	Jean-Marie Dubois (Ljubljana & Nancy) <i>A quick look backwards to the origin of the ECMetAC network</i>
9:30	Yuri Grin (Dresden) <i>Structural complexity and transverse Seebeck effect</i>
10:05	Julian Ledieu (Nancy) <i>The ECMetAC current status and opportunities</i>

10:20 Coffee break

Session 2	Chair: Iryna Antonyshyn
10:50	Eteri Svanidze (Dresden) <i>Chemical facets of superconductivity in UTe_2</i>
11:20	Ana Akrap (Zagreb) <i>Magnetism and band structure of $EuCd_2As_2$</i>
11:40	Rachel Nixon (Dresden) <i>Superconductivity of transition metal mercurides</i>
12:00	Nives Štrkalj (Zagreb) <i>Exploring (multi)ferroic order at interfaces of oxide heterostructures</i>
12:20	Mirta Herak (Zagreb) <i>Magnetoelectric effect and symmetry in topological antiferromagnet Cu_3TeO_6</i>

12:40 Lunch

Session 3 Chair: Petar Popčević	
14:10	Neven Barišić (Zagreb & Vienna) <i>High-Tc Cuprates: From Synthesis to Phenomenology</i>
14:30	Janez Dolinšek (Ljubljana) <i>Physical properties of intermetallic phases: The Ljubljana–Zagreb cooperation</i>
14:50	Peter Gille (München) <i>Czochralski single crystal growth of intermetallics for studies of electronic and magnetic properties</i>
15:10	Ante Bilušić (Split) <i>Electric properties of WN_x in magnetic field</i>

15:30 Coffee break

Session 4 Chair: Marc Armbrüster	
16:00	Marc Heggen (Jülich) <i>In-situ transmission electron microscopy study of nanoparticle alloy catalysts</i>
16:30	Iryna Antonyshyn (Berlin) <i>Interplay between experiment and theory: Al-Pt compounds</i>
16:50	Jacob Wright (Dübendorf) <i>Asymmetric Heterogeneous Catalysis of Chiral Molecules on PdGa{111}</i>
17:10	Florian Brix (Nancy) <i>Structure of an Ultrathin Oxide on InPd(100) and machine-learning assisted catalysis study</i>
17:30	Anton Kabaši (Split) <i>Thermal transport measurement in Nafion thin films: the 3-omega method</i>

18:00 **Poster session**

19:00 EB meeting

Wednesday, November 27

Venue: Institute of Physics

Session 5	Chair: Magdalena Wencka
9:00	Andreja Jelen (Ljubljana) <i>Correlating multiscale structural properties to magnetic characteristics of HEAs</i>
9:30	Julia Petrović (Ljubljana) <i>Physical properties of $Ce_xNdPrSm$ ($x = 0.01-1.5$) medium-entropy alloys</i>
9:50	Primož Koželj (Ljubljana) <i>$CeFe_9Si_4$: Magnetism in an intermetallic compound with transition metal and rare earth atoms</i>
10:10	Priyanka Reddy (Vienna) <i>High-entropy magnetism of murunskite</i>

10:30 Coffee break

Session 6	Chair: Roland Widmer
11:00	Yannick Champion (Grenoble) <i>Entropy and Structure of high entropy metallic alloys</i>
11:20	Laetitia Laversenne (Grenoble) <i>High entropy alloys for solid state storage of hydrogen</i>
11:40	Janusz Tobola (Krakow) <i>Interplay of chemical disorder and local structural dislocations in superconducting high-entropy alloys</i>
12:00	Vincent Fournée (Nancy) <i>Structural and magnetocaloric properties in rare-earth free high-entropy alloys</i>
12:20	Emil Babić (Zagreb) <i>Electronic structure of compositionally complex alloys: challenges and prospects</i>

12:40 Lunch

Session 7 Chair: Hem Raj Sharma	
14:10	Gabriel Kuderowicz (Krakow) <i>Study of lattice dynamics and electron-phonon interaction in SnTe:In and PbTe:Tl</i>
14:40	Émilie Gaudry (Nancy) <i>Hydrogen, oxygen, and lead adsorbates on Al₁₃Co₄(100): accurate potential energy surfaces at low computational cost by machine learning and DFT-based data</i>
15:00	Marek Mihalkovič (Bratislava) <i>Spontaneous metal-semiconductor phase transition in atomistic simulations of liquid and amorphous Germanium</i>
15:20	Kacper Pryga (Krakow) <i>Electronic structure and transport properties of Fe doped γ CuI – complex interplay of Fe impurities</i>
15:40	Joanna Marciniak (Poznan) <i>Giant magnetocrystalline anisotropy energy in Fe–Co alloy under uniaxial compression: first-principles prediction</i>

16:00 Coffee break

Session 8 Chair: Thomas Seyller	
16:30	Johannes Roth (Stuttgart) <i>Impact of hyperthermal oxygen on alumina surfaces investigated by molecular dynamics simulations</i>
16:50	Oksana Karychort (Dresden) <i>New samarium and ytterbium iron arsenides: crystal structure and physical properties</i>
17:10	Sylwia Nowak (Krakow) <i>Determination of the second order plastic incompatibility stresses in deformed hexagonal materials</i>

17:30	Radovan Bujdák (Trnava) Novel oxo-peroxide and oxo-superoxide phases in Ni-O binary system
17:50	Closing remarks (Ronan McGrath, Mario Novak)

19:30 gala dinner

Venue: Hotel Central

Thursday, November 28

Venue; Institute of Physics

8:00	Science Board Meeting
9:45	Coffee break
10:15	Governing Board Meeting and General Assembly

12:00 Lunch

Poster session

Tuesday, November 26, 18:00 - 20:00

Venue: Institute of Physics

P1	Luka Akšamović (Vienna) <i>High T_c cuprates: fabrication of 2D devices</i>
P2	Ahowd Alfahad (Liverpool) <i>Surface Atomic and Structure of In₃Ni₂ Intermetallic</i>
P3	Mario Basletić (Zagreb) <i>Magnetotransport properties of selected high entropy alloys</i>
P4	Ireneusz Buganski (Krakow) <i>Synthesis and structural analysis of ZnMgEr P-type quasicrystals</i>
P5	Diana Fabušová (Trnava) <i>Theoretical investigation of novel palladium suboxide Pd₂O</i>
P6	Vincent Fournée (Nancy) <i>Single crystals of Nd-Fe-B permanent magnets and UHV surface investigation of their surface structure.</i>
P7	Simon Kümmel (Stuttgart) <i>Investigation of excitation-induced non-thermal effects in semiconductors, metals and alloys</i>
P8	Go-Woon Lee (Daejeon) <i>XRD/FIB/SEM characterization of the Ce_xPrNdSm high-entropy alloys</i>
P9	Jože Luzar (Ljubljana) <i>Physical properties of supersilicent (GaNi)_xCoCrFe high-entropy alloys</i>
P10	Wilfred Bajoun Mbajoun (Nancy) <i>Single-grain re-engineered Nd-Fe-B permanent magnets.</i>
P11	Peter Mihor (Ljubljana) <i>Magnetic softness and vanishing magnetostriction in high-entropy alloys (GaNi)_xCoCrFe (x = 0.4–1.6)</i>
P12	Seyed Ashkan Moghadam Ziabari (Zagreb) <i>Temperature dependent electrical resistivity measurement of Mn₂P under high pressure</i>

P13	Jana Mužević (Zagreb) <i>Single crystal synthesis of doped murunskite</i>
P14	Juraj Nálepka (Trnava) <i>Characterization of lightweight TiAlSc multi-principal element alloy</i>
P15	Nikolina Penić (Zagreb) <i>Role of the functional group effect in tailoring rare supramolecular copper(II) magnetic architectures</i>
P16	Gaurav Pransu (Zagreb) Synthesis and Characterization of Magnetic and Transport Properties in Intercalated TMDs
P17	Pavol Priputen (Trnava) <i>Thermal expansion of CoFeNiCu-based multi-principal element alloys</i>
P18	Peter Richter (Chemnitz) <i>Growth and characterization of CoCrFeNi on LaAlO₃ substrates</i>
P19	Petar Sačer (Zagreb) <i>Quantum oscillations in Sn-doped BST2S topological insulator</i>
P20	Wojciech Sas (Zagreb) <i>The study of electronic transport properties of transition metal dichalcogenides under uniaxial pressure using a piezo-driven stress cell</i>
P21	Ana Smontara (Zagreb) <i>Institute of Physics – From participation in the European Network of Excellence, NoE CMA to the partner institution of the European Integrated entre (EC-MetAC)</i>
P22	Josipa Šćurla (Split) <i>Magnetotransport in crystal rutile and anatase</i>
P23	Stanislav Vrtnik (Ljubljana) <i>Spin-glass phase in Zn-Mg-RE (RE = Er, Tm) quasicrystals</i>