

12:00 a.m., Monday, 17th April

1st PLENARY SESSION
Materials Engineering

Wojciech Nowak, DSc. Eng., Nina Hutnik, PhD Eng., Michał Wojasiński, PhD Eng.

1 Magdalena Fabin (12:00 a.m. – 12:15 a.m.)

Synthesis and research of micro-nitrocellulose as an additive for non-ideal high-energy materials.

2 Paweł Grzybek (12:15 a.m. – 12:30 a.m.)

Composite alginate membranes with dispersed MQFP hard magnet network as a new concept for highly efficient pervaporative dehydration of ethanol/water mixture.

3 Łukasz Jakubski (12:30 a.m. – 12:45 a.m.)

Synergistic effect of tetranuclear iron (III) molecular magnet and magnetite for high-performance ethanol dehydration through alginate membrane

4 Krzysztof Polaczek (12:45 a.m. – 1:00 p.m.)

Dopamine electropolymerization reaction in the presence of transition metal ions on surface of titanium nanotubes.

5 Szymon Salagierski (1:00 p.m. – 1:15 p.m.)

Injectable hydrogel materials based on chitosan enriched with retinol and resveratrol.

6 Jakub Zabrzycki (1:15 p.m. – 1:30 p.m.)

Development of MoS₂/ZnO/CNMs photocatalysts for hydrogen evolution reaction

2:30 p.m., Monday, 17th April

2nd PLENARY SESSION

Mathematical Modeling, Simulations & Optimization

Wojciech Nowak, DSc. Eng., Nina Hutnik, PhD Eng., Michał Wojasiński, PhD Eng.

1 Alexandru-Constantin Bozonc (2:30 p.m. – 2:45 p.m.)

Computational Fluid Dynamics of Hollow Fiber Membrane Contactor for CO₂ Absorption

2 Monika Jałowiecka (2:45 p.m. – 3:00 p.m.)

New flow field design enhancing the reagent distribution uniformity in direct formic acid fuel cell

3 Radosław Krzosa (3:00 p.m. – 3:15 p.m.)

Titanium dioxide particles breaking in an industrial ball mill – experimental and CFD modelling

4 Adrian Olejnik (3:15 p.m. – 3:30 p.m.)

Coupling the Worlds of Theory and Experiment in Materials Science - several case studies from the perspective of computational chemistry

5 Crina Maria Pricop (3:30 p.m. – 3:45 p.m.)

Modelling photocatalytic carbon dioxide conversion using micro-kinetic modelling of MOFs

6 Mariusz Tyrański (3:45 p.m. – 4:00 p.m.)

Influence of process parameters and geometry of catalyst wire on the ammonia oxidation process – modelling analysis

11:45 a.m., Tuesday, 18th April

3rd PLENARY SESSION

Process equipment & Environmental protection & Other

Katarzyna Jabłczyńska, PhD Eng., Nina Hutnik, PhD Eng., Prof. Andrzej Krasiński

1 Roman Chyzhovych (11:45 a.m. – 12:00 a.m.)

Filtration drying of secondary raw materials of organic origin

2 Johanna Kiss (12:00 a.m. – 12:15 a.m.)

Scale-up of PET glycolysis process applying recyclable catalysts

3 Vladyslava Manastyrskaya (12:15 a.m. – 12:30 a.m.)

Research of obtaining solid fuel briquettes from coffee production waste

4 Stanisław Murgrabia (12:30 a.m. – 12:45 a.m.)

Calorimetric method for determining the microwave heating efficiency of materials

5 Dóra Erdélyi (12:45 a.m. 1:00 p.m.)

Investigation of application and recycling of lipophilic organocatalyst in asymmetric syntheses

6 Dávid Kis (1:00 p.m. – 1:15 p.m.)

Development and application of a new, bio-based solvent

7 Réka Németh (1:15 p.m. – 1:30 p.m.)

Optimization for polycarbonate methanolysis applying a recyclable heterogeneous organocatalyst

12:45 a.m., Wednesday, 19th April

4th PLENARY SESSION

Bioengineering, biotechnology, biomedical engineering

Katarzyna Jabłczyńska, PhD Eng., Michał Wojasiński, PhD Eng., Wojciech Nowak, DSc Eng.

1 Arkadiusz Antonowicz (12:45 a.m. 1:00 p.m.)

Particle Image Velocimetry of 3D-printed biomedical object

2 Aleksandra Bandzerewicz (1:00 p.m. – 1:15 p.m.)

Poly(1,3-propanediol citrate)-based nonwovens for ex-vivo cell culturing

3 Joanna Howis (1:15 p.m. – 1:30 p.m.)

Pseudo-gel ternary systems of xanthan gum in water-ethanol solutions for industrial applications

4 Krystian Jędrzejczak (1:30 p.m. – 1:45 p.m.)

Application of computational fluid dynamics in the risk assessment of hemolysis in patients with atherosclerosis.

5 Piotr Kowalczyk (1:45 p.m. – 2:00 p.m.)

Composite polymer-calcium phosphate porous granulate scaffolds for bone regeneration - design and in vitro study

6 Patrycja Kwiek (2:00 p.m. – 2:15 p.m.)

Color calibration in the study of the vitamin C oxidation process using deep neural networks

7 Rafał Podgórski (2:15 p.m. – 2:30 p.m.)

A fast and simple method for screening production of polymer-ceramic filaments for bone implant 3D printing

8 Patryk Skowroński (2:30 p.m. – 2:45 p.m.)

Multiple emulsions prepared in a helicoidal flow contactor for topical drug delivery

9 Krzysztof Truchel (2:45 p.m. – 3:00 p.m.)

Simplified approach for CFD simulation of hemodynamics inside mitral paravalvular leak

