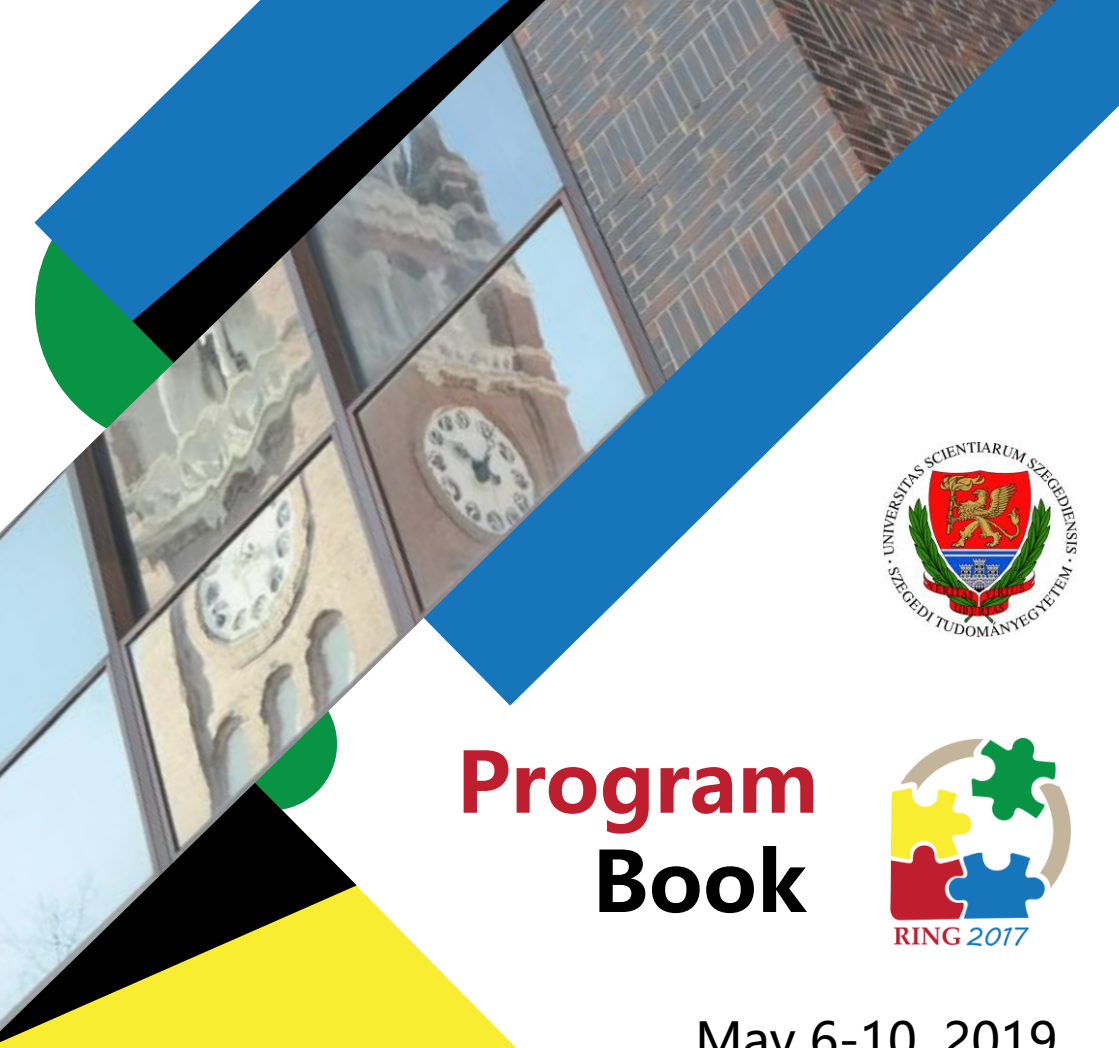

Program Book

RING 2017

May 6-10, 2019
Szeged, Hungary

II. SUSTAINABLE RAW MATERIALS

International Project Week and Scientific Conference

EFOP-3.6.2-16-2017-00010

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Preface

Dear Participants, Dear Guests

In the last decades, sustainability became a key issue in both economy and environment. The careless utilization of resources, the increasing industrial/agricultural production and commercial consumption led to a very serious imbalance between the available raw material stocks and requests. Therefore, urgent solutions are necessary: economize the usage and recovery of resources, application of environmentally sound technologies and circularize the economy as much as possible.

Four Hungarian Universities: the University of Miskolc (coordinator), the University of Pécs, the University of Sopron and the University of Szeged have built up a thematic network on the field of Sustainable Raw Materials and aimed to contribute to the solutions leading to sustainable future.

The main focus points of the project are as follows:

1. *Utilization of waste water and sewage sludge, low CO_2 emission technologies;*
2. Municipal solid waste as a secondary raw material source;
3. Utilization of lignocelluloses;
4. Innovative utilization of bulky industrial and mining wastes and by-products;
5. WEEE - extracting valuable materials from electronic and electric equipment waste.

The Consortium regularly organizes so-called International Project Weeks for extending international connections by inviting expert scientists from all over the world and for discussing results obtained in various labs of the Partner Universities. This is the II. Sustainable Raw Materials meeting - now organized by the University of Szeged - and the topics related to water, waste water and low CO_2 emission technologies give the core of the conference. However, any other subject is also welcome.

Hopefully you will enjoy it.

Welcome to Szeged,

the Organizing Committee

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May 06. Monday

16:00 – 19:00	Arrival, Registration
18:45 – 19:00	Opening ceremony: **Prof. Dr. Zoltán Kónya** (the vice-rector of the University of Szeged) delivers an opening speech
19:00 – 21:00	Welcome Party

May 07. Tuesday

Chairman: Gábor Rákhely

09:00 – 09:40	**Roberto De Philippis** (University of Florence, Department of Agrifood Production and Environmental Sciences, Italy): *Exploitation of microbial photosynthesis for environmentally sustainable biotechnological processes*
09:40 – 10:20	**Spiros N. Agathos** (Université Catholique de Louvain – UCLouvain, Earth and Life Institute, Belgium/Yachay Tech University, Ecuador): *Sustainability - from bioremediation to bioproduction*
10:20 – 10:35	**Coffee Break**

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10:35 – 11:10 **Tomas Macek** (University of Chemistry and Technology, Czech Republic): *Phytoremediation, exploitation of plants with increased stress resistance, improved CO_2 binding*

11:10 – 11:50 **Christos Tsakirouglou** (Foundation for Research and Technology Hellas, Institute of Chemical Engineering Science, Greece): *Nanoremediation: in situ remediation of groundwater by injecting suspensions of zero-valent iron nanoparticles*

11:50 – 12:30 **Lívia Mészáros** (Uppsala University, Department of Chemistry, Sweden): *Biohydrogen production: artificial enzymes in action*

12:30 – 14:00 Lunch

Section I. Presentations of Young Scientists

Chairman: Zoltán Bagi
Co-chairman: Zsolt Pap

14:00 – 14:15 Emily A. Ouma (University of Szeged, Doctoral School of Environmental Science): *Membrane desalination and filtration technologies using renewable energy and waste heat*

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14:15 – 14:30	M. Faisal Fadhil (University of Miskolc): *Recycling possibility of end of life solid-state drives*
14:30 – 14:45	Balázs Kakuk (University of Szeged, Department of Biotechnology): *Metagenomic insights into the anaerobic digestion of short rotation coppice willow reveals its excellent potential as biogas substrate*
14:45 – 15:00	Erika N. Santos (University of Szeged, Doctoral School of Environmental Science): *Purification of oily wastewaters with membrane filtration: opportunities, problems and possible solutions*
15:00 – 15:15	Krisztián Laczi (University of Szeged, Department of Biotechnology): *Microbial enhanced energy recovery from hydrocarbon contaminated soil and groundwater*
15:15 – 15:30	Boglárka Hampel (University of Szeged, Doctoral School of Enviromental Science): *Preparation and characterization of lanthanide doped $NaYF_4$-TiO_2-Au composites*
15:30 – 16:00	**Coffee break**

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Section II. Presentations of Young Scientists

16:00 – 16:15 Márk Szuhaj (University of Szeged, Department of Biotechnology): *Utilization of fermentation residue for biogas upgrading with H_2*

16:15 – 16:30 Naoufal Bellahsen (University of Szeged, Doctoral School of Environmental Science): *Removal of ammonium from milking parlour wastewater by using pomegranate*

16:30 – 16:45 Bounedjoum Naila (University of Szeged, Department of Biotechnology): *Exploitation of extracellular organic matter from micrococcus luteus for soil and water decontamination*

16:45 – 17:00 Mahmood Al Ramahi (University of Szeged, Doctoral School of Environmental Science): *Biodegradability of activated sludge: the role of microwave irradiation pre-treatment on sludge dewaterability and potential biogas production*

17:00 – 17:15 Quyen Van Trinh (University of Miskolc): *Determination of applied pressure on biomass during pelletizing by hydraulic piston press*

17:15 – 17:30 Tamás Oláh (University of Miskolc): *Material balance of end of life buses, focusing on electric and electronic parts*

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17:30 – 17:45 Zsuzsanna Szolyák (University of Miskolc): *Public transport based on biomethane, as an alternative possibility to reduce carbon-dioxide emission*

18:30 Dinner

May 8. Wednesday

Chairman: Cecília Hodúr

09:00 – 09:40 **Martin Imseng** (University of Bern, Institute of Geography Switzerland): *Cd, Cu and Zn mass balances of agriculturally used soils in Switzerland*

09:40 – 10:20 **Balázs Grosz** (Thünen Institute of Climate-Smart Agriculture, Germany): *The ammonia and greenhouse gas fluxes of the organic manure applied agricultural soils*

10:20 – 10:35 Coffee Break

10:35 – 11:10 **Éva Pongrácz** (University of Oulu, Energy and Environmental Engineering Research Unit, Finland): *Critical materials and future challenges of waste management*

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11:10 – 11:50 **Zita Seres** (University of Novi Sad, Republic of Serbia): *Utilization of sugar industry by-products: characterization of sugar beet fibers and molasses*

11:50 – 12:30 **Gulsun A. Evrendilek** (Abant İzzet Baysal Üniversitesi, Department of Environmental Engineering, Turkey): *Novel technologies for wastewater treatment and odour removal*

12:30 – 14:00 Lunch

Section III. Presentations of Young Scientists

Chairman: Éva Pongrácz

14:00 – 14:15 Pham Thi Ha Nhung (University of Szeged, Doctoral School of Environmental Science): *Assessment of current treatment methods and capacity of recycling of spent mushroom substrate at small mushroom growing in the North of Vietnam*

14:15 – 14:30 Khishigsuren Natsagdorj (University of Miskolc): *Experiments on using sunflower seed hulls as a biosorbent for heavy metal removal from effluents*

14:30 – 14:45 Roland Romeda (University of Miskolc): *Possibilities of an optical identification system used to identify secondary mining raw material extracted from e-waste*

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14:45 – 15:00 Chenar A.Tahir (University of Sopron): *Membrane-less microbial fuel cell's productivity with using waste water and slaughter-house waste*

15:00 – 15:15 Charu Agarwal (University of Sopron): *Cellulose as a substrate for modification with functional materials*

15:15 – 15:30 Mária Ambrus (University of Miskolc): *Macro- and microstructural analysis of biomass-fiber reinforced fly ash geopolymer*

15:30 – 16:00 Coffee break

Section IV. Presentations of Young Scientists

16:00 – 16:15 Guillermo Uquillas (University of Miskolc): *Investigation of rheological behavior of different bentonite-water suspensions for environmentally friendly tunnel boring application*

16:15 – 16:30 Quyen Van Trinh (University of Miskolc): *Development of a single pelletiser unit to model biomass raw materials processing in flat die pelletisers*

16:30 – 16:45 Izabella Babcsányi (University of Szeged, Department of Physical Geography and Geoinformatics): *The impact of sewage sludge disposal on the bacterial activity, nutrient and heavy metal content of Chernozem soils and on the plant productivity, SE Hungary*

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16:45 – 17:00 Zsejke-Réka Tóth (University of Szeged, Department of Applied and Environmental Chemistry): *Stability investigations of AgBr photoactive materials*

17:00 – 17:15 Zoltán Kovács (University of Szeged, Doctoral School of Chemistry): *Optimization of solvothermal synthesis of ZnO for the enhancement of the photocatalytic efficiency using Box-Behnken design*

17:15 – 17:30 Tamás Gyulavári (University of Szeged, Department of Applied and Environmental Chemistry): *Preparation and characterization of noble metal modified titanium dioxide hollow structures*

17:30 – 17:45 Roland Romeda (University of Miskolc): *Development of a drag force measuring device to test single waste particles in an air stream*

Free evening

May 09. Thursday

Chairman: Zsolt Pap

09:00 – 09:40 **Sixto Malato Rodríguez** (Plataforma Solar de Almeria-CIEMAT, Spain): *Solar AOPs for wastewater treatment: overview of processes and photoreactors*

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09:40 – 10:20 **Jin Won Seo** (Katholieke Universiteit Leuven, Belgium): *Synthesis and characterization of K-doped TiOx nanostructures for the photocatalytic degradation of organic dyes*

10:20 – 10:35 Coffee Break

10:35 – 11:10 **András Sápi** (University of Szeged, Department of Applied and Environmental Chemistry, Hungary): *Catalysis revolution: with nanotechnology and molecular level understanding towards a green future*

11:10 – 11:50 **Zsolt Czekes** (Babeş-Bolyai University, Hungarian Department of Biology and Ecology, Romania): *Effect of titania photocatalysts on an unusual group of test organisms, the ants*

11:50 – 13:30 Lunch

Section V. Presentations of Young Scientists

Chairman: Zsolt Czekes
Co-chairman: Zsuzsanna László

13:30 – 13:45 Enikő Bárdos (University of Szeged, Department of Applied and Environmental Chemistry): *The effect of the synthesis temperature and duration on the morphology and photocatalytic activity of BiOX (X=Cl, Br, I) materials*

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13:45 – 14:00	Elias J. Sisay (University of Szeged, Doctoral School of Environmental Science): *Dairy wastewater treatment using photocatalytic polymer nanocomposite membrane*
14:00 – 14:15	Nikita Sharma (University of Szeged, Department of Applied and Environmental Chemistry): *Hydrothermal synthesis of BiOBr/MWCNT composites and significance of early formation of $Bi_6O_6(OH)(NO_3)_3 \cdot 1.5H_2O$ as an intermediate compound*
14:15 – 14:30	Szilvia Fodor (University of Szeged, Department of Applied and Environmental Chemistry): *Designed and controlled synthesis of visible light active copper(I)oxide photocatalyst: from the cubes towards the polyhedrons - with Cu nanoparticles*
14:30 – 14:45	Gábor Kovács (University of Szeged, Institute of Environmental Science and Technology): *Investigations of photocatalytic activity and ecotoxicology of Au, Pt/TiO_2 composite catalysts*
14:45 – 15:00	Dániel Orosz and Zsolt Péter (University of Miskolc): *Investigating raw materials for modern batteries from the economist's perspective – cobalt*
15:00 – 15:30	**Coffee break**

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15:30 – 17:30	**For guests: Visiting Szeged with the eye of a geographer**
15:30 – 17:30	**“Sustainable economy” Round Table Discussion: The 5 Research Cell leaders report on their activities in 20-20 min**
19:00	**Closing Ceremony - Conference Dinner**

May 10. Friday – For the partners of the RING 2017 Project

09:00 – 12:00	RING 2017 Networking meeting
12:00 – 12:10	Closure
12:30	Lunch

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