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VSB TECHNICAL
UNIVERSITY
OF OSTRAVA



Univerzita Palackého
v Olomouci



3rd SAN4Fuel Summer School and Final Project Workshop

Prague, 1 – 3 October 2025

Emerging Directions in (Photo)Catalysis,
Spectroscopy, Surface Science
and Theory for Sustainable Energy & Chemistry

Majestic Plaza Hotel Prague
www.hotel-majestic.cz

Session

1

Chair:

Štěpán Kment

11:30–12:15 Registration
12:15–12:30 Opening welcome speech by Štěpán Kment and Radek Zbořil
12:30–13:30 Lunch

13:30–14:30 **Patrik Schmuki** (Friedrich–Alexander–Universität Erlangen, Germany)
An overview of single atom catalysis in photo(electro)chemical applications

14:30–15:30 **Giorgio Zoppellaro** (Palacký University Olomouc, Czechia)
Red-ox catalytic processes as seen through the lens of EPR spectroscopy: possibilities and limitations

15:30–16:00 Coffee Break

16:00–17:00 **Michele Melchionna** (University of Trieste, Italy)
Inorganic materials in the circular economy framework

17:00–18:00 **Pavel Hobza** (Institute of Organic Chemistry and Biochemistry of the CAS, Czechia)
Protonic and hydridic hydrogen bond: theory and experiment

19:00 Welcome dinner for speakers and organizers

Session

2

Chair:

Radek Zbořil

Session

1

Chair:
**Giorgio
Zoppellaro**

- 9:00–10:00** **Jayaramulu Kolleboyina** (IIT Jammu, India)
Single-atom-anchored porous materials for next-generation energy solutions
- 10:00–10:30** **Coffee Break**
- 10:30–11:30** **Dana Nachtigallová** (Institute of Organic Chemistry and Biochemistry of the CAS, Czechia)
Exploring the electronic structure of systems with potential Implications for materials design: the ground and excited states
- 11:30–12:30** **Yazhou Zhou** (Max-Planck-Institut for Polymer research Mainz, Germany; VSB - Technical University of Ostrava, Czechia)
Single-atom catalysts: unveiling synthesis strategies and catalytic potential
- 12:30–13:30** **Lunch**

Session

2

Chair:
**Dana
Nachtigallová**

- 13:30–14:30** **Michal Mazur** (Charles University in Prague, Czechia)
Modern microscopy techniques for 2D/3D zeolite-supported metal species: correlative AFM-SEM and electron microscopy insights
- 14:30–15:30** **Jagadeesh Rajenahally** (Leibniz Institute for Catalysis, Germany; VSB - Technical University of Ostrava, Czechia)
Catalysis for sustainable and circular chemistry
- 15:30–16:00** **Coffee Break**

Session

3

Chair:
**Paolo
Fornasiero**

Parallel Session

- 16:00 – 17:00** **Pavel Jelinek** (Institute of Physics of the CAS, Czechia)
Trends and perspectives in on-surface UHV synthesis
- 17:00 – 18:00** **Hermenegildo Garcia** (Universitat Politecnica de Valencia, Spain)
Photothermal catalysis for solar fuels production
- 18:00 – 19:00** **Meeting of the SAN4Fuel Consortium**
- 19:00** **Dinner for speakers and organizers**

- 11:00 – 16:00** **Karolína Neuvirtová, Josef Kafoněk**
Parallel Session on Administrative Skills: EU grant auditing, financial administration, and accounting

Session

1

Chair:
Yazhou
Zhou

- 9:00–9:20 **Sourav Rej** (Palacký University Olomouc, Czechia)
Hybrid photocatalytic systems for hydrogen production
- 9:20–9:40 **Hayoon Jung** (Friedrich-Alexander-Universität Erlangen, Germany;
Palacký University Olomouc, Czechia)
Quantum-confined p-type TiO₂ nanostructures with Pt single atoms enabling photocatalytic nitrate-to-ammonia conversion
- 9:40–10:00 **Gaia Castellani** (University of Trieste, Italy)
Harnessing synergy between nanoparticles and single atoms on C₃N₄ ultrananosheets for enhanced hydrogen evolution
- 10:00 – 10:20 **Lukáš Zdražil** (Palacký University Olomouc, Czechia;
VSB - Technical University of Ostrava, Czechia)
Harnessing the potential of carbon dots in artificial photosynthesis
- 10:20 – 10:40 **Coffee Break**

Session

2

Chair:
Prof.
Jayaramulu
Kolleboyina

- 10:40–11:00 **Thanh-Lam Bui** (Palacký University Olomouc, Czechia;
VSB - Technical University of Ostrava, Czechia)
Plasmon-driven ammonia decomposition on Au/Cu nanocones
- 11:00–11:20 **Imgon Hwang** (Friedrich-Alexander-Universität Erlangen, Germany)
Pt-single-atoms: impact on ORR and OER in photocatalytic and photoelectrochemical processes
- 11:20–11:40 **Giuseppe Sportelli** (University of Trieste, Italy)
Activity-based optimization of PCN/TiO₂ composites for hydrogen evolution

11:40–12:00

Hossein Hejazi (Palacký University Olomouc, Czechia;
VSB - Technical University of Ostrava, Czechia)

Dual single-atom Pd-Pt anchored on semi-amorphous 2D g-C₃N₄ as a photocatalyst for H₂ evolution

12:00–12:30

Štěpán Kment (Palacký University Olomouc, Czechia)

Summary remarks of SAN4Fuel Project

12:30–13:30

Lunch

13:30

Departure