JSI meeting

on the synthesis, characterization and catalysts applications

25. 5. 2023

The scope is to organize a workshop where we would like to connect knowledge from various research areas at JSI with the goal of combining efforts in related/complementary fields. Talks are invited and will cover:
- different methods for **catalysts synthesis** such as, but not limited, wet chemistry, anodic oxidation, electro deposition, magnetron sputtering, etc.
- **characterization techniques** to evaluate morphology, composition, crystal structure, including various physicochemical properties as, but not limited, UV-VIS, XPS, SEM, TEM, XRD, Raman, EPR, etc.
- catalyst in the **working environment** as performance measurements or modeling under different catalytic conditions for **applications** in various fields including, but not limited, to organic pollutant and microplastic removal, water splitting, CO2 reduction, etc.

The aim of this workshop is to synchronize activities towards **large European or/and national research project**.

Organizers: Belisa Alcantara Marinho, Matejka Podlogar, Sašo Šturm - K7 and Špela Stres - U1, Levin Pal, Tomaž Lutman - U7, Marjeta Trobec, Maša Rener - U9

PROGRAM:

9.00	*Opening*	
	Session I Synthesis of catalysts - 15 min presentation – 10 min questions	
9.10	Synthesis of Ti, O-based nanostructures for catalytic applications	Polona Umek, F5
9.35	Deposition of HEA thin films with PVD methods	Aljaž Drnovšek, F3
10.00	Modeling physicochemical processes at surfaces relevant to heterogeneous catalysis	Anton Kokalj, K3
10.25	*coffee break 20 min*	
	Session II – Characterization of catalysts - 10-15 min presentation – 10 min questions	
10.45	Spectroscopic recognition of structural defects and their impact on metal-oxide nanocatalysts	Vasyl Shvalya, F6
11.10	The use of HPLC-MS for the identification of by-products generated during the catalytic oxidation of organic compounds	Dušan Žigon, O2
11.35	Advanced transmission electron microscopy for the study of catalysts	Sorour Semsari Parapari, K7
12.00	*lunch break 45 min*	
	Session III – Catalyst in the working environment for various applications	
12.45	SrTiO3/Bi4Ti3O12 nanoplatelets as effective photocatalysts for hydrogen evolution	Marjeta Maček Kržmanc, K9
13.10	Photocatalytic degradation of textile fiber-based microplastics	Matejka Podlogar, K7
13.35	Electrification of chemical conversion reactions by magnetic heating of catalysts	Sašo Gyergyek, K8
14.00	*coffee break 20 min*	
14.20	Low-cost nanocatalysts for green hydrogen generation through electrochemical water-splitting	Suraj Gupta, K9
14.45	Synthesis and application of innovative HEO-HEA hybrid catalyst	Belisa Alcantara Marinho, Barbara Ljubec Božiček, K7
15.10	Atomic force microscopy for the characterization of catalyst materials	Hana Uršič, K5
	Session IV – Innovating Together	
15.35	Drafting Future EU Research Projects on Catalysts at JSI	Špela Stres, Levin Pal and Tomaž Lutman
16.30	*End of the event*	

Jožef Stefan Institute, Ljubljana, Slovenia