

ENVIRONMENTAL QUALITY ANALYSIS AND BUILDING SERVICES MATERIALS RESEARCH GROUP

Contact details

Name	Environmental Quality Analysis and Building Services Materials Research Group	
Acronym	EBSRG	
Logo		
Site	http://instalatii.utcluj.ro/centre-de-cercetare.html	
Address	128-130 21 December 1989 Blv., 400604, Cluj Napoca, Romania	
Faculty Department	Faculty of Building Services Engineering Department of Building Services Engineering	
Telephone	+40264202552	
Fax	-	
Director	Assoc. Prof. Dr. Eng. Dana-Adriana ILUȚIU-VARVARA	
e-mail	Dana.Adriana.Varvara@insta.utcluj.ro	

Areas of expertise

Environmental factors pollution control; Environmental parameters monitoring; Environmental quality; Indoor air quality (IAQ); Outdoor air quality (OAQ); Water quality; Quality of industrial microclimate; Prediction of the environmental quality factors; Industrial wastes; Hazardous wastes; Wastes recycling; Circular economy; Life cycle assessment; Sustainable development; New materials with special properties; Advanced materials; Materials for building services engineering; Materials chemistry; Applied chemistry; Environmental chemistry.

Team

Assoc. Prof. Dr. Eng. Dana-Adriana ILUȚIU-VARVARA, Assoc. Prof. Dr. Eng. Carmen Maria MĂRZA, Prof. Dr. Eng. Daniela Lucia MANEA, Emeritus Prof. Dr. Chem. Elena-Maria Pică, Assoc. Prof. Dr. Eng. Claudiu ACIU, Assoc. Prof. Dr. Eng. Tania RUS, Lecturer Dr. Eng. Adriana HĂDĂREAN, Lecturer Dr. Eng. Marius FETEA, Lecturer Dr. Eng. Ioan GIURCA, Lecturer Dr. Eng. Anca HOȚUPAN, Lecturer Dr. Eng. Teodor Valeriu CHIRA, Lecturer Dr. Eng. Raluca-Paula MOLDOVAN, Lecturer Dr. Eng. Anagabriela DEAC, Lecturer Dr. Eng. Cristina IACOB, Lecturer Dr. Eng. Daniel RUSU, Lecturer Dr. Eng. Georgiana-Dorina CORSIUC, Lecturer Dr. Eng. Roxana MARE, Lecturer Dr. Eng. Ioana-Monica SASBOCA, Lecturer Dr. Eng. Marius TINTELECAN, Lecturer Dr. Eng. Constantin CILIBIU, Lecturer Dr. Eng. Horațiu-Călin ALBU, Lecturer Dr. Eng. Ana-Maria MOLDOVAN, Lab. Eng. Liviu DODEA.

Representative projects

“An Innovative Circular Economy Training based on BIM and LCA technologies applied to the Construction Industry (BIM-LCA)”, Cooperation partnerships in higher education Erasmus+ KA220-HED, ID 2022-1-NO01-KA220-HED-000087893 (2022-2024).

“Studies and researches regarding the reduction of the negative environmental impact of the pollutants and solid wastes from the steelmaking”, "Development and support of multidisciplinary postdoctoral programs in major technical areas of national strategy of Research - Development - Innovation" **4D-POSTDOC**, contract no. POSDRU/89/1.5/S/52603, project co-funded by the European Social Fund through Sectoral Operational Program Human Resources Development 2007-2013, <http://193.226.17.4:8080/sites/forodoc/default.aspx> (2010-2013).

“Creation of a cooling solar thermoelectric installation (ITERMSOR)”, Internal competition for Research/ Development/ Innovation – Project 16671/12.07.2017, type 1.2 – CI2017_INST_1 (33/2017), Technical University of Cluj-Napoca (2017-2018).

“Research concerning the characterization of the oily mill scale in order to identify a optimum method for reduction of the quantities of hazardous wastes landfilled”, Internal competition for Research/ Development/ Innovation – Project 16362/07.07.2016, C.I. type 1.1 - T4, Technical University of Cluj-Napoca (2016-2017).

“Studies of methods to optimize the use of sludge in the building materials industry”, Internal competition for Research/ Development/ Innovation. Project C.I. type 1.1-T5 / 2016, Technical University of Cluj-Napoca (2016-2017).

Significant results

Articles in ISI rated journals, in the past 5 years:

1. T. Rus, R. P. Moldovan, C. M. Mârza, G. D. Corsiuc, D. A. Iluțiu-Varvara, "Data-driven environments: Evaluating IoT sensors and KNX protocol for monitoring indoor conditions in educational facilities". *Frontiers in Built Environment*, vol. 11, 1688582, 2025.
2. C. Sava, D. A. Iluțiu-Varvara, R. Mare, M. D. Roman, S. Rada, E. M. Pică, L. Jäntschi, "Physico-chemical characterization and possible uses of sludge processed from an urban sewage treatment plant". *Heliyon*, vol. 10(8), e29576, 2024.
3. T. Rus, R. P. Moldovan, M. Á. Pardo Picazo, "LCA analysis of a roof mounted PV system: A Romanian case study". *Frontiers in Environmental Science*, vol. 12, 1413629, 2024.
4. M. Vălean, D. L. Manea, C. Aciu, F. Popa, L.M. Pleșa, E. Jumate, G. Furtos, "Performance Assessments of Plastering Mortars with Partial Replacement of Aggregates with Glass Waste". *Buildings*, vol. 14, 507, 2024.
5. C. M. Mârza, R. Moldovan, G. Corsiuc, G. Chisăliță, "Improving the Energy Performance of a Household Using Solar Energy: A Case Study". *Energies*, vol. 16(18), 6423, 2023.
6. D. A. Iluțiu – Varvara, C. Aciu, "Metallurgical Wastes as Resources for Sustainability of the Steel Industry". *Sustainability*, vol. 14(9), 5488, 2022.
7. D. A. Iluțiu – Varvara, M. Tintelecan, C. Aciu, C. M. Mârza, I. M. Sas-Boca, "An Assessment of the Metallic Iron Content from Steel Mill Scale - Essential Factor for Sustainability and Circular Economy". *Springer's Lecture Notes in Networks and Systems book series*, vol. 386, 2022, pp. 64-70.
8. D. A. Iluțiu – Varvara, M. Tintelecan, C. Aciu, I. M. Sas-Boca, "The Assessment of the Leaching Behavior of Metallurgical Wastes for a Sustainable Circular Economy". *Springer's Lecture Notes in Networks and Systems book series*, vol. 605, 2022, pp. 282-290.
9. M. Tintelecan, D. A. Iluțiu – Varvara, O. R. Alabanda, I. M. Sas - Boca, G. A. Santana Martinez, "Zn-Al Anticorrosive Coating, Adapted to Obtain Protected Steel Wires". *Springer's Lecture Notes in Networks and Systems book series*, vol. 386, 2022, pp. 3-12.
10. M. Tintelecan, D. A. Iluțiu – Varvara*, I. M. Sas - Boca, C. Aciu, "The Behavior of a Zn-Al Anticorrosive Coating in the Wiredrawing Process". *Materials*, vol. 15(18), 6190, 2022.
11. I. M. Sas - Boca, D. A. Iluțiu - Varvara*, M. Tintelecan, C. Aciu, D. I. Frunză, F. Popa, "Studies on Hot-Rolling Bonding of the Al-Cu Bimetallic Composite". *Materials*, vol. 15(24), 8807, 2022.
12. M. D. Roman, C. Sava, D. A. Iluțiu – Varvara*, R. Mare, L. L. Pruteanu, E. M. Pică, L. Jäntschi, "Biological Activated Sludge from Wastewater Treatment Plant before and during the COVID-19 Pandemic". *International Journal of Environmental Research and Public Health*, vol. 19(18), 11323, 2022.
13. C. Aciu, D. L. Manea, D. A. Iluțiu – Varvara*, "Study Regarding the Micro Filler Effect of Sludge Resulting from Steel Pickling". *Metals*, vol. 11(2), 2021, pp. 361-372.

Significant solutions:

- New technologies for industrial wastes minimization;
- New technologies for hazardous wastes minimization;
- New methods for environmental factors pollution control;
- New technologies for improvement the environment quality;
- New methods for improvement the quality of industrial microclimate.

Products and technologies:

- New materials for building services; Technologies with low environmental impact.

The offer addressed to the economic environment

Research & development	<ul style="list-style-type: none"> Research and development for industry by using applied research. Research and development of new methods and technologies with low environmental impact. Recovery of industrial waste / Recycling of industrial waste. Research and development of new methods and technologies for hazardous waste treatment. Research and development of new materials for building services. Research and development of advanced materials for building services.
Consulting	<ul style="list-style-type: none"> Consultancy for the industrial or academic environment, according to the skills of the research group members, in the following domains: Environmental Engineering; Indoor air quality (IAQ); Outdoor air quality (OAQ); Prediction of the environmental quality factors; Advanced materials; Waste management; Materials with Special Properties; Materials for Building Services.
Training	<ul style="list-style-type: none"> Training courses according to the skills of the research group members. Training courses in environmental factors pollution control. Training courses in environmental quality analysis. Training courses in industrial waste and hazardous waste. Training course in prediction methods for environmental quality factors. Training courses in waste management. Training courses in materials for building services. Training courses in indoor air quality (IAQ). Training courses in outdoor air quality (OAQ). Training courses in quality of industrial microclimate.

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