
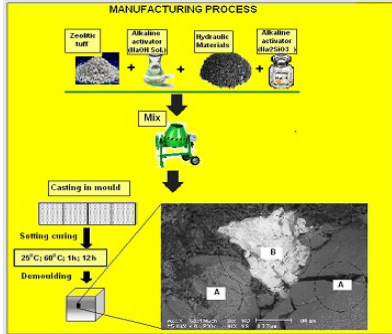
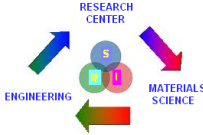


# MATERIALS SCIENCE AND ENGINEERING RESEARCH CENTER

## Contact details

Name	<b>Materials Science and Engineering Research Center</b>	 
Acronym	<b>MSERC</b>	
Logo		
Site	<a href="http://research.utcluj.ro/index.php/domenii-de-cercetare.html">http://research.utcluj.ro/index.php/domenii-de-cercetare.html</a>	
Address	62A. Victor Babes Str., 430083, Baia Mare, Romania	
Faculty Department	<b>Engineering Mineral Resources, Materials and Environmental Engineering</b>	
Telephone	+40 362407266	
Fax	+40 262 276153	
Director	Prof. Dr. Eng. Vasile Hotea	
e-mail	<a href="mailto:vasilehotea50@yahoo.com">vasilehotea50@yahoo.com</a>	

## Areas of expertise

### Nonferrous Alloys ,

-Casting of nonferrous alloys, metallic powders, Characterization mixtures, heat treatment

### Heat and Cold Deformation

Attempts heat and cold deformation by traction and compression for aluminum alloys, extrusion, forging

### Surface Engineering

Thin film layers, electroplating, anodizing, corrosion and anticorrosive protection

### Analysis Techniques

Determination of physical, chemical and mechanical properties of materials, metallographic analysis of materials (optical microscopy), X-Ray diffraction, SEM

### Environmental protection

Environmental protection of industry, Risk assessment

## Team

**Prof. Dr. Eng. Vasile Hotea**, Assoc. Prof. Dr. Eng. Elena Pop, Lecturer. Dr. Eng. Gheorghe Iepure, Lecturer Dr. Eng. Jozsef Juhasz, Lecturer Dr. Eng. Aurica Pop, Lecturer. Dr. Eng. Brezoczki Valeria, Sing. Loredana Hutira

## Representative projects

**“Energy Recovery from Municipal Solid Waste by Thermal Conversion Technologies in Cross-border Region”**, Project Manager: Juhasz Jozsef; Brezoczki Valeria, Parteneri: Technical University of Kosice (Slovak Republic), University of Miskolc (Hungary), **Technical University of Cluj-Napoca, North University Center of Baia Mare** (2019-2020), (Romania) <https://huskroua-cbc.eu/about/programme-description>

**“Preventing and removing environmental impacts using geosynthetic materials”**, Grant CNCISIS, (2007-2009)

Romanian Authority for Scientific Research (Joint Applied Research Project), [http://frmm.ubm.ro/index\\_rom.htm](http://frmm.ubm.ro/index_rom.htm)

**LEXIN**, **“Applied research on green heating technology and biogenetic type LEXIN”**, LEXIN Group (AGDE RUITER BEHEER BV, LEXIN HOLDING BV, LEXIN International B.V.), LEXIN Produktion GMBH, [http://frmm.ubm.ro/index\\_rom.htm](http://frmm.ubm.ro/index_rom.htm) (2008-2009)

## Significant results

### The most representative publications of the past 5 years:

1. **V. Hotea, J. Jozsef**, Analysis of the extrusion process parameters of high-strength aluminum alloys used in the aerospace industry, International Conference of the Carpathian Euro-Region Specialists in Industrial Systems, CEurSIS 2019, IOP Conference Series: Materials Science and Engineering, Paper ID006\_CEURISIS-in press

2. Damian, Gheorghe; Andras, Peter; Damian, Floarea; **Iepure G** et al., The role of organo-zeolitic material in supporting phytoremediation of a copper mining waste dump INTERNATIONAL JOURNAL OF PHYTOREMEDIATION Volume: 20 Issue: 13 Pages: 1307-1316 Published: NOV 10 2018
3. Damian, Gheorghe; Lanzerstorfer, Christof; Damian, Floarea; **Iepure G** et al., Distribution of Heavy Metals and Minerals in the Various Size Fractions of Soil from CopE (TM) a Mic, RomAnia WATER AIR AND SOIL POLLUTION Volume: 229 Issue: 6 Article Number: 202 Published: JUN 2018
4. **Hotea, V.; Juhasz, J.**; Cadar, F. , Grain refinement of 7075Al alloy microstructures by inoculation with Al-Ti-B master alloy INNOVATIVE IDEAS IN SCIENCE 2016, Book Series: IOP Conference Series-Materials Science and Engineering, Volume: 200, Article Number: UNSP 012029 Published: 2017
5. **Pop, A.; Iepure, G.**, Research and development regarding the retaining mechanism of lead ions in industrial wastewaters using natural matter with remarkable properties Conference on Innovative Ideas in Science Location: Baia Mare, ROMANIA Date: NOV 10-11, 2016 Book Series: IOP Conference Series-Materials Science and Engineering Volume: 200 Article Number: UNSP 012068 Published: 2017
6. M. M. Chicos, Gh. Damian, D. Stumbea, N. Buzgar, T. Ungureanu, V. Nica, **Gh. Iepure**, „Mineralogy and geochemistry of the tailings pond from straja valley (Suceava county, Romania). factors affecting the mobility of the elements on the surface of the waste deposit”, *Carpathian Journal of Earth and Environmental Sciences*, Vol.1, No.1, 2016, pp. 265-280
7. Chicos, Marian Marius; Damian, Gheorghe; Stumbea, Dan; **Iepure Gh** et al., Mineralogy and geochemistry of the tailings pond from Straja Valley (Suceava County, Romania). factors affecting the mobility of the elements on the surface of the waste deposit carpathian journal of earth and environmental sciences Volume: 11 Issue: 1 Pages: 265-280 Published: FEB 2016
8. **V. Hotea**, „Clean Technology of Lead Recovery from Spent Lead Paste”, in *Recent Researches in Applied Economics and Management, Economic Aspects of Environment*, vol. 2, august 27-29, 2013, pp. 263-270
9. **J. Juhasz**, „Modern Systems for Processing of Brasses and Bronzes with Gas Filtration”, in *Recent Researches in Applied Economics and Management, Economic Aspects of Environment*, vol. 2, august 27-29, 2013, pp. 259-263
10. **Pop, A. I.** Vida-Simiti, G. Damian, **G. Iepure**, “Removal of Heavy Metals from Wastewaters by Using Zeolitic Tuff”, in *Carpathian Journal of Earth and Environmental Sciences*, vol. 7, no. 1, 2012, pp.239-248

#### Patents

**V. Hotea**, G. Badescu, **J. Juhasz**, Procedeu de reținere prin absorbție chimică a dioxidului de carbon din gazele reziduale, Patent No. RO 127080/30.03.2016

**V. Hotea**, The plant for Capture of Sulfur Dioxide and Carbon Dioxide in the Flue Gases, Patent No. RO 125756 B1 29.11.2012

**J. Jozsef**, Process of obtaining from the concentrates of cupric oxide pellets, Patent No. RO125453B1, 2010

**V. Hotea**, Installation of a Continuously Supply of Cold Materials Processed Through Melting, Patent No. RO 122230/27.02.2009

#### The offer addressed to the economic environment

Research & development	Initiative in attracting funds pre-competitive research projects in public-private partnership initiated, especially those that involve collaboration with our university. The objective of these projects is to create new products and technologies with potential commercial exploitation. Focus of research efforts of our team to clearly identified problems to businesses through involvement in research and development projects representatives demand, especially that coming from regional multinational companies (Universal Alloy Corporation-USA) in the field of Materials Engineering, and national public authorities.
Consulting	Attracting customers (public and private agencies) with little experience in Materials Engineering to acquisition technologies underlying our research excellence for the the correct choice of materials, electrochemical coating technologies, fault analysis, development ferrous alloys, environmental protection industry.
Applied engineering services	Analysis and characterization of metallic materials, metallographic analysis, mechanical characterization, thermal shock, mechanical and corrosive behavior.
Training	Applications on courses, informal training type, indirect training, community integration, knowledge management in the field of Engineering Materials practical activities training.