THE POROUS MATERIALS AND COMPOSITES RESEARCH GROUP

Contact details

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Areas of expertise

**Field: Materials Science and Engineering**  
**Expertise in Powder Metallurgy**  
- Sintered porous materials, cellular materials (metallic foams)  
- Material metal and ceramic matrix composites produced by powder metallurgy.

Team

**Assist. Prof. Dr. Eng. Gyorgy Thalmaier**, Prof. Dr. Eng. Ioan Vida-Simiti, Assist. Prof. Dr. Eng. Niculina Sechel

Representative projects

- **MATAVSUD**: "Innovative Research on development of new materials for welding and other production processes"  
  - CEEX Contract no. 8/2005-2008
- **BRONZINV**: "Fundamental and applied research on 12-15% tin bronzes for obtaining anti-friction layers"  
  - CEEX Contract No. 11/2005-2008
- "Manufacturing Aluminium - Graphite composites by casting and sintering", Contract CEEX Nr.2/2005-2008
- **NANOGRAD**: "Advanced research on the development of nanostructured graded composite materials for excessive wear applications"  
  - Contract CEEX Nr.91/2006: -2008
- **ELSUD**: "Multi-layered electrodes for electrical resistance spot and line welding"  
  - Program 4 Partnerships in priority areas, PNCDI 2 - 2007-2009
- **ELMOD**: “Innovative technologies for the development of modular manufacture of forming tools”, Program 4 Partnerships in priority areas, PNCDI 2, 2007-2009
- **Exploratory research projects. Studies and research on obtaining structurally graded materials by controlled sedimentation of metallic and ceramic powders**  
  - Program Ideas ID_214, no. 749 / 19.01.2009
- **Development and support of multidisciplinary postdoctoral programs in priority technical areas of the national strategy for research - development - innovation 4D-postdoc**  
  - Postdoctoral research fellowship funded by the Managing Authority for Sectorial Operational Programme Human Resources Development under the project Contract Code: POSDRU/89/1.5/S/52603
Significant results

The most representative publications of the past 5 years:

2. Thalmaier, Gyorgy; Sechel, Niculina Argentina; Vida-Simiti, Ioan, Heat Transfer Enhancement of Paraffin Phase Change Composite Material Using Recycled Aluminum Sawing Chips JOM Volume: 71 Issue: 3 Pages: 1049-1055 Published: MAR 2019
3. Cobirzan, Nicoleta; Thalmaier, Gyorgy; Balog, Anca-Andreea; et al., Thermophysical properties of fired clay bricks with waste ceramics and paper pulp as pore-forming agent JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY Volume: 134 Issue: 1 Pages: 843-851 Published: OCT 2018
4. Thalmaier, Gyorgy; Vida-Simiti, Ioan; Sechel, Niculina Argentina, Influence of the palladium coating on the hydrogen embrittlement of Ni61Nb33Zr6 amorphous tapes obtained by melt spinning POWDER METALLURGY AND ADVANCED MATERIALS Book Series: Materials Research Proceedings Volume: 8 Pages: 89-94 Published: 2018
7. Gherasim, Gabriel; Thalmaier, Gyorgy; Sechel, Niculina; et al., RESEARCHES ON OBTAINING SINTERED Al80Fe10Ti10 FOAMS ACTA TECHNICA NAPOCENSIS SERIES-APPLIED MATHEMATICS MECHANICS AND ENGINEERING Volume: 58 Issue: 4 Pages: 585-590 Published: NOV 2015
8. S. Şuta, G. Gherasim, G. Thalmaier, N. Sechel, I.Vida – Simiti, "Ti-Al membranes for microfiltration", Conferinta international, Advanced Materials and Structures 16-17 October 2015, Timișoara, Romania

Patents:

The offer addressed to the economic environment

| Research & development | Fundamental research on the process of sedimentation metallic and ceramic powders for achieving gradual sintered porous structures
Obtaining sintered porous media with porosity gradient for manufacturing filters for microfiltration;
Preparation and characterization of metal matrix composites and ceramics for various applications. |
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<td>Consulting</td>
<td>Dimensioning filtering elements</td>
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<td>Training</td>
<td>Powder metallurgy</td>
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