



UNIVERSITÀ  
DEGLI STUDI  
DI TRIESTE



VSB TECHNICAL  
UNIVERSITY  
OF OSTRAVA



Univerzita Palackého  
v Olomouci



## 2<sup>nd</sup> SAN4Fuel Project Summer School: **New Trends in Single-Atom-Based (Photo)Catalysis**

24.-26. June 2024  
Trieste – Giambiagi Lecture Hall  
[www.ictp.it](http://www.ictp.it)

### Monday, June 24

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|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:30 – 10:30  | Participants registration                                                                                                                                                          |
| 10:30 – 11:00 | Opening – Welcome address – <b>Prof. Paolo Fornasiero</b> (University of Trieste, Italy), <b>Prof. Štěpán Kment</b> (Palacký Univesity in Olomouc, Czechia)                        |
| 11:00 – 12:00 | Lecture <b>Prof. Patrik Schmuki</b> (Friedrich-Alexander-Universität Erlangen, Germany) – Single atom co-catalysts in photocatalytic H <sub>2</sub> generation                     |
| 12:00 – 13:30 | Lunch                                                                                                                                                                              |
| 13.30 – 14.30 | Lecture <b>Prof. Radek Zbořil</b> (VSB – Technical University of Ostrava, Czechia) – Carbon-based nanostructures: from low-dimensional chemistry to single-atom engineering        |
| 14:30 – 15:30 | Lecture <b>Dr. Giorgio Zoppellaro</b> (Palacký Univesity in Olomouc, Czechia) – Single atom catalysts and catalytic processes probed via electron paramagnetic resonance technique |
| 15:30 – 16:00 | Coffee break                                                                                                                                                                       |

## Monday, June 24 – continued

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**16:00 – 17:00** Consortium partners meeting: review of the current project status and planning for the second half

**19:00** **Dinner for speakers**

## Tuesday, June 25

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**9:00 – 10:00** Lecture **Prof. Gianfranco Pacchioni** (University of Milano-Bicocca, Italy) – Can we predict the properties of single-atom catalysts?

**10:00 – 10:10** Coffee break (quick refreshment)

**10:10 – 11:00** Lecture **Prof. Alberto Naldoni** (Palacký University in Olomouc, Czechia) – Concentrating light at the nanoscale: fundamentals and application of plasmonic photocatalysts

**11:00 – 12:00** **Dr. Emiliano Fonda** (Synchrotron SOLEIL, France) – Investigating structures at the local scale via X-ray absorption spectroscopy: applications to SAC

**12:00 – 13:00** **Lunch**

**13:00 – 14:00** Lecture **Dr. Phillip Szuromi** Science deputy editor – (Washington, DC, US, From remote)

**14:00 – 15:00** Lecture **Dr. Nikolaos Floratos**, Research & Innovation coach, Horizon Europe (Atika, Greece) – Horizon Europe opportunities for renewable energy and catalysis and understanding its most important aspects (From remote)

**15:00 – 15:30** Coffee break

**15:30 – 16:30** Lecture **Prof. Matthias Beller** (Leibniz Institute for Catalysis, Germany) – Development of hydrogen storage technologies based on formic acid and formates (From remote)



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## Tuesday, June 25 – continued

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**19:00**      **Dinner for speakers**

## Wednesday, June 26

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- 9:00 – 10:00**      Lecture **Dr. Yazhou Zhou** (Max Planck Institute for Polymer Research, Mainz, Germany) – Single-atom catalysts: simplicity and complexity (From remote)
- 10:00 – 10:30**      Lecture **Dr. Eirini Ioannou** (Palacký University in Olomouc, Czechia) – Time management for researchers (From remote)
- 10:30 – 11:00**      Coffee break
- 11:00 – 11:20**      Lecture **Dr. Hossein Hejazi** (Palacký University in Olomouc, Czechia) – Redefining defect engineering in brookite TiO<sub>2</sub>: from single-atom hosts to optimized sites for oxygen evolution reactions
- 11:20 – 11:40**      Lecture **Dr. Hayoon Jung** (Friedrich–Alexander–Universität Erlangen, Germany) – Photocatalytic nitrate reduction to ammonia by p-type TiO<sub>2</sub> nanotubes with quantum confinement and Pt single atom
- 11:40 – 12:00**      Lecture **MSc. Gaia Castellani** (University of Trieste, Italy) – Carbon nitride supported single-atom photocatalysts for hydrogen evolution
- 12:00 – 12:20**      Lecture **Dr. Mahdi Shahrezaei** (Palacký University in Olomouc, Czechia) – Ultrasound-driven defect engineering in TiO<sub>2</sub>-x nanotubes for efficient platinum single atom photocatalysis
- 12:20 – 12:40**      Lecture **MSc. Shanshan Quin** (Friedrich–Alexander–Universität Erlangen, Germany) – Photocatalytic H<sub>2</sub> generation: controlled and optimized dispersion of single atom co-catalysts based on Pt-TCP
- 12:40 – 13:00**      Closing – **Prof. Paolo Fornasiero, Prof. Štěpán Kment**

**13:00 – 14:00**      **Lunch**

**14:00 – 16:00**      Joint Ph.D. program design



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