

## Participări și prezentări la conferințe ale doctoranzilor și doctorilor

### **Drd. Ing. Bathori Arthur-Maximilian**

1. C.C. Cormos, A.M. Báthori, A.M. Kasza, M. Mihet, L. Petrescu, A.M. Cormos, *Integration of Direct Air Capture with CO<sub>2</sub> Utilization Technologies powered by Renewable Energy Sources to deliver Negative Carbon Emissions*, 35-th European Symposium on Computer Aided Process Engineering, Ghent, Belgium. 6-9 July 2025;
2. C.C. Cormos, A.M. Bathori, M. Dragan, L. Petrescu, S. Dragan, A.M. Cormos, *Green Hydrogen and Power Co-generation by Sorption-enhanced Biogas Reforming with CO<sub>2</sub> Capture: An Energy, Exergy and Economic Analysis*, 20-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 5 - 10 October 2025, Dubrovnik, Croatia
3. C.C. Cormos, M. Dragan, L. Petrescu, A.M. Cormos, S. Dragan, S.C. Galusnyak, A.M. Bathori, *Assessment of green hydrogen production from sorption-enhanced biomass gasification with CO<sub>2</sub> capture feature*, 18-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 24 - 29 September 2023, Dubrovnik, Croatia
4. C.C. Cormos, M. Dragan, L. Petrescu, S. Dragan, A.M. Cormos, S.C. Galusnyak, F.M. Ilea, A.M. Bathori, *Techno-economic evaluation of synthetic natural gas production based on biomass gasification with CO<sub>2</sub> capture*, 26-th Conference on Process Integration for Energy Saving and Pollution Reduction (PRES'23), 8 - 11 October 2023, Thessaloniki, Greece, published in Chemical Engineering Transactions, 103, 2023, 7-12

### **Drd. Belcovici Alexandra**

1. Belcovici Alexandra, Fort Carmen Ioana, Cotolan Nicoleta, Turdean Graziella Liana, Sustainable water management: clean water using chemically modified electrodes for heavy metal detection, XII INTERNATIONAL BEREMZHANOV CONGRESS ON CHEMISTRY AND CHEMICAL TECHNOLOGY, Al-Farabi Kazakh National University, Almaty, Kazakhstan, 4-6 dec 2024.
2. Belcovici Alexandra, Tocco Davide, Salis Andrea, Turdean Graziella Liana, Metal-organic frameworks as electrode modifiers for dopamine detection, 30th INTERNATIONAL SYMPOSIUM ON ANALYTICAL AND ENVIRONMENTAL PROBLEMS, ISAEP 2024, Szeged, Hungary, 7 - 8 October 2024.
3. Belcovici Alexandra, Fort Carmen Ioana, Cotolan Nicoleta, Turdean Graziella Liana, Nanostructured-based chemically modified electrode for heavy metals detection in water, WATER AND WASTEWATER TREATMENT IN THE INDUSTRY 2023- CHALLENGES OF CIRCULAR WATER MANAGEMENT, Ernő Soós Research and Development Center, Zalakaros, Hungary, 18-19 October 2023.
4. Belcovici A., Fort I. C., Mureșan L. E., Perhaița I., Borodi G., Turdean G. L., Electrochemical detection of lead at zinc oxide nanostructure based modified electrode, 28th INTERNATIONAL SYMPOSIUM ON ANALYTICAL AND ENVIRONMENTAL PROBLEMS, University of Szeged, Szeged, (Hungary) (poster presentation), 14-15 November 2022.
5. Belcovici A., Muresan L. E., Perhaita I. M., Turdean G. L., Heavy metals electrochemical detection using zinc oxide nanoparticles, ISE REGIONAL MEETING, Praga, Czech Republic (oral presentation), August 15th to 19th, 2022.

**Drd. Ing. Biró Levente**

1. L. Biró, A. M. Cormoş, Simulation of fixed-bed reactor for copper-based chemical looping, Chemical and Biochemical Engineering, 2025, pp. 100-101; International Chemical Engineering and Material Symposium - SICHEM 2025, 6-7 November 2025, Bucharest.

**Drd. Adrian Gheorghe Bodescu**

1. Bodescu A. G., Dărăban R. G., Mihály N. B., Cristea C. E., Timis E. C., Kiss A. A., Cristea V. M., Control of the WWTP Water Line Using Traditional and Model Predictive Approaches, 35th European Symposium on Computer Aided Process Engineering (ESCAPE) July 6-9, Ghent, Belgium, 2025.
2. Dărăban R. G., Bodescu A. G., Cristea V. M., Simulation and Calibration of the Mathematical Model ASM2dISS for the Municipal Wastewater Treatment Plant of Cluj-Napoca Using WEST+, International Chemical Engineering and Material Symposium, SICHEM, 6-7 November, ISSN 2537-2254, 2025.
3. Bodescu A. G., Dărăban R. G., Cristea V. M., Decentralized Model Predictive Control of the Nitrification and Denitrification Processes in the Wastewater Treatment Plant, International Chemical Engineering and Material Symposium, SICHEM, 6-7 November, ISSN 2537-2254, 2025.

**Dr. Ing. Boga Biborka**

1. Biborka Boga, István Székely, Tamás Gyulavári, Vasile-Mircea Cristea, Zsolt Pap, Synthesis Design of CaTiO<sub>3</sub> and the Assessment of Photoreactor Design Parameters, 5th EuChemS Conference on Green and Sustainable Chemistry – Conference Proceedings, 2021, pp. 211-212
2. Biborka Boga, Norbert Steinfeldt, Igor Medic, Nikolaos Moustakas, Henrik Lund, Vasile-Mircea Cristea, Zsolt Pap, Jennifer Strunk, The Development of Novel SrTiO<sub>3</sub>-based Catalysts for Photocatalytic Applications, Book of Abstracts - 11. SPEA, 2022, pp. 608-609 (ISBN 979-12-210-0970-5)
3. Biborka Boga, Norbert Steinfeldt, Vasile-Mircea Cristea, Felix Lorenz, István Székely, Tamás Gyulavári, Zsolt Pap, Jennifer Strunk, Correlation Between Hydrothermal Synthesis Conditions – Morpho-Structural Peculiarities – Photocatalytic Efficiency of CaTiO<sub>3</sub> and SrTiO<sub>3</sub>, Book of Abstracts – 55. KAT, 2022
4. Biborka Boga, Nikolaos G. Moustakas, Pawel Naliwajko, Anh Binh Ngo, Shuoping Ding, Tim Peppel, Norbert Steinfeldt, Vasile-Mircea Cristea, Jennifer Strunk, The Design of New SrTiO<sub>3</sub>-based Catalysts for Photocatalytic CO<sub>2</sub> Reduction Applications, 2023, pp. 1015.
5. Biborka Boga, Kevin Baur, Vasile-Mircea Cristea, Norbert Steinfeldt, Norbert Kockmann, Flow and Kinetic Studies of Ciprofloxacin Degradation in a Falling Film Microreactor, Book of Abstracts – NanoBioMat 2023 Winter Edition, 2023, pp. 100 (ISSN 3008-6124)
6. Biborka Boga, Nikolaos G. Moustakas, Pawel Naliwajko, Tim Peppel, Abdo Hezam, Vasile-Mircea Cristea, Norbert Steinfeldt, Jennifer Strunk, Role of SrCO<sub>3</sub> in SrTiO<sub>3</sub>-SrCO<sub>3</sub>-Based Materials for Photocatalytic CO<sub>2</sub> Reduction, Book of Abstracts - 57. KAT, 2024.

### Conference participations, colloquiums

1. 5th European Conference on Green and Sustainable Chemistry (5th EuGSC) (26-29.09.2021, Online) – Bíborka Boga, István Székely, Tamás Gyulavári, Vasile-Mircea Cristea, Zsolt Pap, Synthesis Design of CaTiO<sub>3</sub> and the Assessment of Photoreactor Design Parameters, Oral Presentation
2. 11th European Conference on Solar Chemistry and Photocatalysis: Environmental Applications (11. SPEA) (06-10.06.2022, Torino, Italy) – Bíborka Boga, Norbert Steinfeldt, Igor Medic, Nikolaos Moustakas, Henrik Lund, Vasile-Mircea Cristea, Zsolt Pap, Jennifer Strunk, The Development of Novel SrTiO<sub>3</sub>-based Catalysts for Photocatalytic Applications, Poster – Green Chemistry Poster Prize Issued by the Royal Society of Chemistry
3. 55. Jahrestreffen Deutscher Katalytiker (55. KAT) (27-29.06.2022, Weimar, Germany) – Bíborka Boga, Norbert Steinfeldt, Vasile-Mircea Cristea, Felix Lorenz, István Székely, Tamás Gyulavári, Zsolt Pap, Jennifer Strunk, Correlation Between Hydrothermal Synthesis Conditions – Morpho-Structural Peculiarities – Photocatalytic Efficiency of CaTiO<sub>3</sub> and SrTiO<sub>3</sub>, Poster
4. Data Science in Catalysis – LIKAT Colloquium (13.12.2022, Rostock, Germany) – Bíborka Boga, Vasile-Mircea Cristea, Jennifer Strunk, Machine Learning Algorithms Aiming the Enhancement of the Photocatalytic Performance of Perovskites, Oral Presentation
5. US-German Workshop Series on Artificial Photosynthesis (04.05.2023, Online) – Bíborka Boga, Nikolaos G. Moustakas, Tim Peppel, Abdo Hezam, Shuoping Ding, Anh Binh Ngo, Vasile Mircea Cristea, Norbert Steinfeldt, Jennifer Strunk, The Influence of Photodeposited Gold and/or Impregnated NiO Nanoparticles on the Photocatalytic CO<sub>2</sub> Reduction of SrTiO<sub>3</sub>-SrCO<sub>3</sub>, Poster
6. 15th European Congress on Catalysis (27.08.-01.09.2023, Prague, Czech Republic) – Bíborka Boga, Nikolaos G. Moustakas, Pawel Naliwajko, Anh Binh Ngo, Shuoping Ding, Tim Peppel, Norbert Steinfeldt, Vasile Mircea Cristea, Jennifer Strunk, The Design of New SrTiO<sub>3</sub>-based Catalysts for Photocatalytic CO<sub>2</sub> Reduction Applications, Oral Presentation
7. Applications of Chemistry in Nanosciences and Biomaterials Engineering, Winter Edition (22-24 November 2023, Online) – Bíborka Boga, Kevin Baur, Vasile-Mircea Cristea, Norbert Steinfeldt, Norbert Kockmann, Flow and Kinetic Studies of Ciprofloxacin Degradation in a Falling Film Microreactor, Oral Presentation – Best Paper Award
8. 57. Deutscher Jahrestreffen Katalytiker (57. KAT) (13-15.03.2024 Weimar, Germany), Bíborka Boga, Nikolaos G. Moustakas, Pawel Naliwajko, Tim Peppel, Abdo Hezam, Vasile-Mircea Cristea, Norbert Steinfeldt, Jennifer Strunk, Role of SrCO<sub>3</sub> in SrTiO<sub>3</sub>-SrCO<sub>3</sub>-Based Materials for Photocatalytic CO<sub>2</sub> Reduction, Poster

### Drd. Ing. Bogyor Andrea

#### Prezentări orale

1. Bogyor Andrea, CSAVDÁRI Alexandra, *Determination of ascorbic acid content and antioxidant activity in various beverages*, 29th International Conference on Chemistry (EMT), Târgu-Mureș, Romania, 25-28.10.2023.
2. Bogyor Andrea, CSAVDÁRI Alexandra, *Portable XRF analyser for food sample analysis*, 22th Transylvanian Natural Sciences Conference (EME), Cluj-Napoca, Romania 18.11.2023.
3. Bogyor Andrea, LOVÁSZ Tamás, Turdean Graziella, CSAVDÁRI Alexandra, *Physical – chemistry aspects of methylene blue and its analogue's adsorption from aqueous environments*, International

- Chemical Engineering and Material Symposium (SICHEM 2024), București, Romania, 11-12.04.2024,
4. Bogyor Andrea, CSAVDÁRI Alexandra, LOVÁSZ Tamás, Turdean Graziella, *Kinetic and Thermodynamic Aspects for the Adsorption of Some Synthetic Dyes from their Aqueous Solutions*, 23th Romanian International Conference on Chemistry and Chemical Engineering - RICCE23, Constanța-Mamaia, Romania, 4 - 7.09.2024.
  5. Bogyor Andrea, CSAVDÁRI Alexandra, LOVÁSZ Tamás, Turdean Graziella, *Adsorption of Methylene Blue and its novel analogue. A comparative study*, 30th International Conference on Chemistry (EMT), Cluj-Napoca, Romania, 23 - 26.10.2024.
  6. Bogyor Andrea, CSAVDÁRI Alexandra, *Case study regarding statistic indicators in analysing experimental data*, 23th Transylvanian Natural Sciences Conference (EME), Cluj-Napoca, Romania, 23.11.2024.
  7. Bogyor Andrea, CSAVDÁRI Alexandra, Turdean Graziella, *Clorhexidine digluconate adsorption studies*, The V<sup>th</sup> Young Researchers' International Conference on Chemistry and Chemical Engineering, Cluj-Napoca, Romania, 8 - 10.05.2025.
  8. Bogyor Andrea, CSAVDÁRI Alexandra, Turdean Graziella, *Kinetic and thermodynamic studies of organic pollutants adsorption from water*, 31th International Conference on Chemistry (EMT), Sibiu, Romania, 23 - 25.10.2025. *Special Prize of the Hungarian Chemical Society for the Best Presentation at the Doctoral Plenum. The prize includes membership in the Hungarian Chemical Society and an invitation to participate as a guest at a national conference organized by the Society.*
  9. Bogyor Andrea, Vizitiu Mădălin, CSAVDÁRI Alexandra, Turdean Graziella *Purification of aqueous media by adsorption processes. Case Studies*, 24th Transylvanian Natural Sciences Conference (EME), Cluj-Napoca, Romania, 22.11.2025.

#### Poster presentations

10. Bogyor Andrea, CSAVDÁRI Alexandra, Turdean Graziella, *Preliminary Studies on chlorhexidine adsorption*, International Conference on Green & Sustainable Chemistry -7th EuChemS GSC Conference, Budapest, Hungary, 1-5.06.2025,
11. VIZITIU Mădălin-Andrei, CSAVDÁRI Alexandra, FILIP Alina, Bogyor Andrea, *Removal of chlorhexidine biocide from water by adsorption*, XXIst International Conference “Students for Students”, Cluj-Napoca, Romania, 9 - 13.04.2025.
12. VIZITIU Mădălin-Andrei, CSAVDÁRI Alexandra, BOGYOR Andrea, *A biocide removal from water*, XVIst Scientific Communication Session for Students, Master’s and PhD Students, Iași, Romania, 19.06.2025.

#### **Drd. Ing. Borota Mihaela**

1. Borota M., 'Testing different optimization algorithms for the calibration of a pollutant transport model, XVIIth edition of the International Conference Students for Students, Cluj-Napoca, Romania, 2021.
2. Borota M., Water quality study of surface waters with high nitrogen content and their influence on human health. Spectrophotometric determination of ammonium, nitrites and nitratesPresenter - National Conference Interdisciplinary Students Conference, Cluj-Napoca, Romania, 2021.

3. Borota M., Timis E.C., Transfer of pollutant transport modelling knowledge from River Swale to River The Cut (UK), XVIIIth edition of the International Conference Students for Students, Cluj Napoca, Romania, 2022.
4. Borota M., Timis E.C., Cristea V.M., Hutchins M.G., A method based on sensitivity analysis for the identification of the most influential phosphorus stressors along a river stretch, 3<sup>rd</sup> IAHR Young Professionals Congress, Nov. 2022.
5. Borota M., Cristea V.M., Timiș E.C., Mihaly N.B., Calibration and Validation of Two Advection-Dispersion Models for Rivers, International Chemical Engineering and Material Symposium, SICHEM, Bucuresti, 2022.
6. Borota M., Calibration of an advection-dispersion model to an urban river stretch (River The Cut, UK) to reveal the in-stream phosphorous transformations, Presenter - 13th Symposium for European Freshwater Sciences, New Castle upon Tyne, UK, June 2023.

**Drd. Ing. Bozonc Alexandru**

1. A.-C. Bozonc, C.-C. Cormos, L. Petrescu, S. Dragan, A.-M. Cormos, CO<sub>2</sub> capture using MEA solution in Hollow-Fiber Membrane Contactor: Techno-economic and Environmental Perspectives, 20th Conference on Sustainable Development of Energy, Water and Environment Systems – SDEWES, 5-10 October 2025, Dubrovnik, Croatia.
2. A.-M. Cormos, S.M. Nazir, P. Cobden, V.-C. Sandu, A.-C. Bozonc, C.-C. Cormos, B. Desai, Innovative green hydrogen-fueled smelting process for sustainable and environmentally friendly copper production, 15th European Congress of Chemical Engineering – ECCE, 8-10 September 2025, Lisbon, Portugal.
3. A.-C. Bozonc, L. Petrescu, S.C. Galusnyak, C.-C. Cormos, N.D. Montiel-Bohórquez, E. Catalanotti, Life Cycle Assessment of Advanced Calcium Looping Solutions for the Decarbonization of Steel Industry within CaLby2030 Project, 15th European Congress of Chemical Engineering – ECCE, 8-10 September 2025, Lisbon, Portugal.
4. A.-C. Bozonc, L. Gómez-Coma, G. Díaz-Sainz, A. Irabien, A.-M. Cormos, CO<sub>2</sub> Absorption in Hollow-Fiber Membrane Contactors Using Ionic Liquids: A Combined CFD and Experimental Analysis, 3rd Iberoamerican Congress on Chemical Engineering – CIBIQ, 8-10 September 2025, Lisbon, Portugal.

**Drd. Ing. Cojan Claudia**

1. 17th International conference on materials chemistry (MC17), 07/07/2025 - 10/07/2025, Edinburgh, Great Britain - poster presentation "Mg-PSZ/HAP biocomposites: morphological, structural and surface microhardness evaluation", Bizo L, Bot A-L, Mureșan-Pop M, Barbu-Tudoran L, Cojan CA, Barabás R.
2. 2nd Central and Eastern European Conference on Physical Chemistry & Materials Science - CEEC-PCMS2, 16/09/2024 - 19/09/2024, Kaunas, Lithuania – poster presentation "Cytotoxicity, mechanical properties and ion release from Mg-doped ZrO<sub>2</sub> bioceramics", Cojan CA, Barabás R, Suci M, Covaci E, Frențiu T, Bizo L.
3. 18th International Conference "Students for Students", 06/04/2022-10/04/2022, Cluj-Napoca, Romania - oral presentation "Preparation and phase transformation of Mg-doped ZrO<sub>2</sub> bioceramics", Cojan CA, Bătrînu-Dragoteanu A, Meșter A-L, Bizo L.

4. International Chemical Engineering and Materials Symposium, SICHEM 2022, 17/11/2022-18/11/2022, Bucharest, Romania, poster presentation - "Preparation, structural and morphological properties of zirconia-based ceramics", Cojan CA, Mureșan-Pop M, Barbu-Tudoran L, Bizo L.
5. 17th International Conference "Students for Students", 21/04/2021-24/04/2021, Cluj-Napoca, Romania - poster presentation "ZrO<sub>2</sub>-based nano-biocomposites: solid-state synthesis and morpho-structural characterization", Cojan CA, Marincaș L, Farkas N-I, Bizo L.

#### INFORMAȚII SUPLIMENTARE

##### **Participări la școli de vară/cursuri/conferințe ca vizitator**

1. CASMaT International Summer School 2025 on Advanced Structural and Material Testing – 23/08/2025 – 29/08/2025, Technical University of Denmark, Lyngby Campus, Risø – participant
2. Space Weather Training Course – 24/03/2025 – 28/03/2025, ESEC-Galaxia, Transinne, Belgium & virtual – participant
3. 6th International Doctoral Summer School "From Literature Review to Scientific Report" - 21/08/2024 – 23/08/2024, Virtual Doctoral Summer School – participant
4. Applications of Chemistry in Nanosciences and Biomaterials Engineering, NanoBioMat 2024 – Winter Edition, 27/11/2024 – 29/11/2024, Virtual International Scientific Conference – visitor
5. 52nd Annual Conference of the European Society for Engineering Education (SEFI) "Educating Responsible Engineers" - 02/09/2024 – 05/09/2024, Lausanne, Switzerland – visitor
6. Applications of Chemistry in Nanosciences and Biomaterials Engineering, NanoBioMat 2024 - Summer Edition - 19/06/2024 – 21/06/2024, Virtual International Scientific Conference – visitor

#### **Drd. Dărăban Romina Gabriela**

1. Dărăban R. G., Cristea V. M., Simulation and calibration of the mathematical model ASM1 for the municipal wastewater treatment plant of Cluj-Napoca using WEST+, 5th IAHR Young Professionals Congress, 2024.
2. Bodescu A. G, Dărăban R. G., Mihály N. B., Cristea C. E., Timis E. C., Kiss A. A., Cristea V. M., Control of the WWTP Water Line Using Traditional and Model Predictive Approaches, 35th European Symposium on Computer Aided Process Engineering (ESCAPE) July 6-9, Ghent, Belgium, 2025.
3. Dărăban R. G., Bodescu A.G., Cristea V.M., Simulation and Calibration of the Mathematical Model ASM2dISS for the Municipal Wastewater Treatment Plant of Cluj-Napoca Using WEST+, International Chemical Engineering and Material Symposium, SICHEM, 6-7 November, ISSN 2537-2254, 2025.
4. Bodescu A. G., Dărăban R. G, Cristea V. M., Decentralized Model Predictive Control of the Nitrification and Denitrification Processes in the Wastewater Treatment Plant, International Chemical Engineering and Material Symposium, SICHEM, 6-7 November, ISSN 2537-2254, 2025.

#### **Drd. Ing. Ionela-Dorina Dumbrava**

1. C.C. Cormos, M. Dragan, C. Dinca, A.M. Cormos, S. Dragan, I.D. Dumbrava, F. Ilea, S. Galusnyak, *Economic Assessment of Green Hydrogen Production from Biomass Gasification with Chemical Absorption and Membrane-based CO<sub>2</sub> Capture*, Chemical Engineering Transactions, 94, 2022, 277 – 282;
2. C.C. Cormos, L. Petrescu, A.M. Cormos, S. Dragan, S.C. Galusnyak, I. Dumbrava, F.M. Ilea, V.C. Sandu, *Techno-economic and Environmental Assessment of Cement Production Plants Integrated*

with CO<sub>2</sub> Capture, 16th International Conference on Greenhouse Gas Control Technologies (GHGT-16), 2022, Lyon, France;

3. I.D. Dumbrava, C.C. Cormos, *Evaluations of decarbonized hydrogen production from biomass gasification coupled with carbon capture via calcium looping system*, 13-th International Conference on Sustainable Energy & Environmental Protection - SEEP 2021, Vienna, Austria, 13 - 16 September 2021;
4. C.C. Cormos, A.M. Cormos, L. Petrescu, I.D. Dumbrava, *Techno-economic assessment of flexible hydrogen and power production based on biogas catalytic reforming with carbon dioxide capture feature*, 16th Conference on Sustainable Development of Energy, Water and Environment Systems - SDEWES, Dubrovnik, Croatia, 10 - 15 October 2021;
5. C.C. Cormos, S. Dragan, A.M. Cormos, L. Petrescu, V.C. Sandu, I.D. Dumbrava, S. Galusnyak, *Application of carbonate looping cycle as an energy-efficient decarbonization process of key fossil-intensive industrial applications*, 10th International Conference on Energy and Environment - CIEM 2021, Bucharest, Romania, 14 - 15 October 2021;
6. C.C. Cormos, S. Dragan, A.M. Cormos, L. Petrescu, I.D. Dumbrava, V.C. Sandu, *Evaluation of calcium looping cycle as a time-flexible decarbonization and thermo-chemical energy storage system*, 24th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction - PRES 2021, Brno, Czech Republic, 31 October - 3 November 2021.

### **Dr. Ing. Farkas Noemi Izabella**

#### Prezentari orale

1. Farkas N.-I, Barabás R, *Release study of the mixture of anthocyanin and ibuprofen from nanocomposites based on hydroxyapatite in SBF*, Scientific Conference of Students from Transylvania, 2020, Romania
2. Farkas N.-I, Marinceş L., Barabás R, *Investigation of the in vitro release mechanism of different active substances from nano-hydroxyapatite-based nanocomposites*, 26<sup>th</sup> International Conference on Chemistry, 2020, Romania
3. Farkas N.-I., Barabás R., *Effect of carbon nanostructures on the adsorption and desorption properties of hydroxyapatite*, 35<sup>th</sup> National Student Conference, 2021, Budapest, Hungary
4. Farkas N.-I, Marinceş L., Barabás R., Turdean G.L., *Investigation of hydroxyapatite-based drug delivery systems with fampridine*, 27<sup>th</sup> International Conference on Chemistry, 2021, Cluj-Napoca, Romania
5. Farkas N.-I, Marinceş L., Barabás R, *Characterization of hydroxyapatite-based drug delivery systems*, 21<sup>th</sup> Transylvanian Conference of Natural Science, 2021, Cluj-Napoca, Romania
6. Marinceş L., Farkas N.-I., Barabás R., Toşa M. I., *Preparation of doxycycline containing nanofibers by electrospinning method*, 27<sup>th</sup> International Conference on Chemistry, 2021, Cluj-Napoca, Romania
7. Marinceş L., Farkas N.-I., Barabás R., Toşa M. I., *Preparation and investigation of polylactic acid-based carriers*, 21<sup>th</sup> Transylvanian Conference of Natural Science, 2021, Cluj-Napoca, Romania

#### Prezentari poster

8. Farkas N.-I, Marinceş L., Turdean G.L., Barabás R., *Investigation of silicon-doped hydroxyapatite drug carrier for different active substances*, "Application of Chemistry in Nanosciences and Biomaterials Engineering-NanoBioMat 2021", NanoBioMat2021-winter session, 2021, Romania

9. Marincaș L., Farkas N.-I., Barabás R., Toșa M. I., *Preparation of drug delivery systems from polylactic-acid-based nanofibers*, "Application of Chemistry in Nanosciences and Biomaterials Engineering-NanoBioMat 2021", NanoBioMat2021-winter session, 2021, Romania

**Drd. ing. Marian-Iosif Frîncu**

1. Marian Iosif Frîncu, Florica Imre-Lucaci, Sorin Aurel Dorneanu, Petru Ilea, *Electrochemical regeneration of the leaching solution for metals recovery from WPCBs*, RICCCE 21- 2019, 4-7 Septembrie 2019, Mamaia-România, Poster.
2. Florica Imre-Lucaci, Marian Iosif Frîncu, Kovaci Eniko, Sorin Aurel Dorneanu, Marius Ioan Purcar, Petru Ilea, *Metals selective electrodeposition from leaching solutions resulting in the WPCBs recycling process*, RICCCE 21 - 2019, 4-7 Septembrie 2019, Mamaia-România, Poster.
3. Marian-Iosif Frîncu, Sorin-Aurel Dorneanu, Simona Varvara, Petru Ilea, *Selective electroextraction of copper from aqueous leaching solutions obtained during the recycling of waste printed circuit boards using the KBr + HBr system*, Conferință ISE-71, 31 August 2020, Belgrad-Serbia, Poster.
4. Marian-Iosif Frîncu, Sorin-Aurel Dorneanu, Eniko Covaci, Petru Ilea, *Selective electroextraction of Sn-Pb from Cu free leaching solution obtained during the recycling of waste printed circuit boards using the KBr-HBr system*, Symposium SICHEM – 2020, 17-18 Septembrie 2020, București-România, Poster.
5. Marian-Iosif Frîncu, Sorin-Aurel Dorneanu, Petru Ilea, *Innovative circular process for the electrochemical recovery of the base metals from waste printed circuit boards*, EUROINVENT 13-2021, 20-21 mai 2021, Iași-România, Poster și PRO INVENT 19-2021, 20-22 Octombrie 2021, Cluj Napoca-România, Poster.
6. Marian-Iosif Frîncu, Sorin-Aurel Dorneanu, Petru Ilea, *Process optimization for base metals recovery from waste printed circuit boards using the electrochemical regenerable KBr/HBr/Br<sub>2</sub> system*, Symposium SICHEM – 2024, 11-12 Aprilie 2024, București-România, Poster.
7. Gabriele-Mario Bogdan, Marian-Iosif Frîncu, Sorin-Aurel Dorneanu, *Electrochemical preparation and regeneration of raw materials used in metals recovery from waste printed circuit boards*, RICCCE 23 - 2019, 4-7 Septembrie 2024, Mamaia-România, Poster.

**Dr. Ing. Galusnyak Stefan-Cristian**

1. C.C. Cormos, M. Dragan, L. Petrescu, A.M. Cormos, S. Dragan, S.C. Galusnyak, A.M. Bathori, *Assessment of green hydrogen production from sorption-enhanced biomass gasification with CO<sub>2</sub> capture feature*, 18-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 24 - 29 September 2023, Dubrovnik, Croatia;
2. L. Petrescu, S.C. Galusnyak, F.A. Grozav, A. Imre-Lucaci, C.C. Cormos, *Technical evaluation and comparison of various value-added products derived from glycerol*, 18-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 24 - 29 September 2023, Dubrovnik, Croatia;
3. C.C. Cormos, M. Dragan, L. Petrescu, S. Dragan, A.M. Cormos, S.C. Galusnyak, F.M. Ilea, A.M. Bathori, *Techno-economic evaluation of synthetic natural gas production based on biomass gasification with CO<sub>2</sub> capture*, 26-th Conference on Process Integration for Energy Saving and Pollution Reduction (PRES'23), 8 - 11 October 2023, Thessaloniki, Greece, published in Chemical Engineering Transactions, 103, 2023, 7-12;

4. C.C. Cormos, M. Dragan, C. Dinca, A.M. Cormos, S. Dragan, I.D. Dumbrava, F. Ilea, S. Galusnyak, *Economic Assessment of Green Hydrogen Production from Biomass Gasification with Chemical Absorption and Membrane-based CO<sub>2</sub> Capture*, Chemical Engineering Transactions, 94, 2022, 277 – 282;
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**Dr. Ing. Flavia-Maria Ilea**

1. F.M. Ilea, C.C. Cormos, S. Dragan, A.M. Cormos, *Techno-Economic Implications of Three Phase Fluidized Bed Absorption Column Applied to Power Generation for an Intensified CO<sub>2</sub> Capture Process*, 18-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 24 - 29 September 2023, Dubrovnik, Croatia;
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**Drd. Ing. Kasza Angela-Maria**

1. C.C. Cormos, A.M. Báthori, A.M. Kasza, M. Mihet, L. Petrescu, A.M. Cormos, *Integration of Direct Air Capture with CO<sub>2</sub> Utilization Technologies powered by Renewable Energy Sources to deliver Negative Carbon Emissions*, 35-th European Symposium on Computer Aided Process Engineering, Ghent, Belgium. 6-9 July 2025.

**Drd. Ing. Luca Alexandra-Veronica**

1. A.-V. Luca, M. Simon-Varhelyi, N.-B. Mihaly, M.A. Brehar, V.M. Cristea, Fault diagnosis of the WWTP dissolved oxygen and nitrates sensors, 11th International Conference on Environmental Engineering and Management (ICEEM 11), Muttentz (Switzerland), 8-10 September 2021
2. N.-B. Mihaly, A.-V. Luca, M. Simon-Varhelyi, V.-M. Cristea, Artificial Neural Networks-based identification of the WWTP DO sensor types of faults, 33rd European Symposium on Computer-Aided Process Engineering (ESCAPE 33), Athens (Greece), 18-21 June 2023
3. N.-B. Mihaly, M. Simon-Varhelyi, A.-V. Luca, V.-M. Cristea, Optimization of the wastewater treatment plant recycle flowrates using artificial neural networks, IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR), Cluj-Napoca (Romania), 19-21 May 2022
4. M. Simon-Varhelyi, V.-M. Cristea, A.-V. Luca, M.A. Brehar, Performance comparison of different optimization methods for the wastewater treatment plant model based on the activated sludge model no. 3 and design of the plant control, 31st European Symposium on Computer-Aided Process Engineering (ESCAPE 31), Istanbul (Turkey), 6-9 June 2021
5. M. Simon-Varhelyi, A.-V. Luca, M.A. Brehar, V.-M. Cristea, Calibration of the wastewater treatment plant model based on the activated sludge model no. 2d - case study of a municipal WWTP, World Congress on Civil, Structural, and Environmental Engineering (CSEE' 20), Lisbon (Portugal), 18-20 October 2020
6. D. Cristiu, M. Simon-Varhelyi, A.-V. Luca, M.A. Brehar, V.M. Cristea, Augmenting heat balance of the wastewater treatment plant model and improving plant control by counteracting temperature disturbances, 30th European Symposium on Computer-Aided Process Engineering (ESCAPE 30), Milan (Italy), 24-27 May 2020
7. S.C. Galusnyak, A.-V. Luca, L. Petrescu, C.C. Cormos, A cradle-to-gate LCA analysis of biodiesel production coupled with post-combustion CO<sub>2</sub> capture applied to cement plants, 13th International Conference on Sustainable Energy & Environmental Protection (SEEP), Vienna (Austria), 13-16 September 2021

**Dr. Mihály Norbert-Botond**

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1. Mihaly, N.-B., Simon-Varhelyi, M., & Cristea, V.-M. Data-driven Modelling Based on Artificial Neural Networks for Predicting Energy and Effluent Quality Indices of the Wastewater Treatment Plant. Oral presentation, 16th SDEWES Conference, Dubrovnik, Croatia, 10-15. 10. 2021.
2. Mihaly, N.-B., Luca, A.-V., Simon-Varhelyi, M., & Cristea, V.-M. Optimization of the Wastewater Treatment Plant Recycle Flowrates Using Artificial Neural Networks. Oral presentation, IEEE International Conference on Automation, Quality and Testing, Robotics, Cluj-Napoca, Romania, 19-21. 05. 2022.

3. Mihaly, N.-B., & Cristea, V.-M. Optimization of the Wastewater Treatment Plant Aeration Using Artificial Neural Networks Models. Oral presentation, ESCAPE 32, Toulouse, France, 12-15. 06. 2022.
4. Mihaly, N.-B., & Cristea, V.-M. Cost Reduction and Effluent Quality Improvement for the Wastewater Treatment Plant by Optimization Based on Artificial Neural Network Models. Oral presentation, 17th SDEWES Conference, Paphos, Cyprus, 6-10. 11. 2022.
5. Mihaly, N.-B., & Cristea, V.-M. Artificial Neural Network Architecture Optimization Targeting Wastewater Treatment Plant Performance Prediction. Poster presentation, SICHEM 2022, Bucharest, Romania 17-18. 11. 2022.
6. Mihaly, N.-B., Luca, A.-V., Simon-Varhelyi, M., & Cristea, V.-M. Artificial Neural Networks-Based Identification of the WWTP DO sensor types of faults. Poster presentation, ESCAPE 33, Athens, Greece, 18-21. 06. 2023.
7. Mihály, N.-B., & Csavdári, A. Application of Artificial Neural Networks in Adsorption Studies. A case Study. Oral presentation (in Hungarian), "XXVII. Fialat Műszakiak Tudományos Ülésszaka", Cluj-Napoca, Romania, 17. 03. 2022.
8. Mihály, N.-B., & Csavdári, A. Modelling the Efficiency of the Solid-Liquid Extraction Process by Using Artificial Neural Networks. Poster presentation, 18th International Conference on Chemistry, Oradea, Romania, 27-29. 10. 2022.

**Dr. Ing. Sandu Vlad-Cristian**

1. V.C. Sandu, C.C. Cormos, A.M., Cormos, *Modelling of Chemical Looping Water Splitting for Green Hydrogen Production using Iron-Based Oxygen Carriers in a Packed Bed System*, 19-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 8 - 12 September 2024, Rome, Italy;
2. A.D. Selejan, V.C. Sandu, A.C. Bozonc, A.M. Cormos, S. Dragan, C.C. Cormos, *Mathematical modeling and simulation of green hydrogen production by sorption enhanced reforming process, using biogas as feedstock*, 19-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 8 - 12 September 2024, Rome, Italy;
3. V.C. Sandu, A.M. Cormos, A. Pop, C.C. Cormos, *Experimental Study and CFD Simulation of Thermal Decomposition of Dolomite for Calcination During CaL*, 18-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 24 - 29 September 2023, Dubrovnik, Croatia;
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7. C.C. Cormos, S. Dragan, A.M. Cormos, L. Petrescu, I.D. Dumbrava, V.C. Sandu, *Evaluation of calcium looping cycle as a time-flexible decarbonization and thermo-chemical energy storage system*, 24th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction - PRES 2021, Brno, Czech Republic, 31 October - 3 November 2021.

#### **Drd. Selejan Alessandra**

1. A.D. Selejan, V.-C. Sandu, A.-M. Cormos, S. Dragan, C.-C. Cormos, Mathematical model analysis for hydrogen production by biogas steam reforming process using CFD, Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, 8 – 11 October 2023, Thessaloniki, Greece.
2. A.D. Selejan, V.-C. Sandu, A.-C. Bozonc, A.-M. Cormos, S. Dragan, C.-C. Cormos, Mathematical modeling and simulation of green hydrogen production by sorption enhanced reforming process, using biogas as feedstock, 19th Conference on Sustainable Development of Energy, Water and Environment Systems, 8 – 12 September 2024, Rome, Italy.
3. A.D. Selejan-Ciubancan, S.-C. Galusnyak, L. Petrescu, C.-C. Cormos, Environmental impact assessment of the RESTORE prototype, International Conference on Chemical and Process Engineering, 29 June – 2 July 2025, Florence, Italy.
4. A.D. Selejan-Ciubancan, S.-C. Galusnyak, L. Petrescu, C.-C. Cormos, Decarbonizing district heating: an environmental evaluation of the restore technology, International Conference on Sustainable Energy & Environmental Protection SEEP, 28 – 31 July 2025, London, Great Britain.
5. A.D. Selejan-Ciubancan, S.-C. Galusnyak, L. Petrescu, C.-C. Cormos, An environmental assessment of the restore technology for decarbonizing district heating and cooling, 24<sup>th</sup> International Conference on Life Sciences for Sustainable Development, 25 – 27 September 2025, Cluj-Napoca, Romania.
6. A.D. Selejan-Ciubancan, A.-M. Cormos, L. Petrescu, C.-C. Cormos, Technical and Life Cycle Assessment Analysis of Biogas-fed Sorption-Enhanced Reforming for Green Hydrogen Production, 20th Conference on Sustainable Development of Energy, Water and Environment Systems, 5 – 10 October 2025, Dubrovnik, Croatia.

#### **Dr. Simon-Várhelyi Melinda**

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2. Várhelyi Melinda; Brehar Marius; Cristea Vasile Mircea: Control strategies for wastewater treatment plants aimed to improve nutrient removal and to reduce aeration costs, 2018 IEEE International Conference on Automation, Quality and Testing Robotics (AQTR), Cluj-Napoca (Romania), 24-26 May 2018
3. Cristea Vasile Mircea; Ostace George; Várhelyi Melinda; Brehar Marius: Control strategies of the waste water treatment plant, Symposium SICHEM 2018, Bucharest (Romania), 6-7. September 2018
4. Várhelyi Melinda; Cristea Vasile Mircea; Brehar Marius: Kommunális szennyvíztisztítás hatékonyságának növelése különböző szabályozási stratégiák alkalmazásával: matematikai modellezés és szimuláció / Increasing the efficiency of municipal wastewater treatment by different

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5. Várhelyi Melinda; Cristea Vasile Mircea; Brehar Marius: Calibration of an activated sludge model no. 3-based wastewater treatment plant simulator, CAPE Forum, Bucharest (Romania), 15-17 November 2018
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  7. Crístiu Daniel; Cristea Vasile Mircea; Várhelyi Melinda: Performance improvement of the WWTP operation subject to influent temperature changes, 16th International Conference Students for Students, Cluj-Napoca (Romania), 3-7 May 2019
  8. Várhelyi Melinda; Cristea Vasile Mircea; Brehar Marius: Improving waste water treatment plant operation by ammonia based aeration and return activated sludge control, 29th European Symposium on Computer Aided Process Engineering (ESCAPE), Eindhoven (Netherlands), 16-19 June 2019
  9. Várhelyi Melinda; Cristea Vasile Mircea; Tomoiagă Claudiu; Brehar Marius: External carbon addition control for a municipal wastewater treatment plant, 10th International Conference on Environmental Engineering and Management (ICEEM10), Iași (Romania), 18-21 September 2019
  10. Várhelyi Melinda; Cristea Vasile Mircea: Reducing energy costs of the wastewater treatment plant by improved scheduling of the periodic influent load, 14th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), Dubrovnik (Croatia), 1-6 October 2019
  11. Crístiu Daniel; Simon-Várhelyi Melinda; Luca Alexandra Veronica; Brehar Marius Adrian; Cristea Vasile Mircea: Augmenting heat balance of the wastewater treatment plant model and improving plant control by counteracting temperature disturbances, 30th European Symposium on Computer Aided Process Engineering (ESCAPE), Virtual Symposium, 30 August – 2 September 2020
  12. Simon-Várhelyi Melinda; Luca Alexandra Veronica; Brehar Marius Adrian; Cristea Vasile Mircea: Calibration of the wastewater treatment plant model based on the activated sludge model no. 2d – Case study of a municipal WWTP, 5th International Conference on Environmental Pollution, Treatment and Protection (ICEPTP'20), Virtual Symposium, 18-20 October 2020
  13. Simon-Várhelyi Melinda: Szabályozási stratégiák a szennyvíztisztító telep teljesítményének javítására / Control strategies to improve wastewater treatment plant performance, Hungarian Science Day in Transylvania, 19th Forum, Virtual Symposium, 25 February 2021
  14. Simon-Várhelyi Melinda; Cristea Vasile Mircea; Luca Alexandra Veronica; Brehar Marius Adrian: Performance comparison of different optimization methods for the wastewater treatment plant model based on the Activated Sludge Model No. 3 and design of the plant control, 31th European Symposium on Computer Aided Process Engineering (ESCAPE), Virtual Symposium, 6–9 June 2021

#### **Drd.Varga (Gorbai) Melinda Maria**

1. Gorbai M., M. Csiszér A., Barabás R., Kun I. Z., XXX. International Conference on Chemistry, Cluj-Napoca, 2024. 10. 25-26, Oral presentation. Chemical composition of water sources used as drinking water in settlements situated in Defileul Mureșului Superior and Valea Gurghiului,
2. Gorbai M., M. Csiszér A., Barabás R., Kun I. Z., Érték és mérték, Interdiszciplináris párbeszéd XII. Konferencia, 2024. 11. 28-29. Oral presentation: Érték és mérték az endokrinológia és a kémia összefüggéseiben.

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5. Varga M., M. Csiszér A., Barabás R., Kun I. Z, Scientific Session of University Academic Staff, International Conference of PhD students and Young Doctors, 2025 December 11, Târgu Mureș, <https://zilele.umfst.ro/boa/>, 224.oldal.:, Correlations between clinical and Hamilton test detected depression and serum selenium levels in Săcalu de Pădure”
6. Varga M.M., Csiszér A. , Barabás R. , Kun I.Z., International Conference of PhD Students and Young Doctors, Lithium excess in drinking waters of a mountainous village (Săcalu de Pădure), a potential determination factor for remnant thyroid pathology, *Oral presentation*, Book of abstracts No. 7/2024 George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures. University Days december 9 - 13, 2024, Targu Mures. Scientific Session of University Academic Staff. page 182,