

MEMORIU ȘTIINȚIFIC
Drd.ing. Mircea Gabriel Macavei

Studii de doctorat

Perioada: 2020 - 2025

Conducător științific: Prof.dr.ing. Cosmin Mărculescu

Domeniu: Inginerie Energetică

Titlul tezei de doctorat: STUDIU PENTRU OPTIMIZAREA PROCESULUI DE PIROLIZĂ ÎN SCOPUL VALORIFICĂRII ENERGETICE A DEȘEURILOR POLIMERICE

Activitate științifică**A. Lista de lucrări științifice (articole în reviste sau volume)**

1. **Macavei, M. G.**, Gheorghe, V. C., Ionescu, G., Volceanov, A., Pătrașcu, R., Mărculescu, C., & Magdziarz, A. (2024). Thermochemical Conversion of Animal-Derived Waste: A Mini-Review with a Focus on Chicken Bone Waste. *Processes* 2024, Vol. 12, Page 358, 12(2), 358. <https://doi.org/10.3390/PR12020358>
2. Ionescu, G., **Macavei, M.**, Pătrașcu, M., Volceanov, A., Pătrașcu, R., Werle, S., Mlonka-Mędrala, A., Elena Coman, A., Magdziarz, A., & Mărculescu, C. (2025). New integrated processing of chicken bone waste using an enzymatic pretreatment and slow pyrolysis to produce green chemicals. *Energy Conversion and Management*, 323, 119281. <https://doi.org/10.1016/J.ENCONMAN.2024.119281>
3. Sandu, M. R., Boldor, D., **Macavei, M. G.**, Magdziarz, A., & Mărculescu, C. (2025). Heat and flow dynamics in biomass reactors under pyrolysis conditions: Computational insights. *Renewable Energy*, 244. <https://doi.org/10.1016/j.renene.2025.122691>
4. **Macavei, M. G.**, Pătrașcu, M., Ionescu, G. et al. Bio-based material as microwave susceptor and catalyst support for plastic waste microwave-assisted pyrolysis. *Clean Techn Environ Policy* (2025). <https://doi.org/10.1007/s10098-025-03275-w>
5. Macavei, M. G., Ionescu, G., & Mărculescu, C. (2025). Kinetic investigation of low-density polyethylene pyrolysis: effects of heating rate. *U.P.B. Sci. Bull., Series C*, 87(3), 509–522. <https://doi.org/10.5281/zenodo.17100244>

B. Participări la conferințe/workshop-uri

1. Effect of pyrolysis conditions on the yield distribution and properties derived from chicken bones waste; 19th SDEWES conference, Gabriela Ionescu, Mariana Pătrașcu, **Mircea Gabriel Macavei**, Adrian Volceanov, Roxana Pătrașcu, Cosmin Mărculescu, Aneta Magdziarz; 2024.
2. Microwave-assisted treatment of chicken bone waste and biochar; 19th SDEWES conference, Mariana Pătrașcu, Gabriela Ionescu, **Mircea Gabriel Macavei**, Adrian Volceanov, Aneta Magdziarz, Cosmin Mărculescu, 2024.
3. Influence of fast pyrolysis operating conditions over the reaction products resulted from organic residues; FOREN 2024, **Mircea Gabriel Macavei**, Gabriela Ionescu, Aneta Magdziarz, Cosmin Mărculescu, 2024.
4. Enhancing Value from Poultry Bone Waste: Chemical and Thermal Treatment Approaches for High-Quality Product Development; ECOS 2024, Aneta Magdziarz, Agata Mlonka-Mędrala, Sebastian Werle, Szymon Sobek, **Mircea Gabriel Macavei**, Mariana Pătrașcu, Gabriela Ionescu, Cosmin Mărculescu, 2024.

C. Proiecte de cercetare științifică

1. „Green chemistry and thermochemical processing, a convergent approach towards biobased chemicals and hydrogen synthesis –**CONVERGREEN**” NO. CF 86/15.11.2022, COD 86 (06/2023-prezent).
2. Tehnologii curate de procesare și/sau valorificare materiale cu potențial combustibil –**CLEANTECH**”, ID 105958. (08/2023 – 10/2023)

D. Stagii de perfecționare

1. **Mobilitate ERASMUS+** timp de 4 luni, Silesian University of Technology, Gliwice, Polonia
2. **Școala de iarnă** „Smart Public Space in Prosumant Energy Transition”, Silesian University of Technology, Gliwice, Polonia

Student-doctorand

ing. Mircea Gabriel Macavei

