

RESEARCH CENTRE FOR ENVIRONMENTAL ENGINEERING

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Areas of expertise

clean technologies, waste recovery, recycling materials, ecological reconstruction, sustainable development, new materials, sustainable energy, structural modelling, risk assessment, impact studies, monitoring systems

Team

Prof. Dr. Eng. Ovidiu Nemes, Prof. Dr. Eng. Tiberiu Rusu, Prof. Dr. Eng. Valer Micle, Assoc. Prof. Dr. Eng. Emil Riți-Mihoc, Assist. Prof. Dr. Eng. Marius Crișan, Assist. Prof. Dr. Eng. Dan Porcar, Assist. Prof. Dr. Eng. Ioana Deneș-Pop, Assist. Prof. Dr. Eng. Cristina Horju-Deac, Assist. Prof. Dr. Eng. Simona Avram, Assist. Prof. Dr. Eng. Timea Gabor, Assist. Prof. Dr. Eng. Bianca Soporan, Assist. Prof. Dr. Eng. Andrei Rusu, Assist. Prof. Dr. Eng. Ancuța Tiuc

Representative projects

“**Tehnologie inovativă de bioremediere ex-situ a solurilor poluate cu hidrocarburi**, PN-II-PT-PCCA-2013-4-1717, 2014-2017
 “**Stabilirea corelației între conductivitatea băii și cantitatea de fosfați acumulată la lubrifiere**”, C.I.1.1.T.2, 2016.
 “**Design of an Equipment to recycle used PET bottles**”, Industry Research Project, (2014)
 “**Network of Excellence HighTech Europe**”, (2009-2013)
 “**Biomedical application of metal compounds – Metallomics**”, PCCE, (2010-2013)
 “**Center for Molecular Modeling and Quantic Computational Chemistry**”, Capacities Project, (2007-2009)
 “**Innovative technology for contaminated soils remediation by metallurgical specific activities**”, PNCDI II, (2008-2011)
 “**Regeneration system for recycling organic waste chemically bonded moulding sand in the foundry industry**”, CEEX, (2006-2008)
 “**Technologies for metals and plastics recovery from waste and telecommunications equipment**”, CEEX, (2005-2007)
 “**Advanced optimization methods of bonded joints in metal, composite and mixed materials**”, PNII-ID, (2007-2010)

Significant results

The most representative publications of the past 5 years:

1. Ancuța Elena Tiuc, Ovidiu Nemeș, Horatiu Vermesan, Adina Cristina Toma, New sound absorbent composite materials based on sawdust and polyurethane foam, Composites Part B: Engineering, Volume 165, 15 May 2019, Pages 120-130.
2. Ancuța Elena Tiuc, Ovidiu Nemeș, Horatiu Vermesan, Roxana Tamas-Gavrea, Ovidiu Vasile, New sound absorbing materials obtained from waste rigid polyurethane foam, Materiale Plastice, vol.56, No.4, 2019.
3. Olteanu, M., Septelean, R., Nemes, O., Deak, G., Baraitaru, A. Functionalization of mesoporous silica materials using Calix[4]arenes, Materiale Plastice, 56(3), pp. 554-558, 2019

4. Bere, Paul; Dudescu, Mircea; Neamtu, Calin; Nemes Ovidiu et al., Fabrication and Mechanical Characterization of Short Fiber-Glass Epoxy Composites MATERIALS PERFORMANCE AND CHARACTERIZATION Volume: 8 Issue: 1, Pages: 163-174 Published: 2019
5. Plugaru, Sebastian Cristian Radu; Dan, Viorel; Mentiu, Xenia Paula, USE OF GREEN ALGAE TO REDUCE HEAVY METALS FROM INDUSTRIALLY POLLUTED WATERS SCIENTIFIC PAPERS-SERIES E-LAND RECLAMATION EARTH OBSERVATION & SURVEYING ENVIRONMENTAL ENGINEERING Volume: 7 Pages: 136-139 Published: 2018
6. Lakatos, Elena Simina; Cioca, Lucian-Ionel; Dan, Viorel; et al., Studies and Investigation about the Attitude towards Sustainable Production, Consumption and Waste Generation in Line with Circular Economy in Romania SUSTAINABILITY Volume: 10 Issue: 3 Article Number: UNSP 865 Published: MAR 2018
7. Tiuc, Ancuta Elena; Vasile, Ovidiu; Vermesan, Horatiu; et al., New Multilayered Composite for Sound Absorbing Applications ROMANIAN JOURNAL OF ACOUSTICS AND VIBRATION Volume: 15 Issue: 2 Pages: 115-121 Published: 2018
8. Gabor, Timea; Dan, Viorel; Badila, Iulian-Nicolae; et al., IMPROVING THE ENERGY EFFICIENCY OF RESIDENTIAL BUILDINGS BY USING A DRAIN WATER HEAT RECOVERY SYSTEM ENVIRONMENTAL ENGINEERING AND MANAGEMENT JOURNAL Volume: 16 Issue: 7 Pages: 1631-1636 Published: JUL 2017
9. G. E. Popita, C. Rosu, D. Manciola, O. Corbu, A. Popovici, O. Nemes, et al., "Industrial Tanned Leather Waste Embedded in Modern Composite Materials", *Materiale Plastice*, vol. 53, pp. 308-311, Jun 2016.
10. A. E. Tiuc, V. Dan, H. Vermesan, T. Gabor, and M. Proorocu, "Recovery of Sawdust and Recycled Rubber Granules as Sound Absorbing Materials", *Environmental Engineering and Management Journal*, vol. 15, pp. 1093-1101, May 2016.
11. T. Gabor, V. Dan, A. E. Tiuc, I. M. Sur, and I. N. Badila, "Modelling And Simulation of Heat Transfer Processes for Heat Exchangers Used in Wastewater Treatment", *Environmental Engineering and Management Journal*, vol. 15, pp. 1027-1033, May 2016.
12. G. C. Rogozan, V. Micle, and I. M. Sur, "Maps of Heavy Metals in Cluj County Soils Developed using the Regression-Kriging Method", *Environmental Engineering and Management Journal*, vol. 15, pp. 1035-1039, May 2016.
13. I. Smical, A. Muntean, and V. Micle, "Influence of Some Natural Organic Additives on the Quality of Vegetal Compost", *Environmental Engineering and Management Journal*, vol. 15, pp. 1041-1048, May 2016.
14. Tiuc A.E., Vermeşan H., Gabor T., Vasile O., "Improved sound absorption properties of polyurethane foam mixed with textile waste", *Energy Procedia*, Volume 85, January 2016, Pages 559–565, EENVIRO-YRC 2015 - Bucharest doi:10.1016/j.egypro.2015.12.245
15. A.E. Tiuc, O. Nemeş, I. Perhaiţa, H. Vermeşan, T. Gabor, V. Dan, "Thermal behaviour of polyurethane matrix composite materials", *Studia Universitatis Babes-Bolyai Chimia* Issue 2, pp. 169-176, 2015
16. M.B. Soporan, O. Nemeş, "Quantitative analysis of the noncompliant landfill constituents", *Studia Universitatis Babes-Bolyai Chimia* Issue 2, pp. 201-206, 2015
17. S.-A. Radu, V.D. Leordean, N. Bâlc, O. Nemeş, "Resin type influence on moulded parts final dimensions", *Studia Universitatis Babes-Bolyai Chimia* Issue 2, pp. 219-228, 2015
18. J.D. Chelaru, L.M. Muresan, V.F. Soporan, O. Nemes, L. Barbu-Tudoran, "Investigation of a naturally patinated bronze artifact originating from the outdoor statuary group of Mathias Rex", *Journal of Cultural Heritage* Volume: 15, Issue: 5, 2014, pp: 546-549

Significant solutions:

New technologies for waste recycling; New technologies for soil remediation; New and improved solution for water treatment

Products and technologies:

1. New materials from multi-layer packages, wood saw dust and vegetal wastes
2. New technologies for soil remediation
3. New technologies for water treatment

Patents:

1. PROCESS AND DEVICE FOR MAKING PLATES OF POLYMERIC COMPOSITE MATERIALS REINFORCED WITH FIBERS, Patent Number(s): RO128093-A0 ; RO128093-B1 ; RO128093-A8, **INVENTOR(S):** BERE P, BERCE P, NEMES O, BALC N, BERE P P, 2015.

2. SOUNDPROOFING COMPOSITE MATERIAL COMPRISES FIR SAWDUST GRAINS AND POLYURETHANE FOAM, Patent Number(s): RO129228-A0 ; RO129228-B1 ; RO129228-A8, 2015, Authors: Ancuța Tiuc, Tiberiu Rusu, Ovidiu Nemeş

The offer addressed to the economic environment

Research & development	Research in development of new methods and technologies of soil remediation Research and development of new methods and technologies of water treatment Research in environmental risk assessments Research in waste recycling and new materials manufacturing
Consulting	Consulting in soil remediation Consulting in water treatment technologies Consulting in waste management and recycling technologies Consulting in risk assessments
Training	Training courses in waste management; Training courses in recycling technologies Training courses in soil remediation technologies; Training courses in water treatment