

Laboratorul 3: Laboratorul de Cinetica Chimica
Chemical Kinetics Department

2022

Lucrari publicate in reviste clasificate ISI/Papers in ISI ranked journals

Chelu, M.; Calderon Moreno, J.; Atkinson, I.; Pandele Cusu, J.; Rusu, A.; **Bratan, V.**; Aricov, L.; Anastasescu, M.; Seciu-Grama, A.-M.; **Musuc, A. M.*** Green synthesis of bioinspired chitosan-ZnO-based polysaccharide gums hydrogels with propolis extract as novel functional natural biomaterials, International Journal of Biological Macromolecules, 2022, 211, 410-424. <https://doi.org/10.1016/j.ijbiomac.2022.05.070>. (FI= 8.2).

Vasile, A.*; Papa, F.; **Bratan, V.**; **Munteanu, C.**; Teodorescu, M.; Atkinson, I.; Anastasescu, M.; Kawamoto, D.; Negrila, C.; Ene, C. D.; Spataru, T.; Balint, I. Water denitration over titania-supported Pt and Cu by combined photocatalytic and catalytic processes: Implications for hydrogen generation properties in a photocatalytic system, J. Environ. Chem. Eng., 2022, 10(2),107129. <https://doi.org/10.1016/j.jece.2022.107129>. (FI= 7.7).

Popovici, V. †; Matei, E. *; Cozaru, G.C. †; Bucur, L. †; Gîrd, C.E. †; Schröder, V. *; Ozon, E.A. *; **Musuc, A.M.** *; Mitu, M.A. *; Atkinson, I.; Rusu, A.; Petrescu, S.; Mitran, R.-A.; Anastasescu, M.; Caraiane, A.; Lupuliasa, D. ‡; Aschie, M. ‡; Badea, V. ‡ In Vitro Anticancer Activity of Mucoadhesive Oral Films Loaded with Usnea barbata (L.) F. H. Wigg Dry Acetone Extract, with Potential Applications in Oral Squamous Cell Carcinoma Complementary Therapy. Antioxidants 2022, 11, 1934. <https://doi.org/10.3390/antiox11101934>. (FI = 7).

Popovici, V. †; Matei, E. *; Cozaru, G.C. †; Bucur, L. †; Gîrd, C.E. †; Schröder, V. *; Ozon, E.A. *; Karampelas, O. *; **Musuc, A.M.** *; Atkinson, I.; Rusu, A.; Petrescu, S.; Mitran, R.-A.; Anastasescu, M.; Caraiane, A.; Lupuliasa, D. ‡; Aschie, M. ‡; Badea, V. ‡ Evaluation of Usnea barbata (L.) Weber ex F.H. Wigg Extract in Canola Oil Loaded in Bioadhesive Oral Films for Potential Applications in Oral Cavity Infections and Malignancy. Antioxidants 2022, 11, 1601. <https://doi.org/10.3390/antiox11081601>. (FI = 7).

Popovici, V. †; Matei, E. *; Cozaru, G.C. †; Bucur, L. †; Gîrd, C.E. †; Schröder, V. *; Ozon, E.A. *; Mitu, M.A. *; **Musuc, A.M.** *; Petrescu, S. *; Atkinson, I.; Rusu, A.; Mitran, R.-A.; Anastasescu, M.; Caraiane, A.; Lupuliasa, D. ‡; Aschie, M. ‡; Dumitru, E. ‡; Badea, V. ‡. Design, Characterization, and Anticancer and Antimicrobial Activities of Mucoadhesive Oral Patches Loaded with Usnea barbata (L.) F. H. Wigg Ethanol Extract F-UBE-HPMC. Antioxidants 2022, 11, 1801. <https://doi.org/10.3390/antiox11091801>. (FI = 7).

Movileanu, C.; Anghelache, M.; Turtoi, M.; Voicu, G.; Neacsu, I.A.; Ficai, D.; Trusca, R.; Oprea, O.; Ficai, A.; Andronescu*, E.; Calin, M. Folic acid-decorated PEGylated magnetite nanoparticles as efficient drug carriers to tumor cells overexpressing folic acid receptor, International Journal of Pharmaceutics, 625, 2022, 122064. (FI = 5.8).

Popovici, V. †; **Musuc, A.M.** †; Matei, E. *; Karampelas, O.; Ozon, E.A. *; Cozaru, G.C.; Schröder, V.; Bucur, L.; Aricov, L.; Anastasescu, M.; Aschie, M.; Badea, V.; Lupuliasa, D.; Gîrd, C. E. ROS-Induced DNA-Damage

and Autophagy in Oral Squamous Cell Carcinoma by Usnea barbata Oil Extract—An In Vitro Study. *Int. J. Mol. Sci.* 2022, 23, 14836. <https://doi.org/10.3390/ijms232314836> (FI = 5.6).

Popovici, V. †; Matei, E. *; Cozaru, G.-C. †; Bucur, L. †; Gîrd, C.E. †; Schröder, V. *; Ozon, E.A. *; Sarbu, I. *; **Musuc, A.M.** *; Atkinson, I.; Rusu, A.; Petrescu, S.; Mitran, R.-A.; Anastasescu, M.; Caraiane, A.; Lupuliasa, D. ‡; Aschie, M. ‡; Badea, V. ‡ Formulation and Development of Bioadhesive Oral Films Containing Usnea barbata (L.) F.H.Wigg Dry Ethanol Extract (F-UBE-HPC) with Antimicrobial and Anticancer Properties for Potential Use in Oral Cancer Complementary Therapy. *Pharmaceutics* 2022, 14, 1808. <https://doi.org/10.3390/pharmaceutics14091808>. (FI = 5.4).

Mititelu, M. †; Moroșan, E. †; Nicoară, A.C. †; Secăreanu, A.A. †; **Musuc, A.M.** *; Atkinson, I.; Pandele Cusu, J.; Nițulescu, G.M. *; Ozon, E.A. *; Sarbu, I. *; Balaci, T.D. Development of Immediate Release Tablets Containing Calcium Lactate Synthesized from Black Sea Mussel Shells. *Mar. Drugs* 2022, 20, 45. <https://doi.org/10.3390/md20010045>. (FI = 5.4).

Gartner, M.; Anastasescu, M.; Calderon-Moreno, J.M.; Nicolescu, M. *; Stroescu, H. *; **Hornoiu, C.**; Preda, S.; Predoana, L.; Mitrea, D.; Covei, M.; Maraloiu, V.-A.; Teodorescu, V.S.; Moldovan, C.; Petrik, P.; Zaharescu, M. Multifunctional Zn-Doped ITO Sol–Gel Films Deposited on Different Substrates: Application as CO₂-Sensing Material. *Nanomaterials* 2022, 12(18), 3244. doi:10.3390/nano12183244. (FI = 5.3).

Chifor, E.; Bordeianu, I.; Anastasescu, C. *; Calderon-Moreno, J.M.; **Bratan, V.**; Eftemie, D.-I.; Anastasescu, M. *; Preda, S. *; Plavan, G.; Pelinescu, D.; Ionescu, R.; Stoica, I.; Zaharescu, M.; Balin, I. Bioactive Coatings Based on Nanostructured TiO₂ Modified with Noble Metal Nanoparticles and Lysozyme for Ti Dental Implants. *Nanomaterials* 2022, 12, 3186. <https://doi.org/10.3390/nano12183186> (FI = 5.3).

Moroșan, E. †; Secareanu, A.A. †; **Musuc, A.M.** *; Mititelu, M. *; Ioniță, A.C. †; Ozon, E.A. *; Raducan, I.D.; Rusu, A.I.; Dărăban, A.M.; Karampelas, O. Comparative Quality Assessment of Five Bread Wheat and Five Barley Cultivars Grown in Romania. *Int. J. Environ. Res. Public Health* 2022, 19, 11114. <https://doi.org/10.3390/ijerph191711114>. (FI = 4.614).

Chesler, P.; Hornoiu, C.*; Anastasescu, M.; Calderon-Moreno, J.M.; Gheorghe, M.; Gartner, M. Cobalt-and Copper-Based Chemiresistors for Low Concentration Methane Detection, a Comparison Study. *Gels* 2022, 8(11), 721. doi:10.3390/gels8110721. (FI = 4.6).

Ozon, E.A. †; Novac, M. †; Gheorghe, D. †; **Musuc, A.M.** *; Mitu, M.A. *; Sarbu, I. *; Anuta, V.; Rusu, A.; Petrescu, S.; Atkinson, I.; Lupuliasa, D. Formation and Physico-Chemical Evaluation of Nifedipine-hydroxypropyl-β-cyclodextrin and Nifedipine-methyl-β-cyclodextrin: The Development of Orosoluble Tablets. *Pharmaceutics* 2022, 15, 993. <https://doi.org/10.3390/ph15080993>. (FI = 4.6).

Novac, M. †; **Musuc, A.M.** †,*; Ozon, E.A. *; Sarbu, I. *; Mitu, M.A. *; Rusu, A.; Gheorghe, D.; Petrescu, S.; Atkinson, I.; Lupuliasa, D. Manufacturing and Assessing the New Orally Disintegrating Tablets, Containing Nimodipine-hydroxypropyl-β-cyclodextrin and Nimodipine-methyl-β-cyclodextrin Inclusion Complexes. *Molecules* 2022, 27, 2012. <https://doi.org/10.3390/molecules27062012>. (FI = 4.6).

Mocioiu, O.-C.; Vlăduț, C.M. *; Atkinson, I.; **Brătan, V.**; Mocioiu, A.-M. The Influence of Gel Preparation and Thermal Treatment on the Optical Properties of SiO₂-ZnO Powders Obtained by Sol–Gel Method. *Gels* 2022, 8, 498. <https://doi.org/10.3390/gels8080498>. (FI = 4.6).

Nicolescu, M.; Mitrea, D. *; **Hornoiu, C.**; Preda, S.; Stroescu, H. *; Anastasescu, M.; Calderon-Moreno, J.M.; Predoana, L.; Teodorescu, V.S.; Maraloiu, V.-A.; Zaharescu, M.; Gartner, M. * Structural, Optical, and Sensing Properties of Nb-Doped ITO Thin Films Deposited by the Sol–Gel Method. *Gels* 2022, 8(11), 717 doi:10.3390/gels8110717. (FI = 4.6).

Vlăduț, C.M. *; Mocioiu, O.-C. *; Preda, S.; Pandele-Cusu, J.; **Brătan, V.**; Trusca, R.; Zaharescu, M. Effect of Thermal Treatment on the Structure and Morphology of Vanadium Doped ZnO Nanostructures Obtained by Microwave Assisted Sol–Gel Method. *Gels* 2022, 8, 811. <https://doi.org/10.3390/gels8120811>. (FI = 4.6).

Fita, A.C. †; Secăreanu, A.A. †; **Musuc, A.M.** †,*; Ozon, E.A. *; Sarbu, I. *; Atkinson, I.; Rusu, A.; Mati, E. *; Anuta, V. *; Pop, A.L. The Influence of the Polymer Type on the Quality of Newly Developed Oral Immediate-Release Tablets Containing Amiodarone Solid Dispersions Obtained by Hot-Melt Extrusion. *Molecules* 2022, 27, 6600. <https://doi.org/10.3390/molecules27196600>. (FI = 4.6).

Musuc, A. M. *; Patrinoiu, G.; Budrugeac, P.; Cucos, A.; Dascalu, R.; Calderon-Moreno, J.; Carp O. Fructose-derived hydrochar: combustion thermochemistry and kinetics assessments, *J. Thermal Anal. Calorim.* 2022, 147, 12805-12814. DOI :10.1007/s10973-022-11474-6. 2022. (FI = 4.4).

Giurcan, V.; Mitu, M. *; Movileanu, C.; Razus, D. Propagation Characteristics of Stoichiometric Inert-Diluted Methane–N₂O Flames. *Industrial & Engineering Chemistry Research*, 2022, 61(46), 17065–17076. <https://doi.org/10.1021/acs.iecr.2c03106> (FI = 4.2).

Razus, D.* Nitrous Oxide: Oxidizer and Promoter of Hydrogen and Hydrocarbon Combustion. *Industrial & Engineering Chemistry Research*, 2022, 61(31), 11329-11346. <https://doi.org/10.1021/acs.iecr.2c01774>. (FI = 4.2).

Brătan, V.; Vasile, A. *; Chesler, P. *; Hornoiu, C. Insights into the Redox and Structural Properties of CoOx and MnOx: Fundamental Factors Affecting the Catalytic Performance in the Oxidation Process of VOCs. *Catalysts* 2022, 12(10), 1134. doi:10.3390/catal12101134. (FI = 3.9).

Raciulete, M.; Anastasescu, C.; Papa, F. *; Atkinson, I.; Bradu, C.; Negrila, C.; Eftemie, D.-I.; Culita, D.C.; Miyazaki, A.; **Brătan, V.**; Pandele-Cusu, J.; **Munteanu, C.**; Dobrescu, G.; Sandulescu, A.; Balint, I. * Band-Gap Engineering of Layered Perovskites by Cu Spacer Insertion as Photocatalysts for Depollution Reaction. *Catalysts* 2022, 12, 1529. <https://doi.org/10.3390/catal12121529> (FI = 3.9).

Papa, F.; **Vasile, A. ***; Dobrescu, G. * Effect of the Modification of Catalysts on the Catalytic Performance, *Catalysts*, 2022, 12(12), 1637. <https://doi.org/10.3390/catal12121637> (FI=3.9) (editorial).

Razus, D.; Giurcan, V.; Movileanu, C.; Mitu, M. * Nitric Oxide Generation in N₂-Diluted H₂–N₂O Flames: A Computational Study. *Processes*, 2022, 10(5), 1032. <https://doi.org/10.3390/pr10051032> (FI = 3.5).

Giurcan, V.; Razus, D.; Mitu, M.; Movileanu, C. * Dynamics of pressure variation in closed vessel explosions of diluted fuel/oxidant mixtures. *Processes*, 2022, 10(12), 2726. <https://doi.org/10.3390/pr10122726> (FI = 3.5).

Moroșan, E. †; Secăreanu, A.A. †; **Musuc, A.M.** †,*; Mititelu, M. *; Ioniță, A.C.; Ozon, E.A. *; Dărăban, A.M.; Karampelas, O. Advances on the Antioxidant Activity of a Phytocomplex Product Containing Berry Extracts from Romanian Spontaneous Flora. *Processes* 2022, 10, 646. <https://doi.org/10.3390/pr10040646>. (FI = 3.5).

Novac, M. †; **Musuc, A.M.** †, *; Ozon, E.A. *; Sarbu, I. *; Mitu, M.A. *; Rusu, A.; Petrescu, S.; Atkinson, I.; Gheorghe, D.; Lupuliasa, D. Design and Evaluation of Orally Dispersible Tablets Containing Amlodipine Inclusion Complexes in Hydroxypropyl- β -cyclodextrin and Methyl- β -cyclodextrin. *Materials* 2022, 15, 5217. <https://doi.org/10.3390/ma15155217>. (FI = 3.4).

Mitu, M.; Movileanu, C.; Giurcan, V. * The Laminar Burning Velocities of Stoichiometric Methane–Air Mixture from Closed Vessels Measurements. *Energies*, 2022, 15(14), 5058. <https://doi.org/10.3390/en15145058> (FI = 3.2).

Mitu, M.; Movileanu, C.; Giurcan, V. * Dynamics of Pressure Evolution during Gaseous Ethane–Air Mixture Explosions in Enclosures: A Review. *Energies*, 2022, 15(19), 6879. <https://doi.org/10.3390/en15196879>. (FI = 3.2).

Chelu, M.; Chesler, P. *; Anastasescu, M.; **Hornoiu, C.**; Mitrea, D.; Atkinson, I.; Brasoveanu, C.; Moldovan, C.; Craciun, G.; Gheorghe, M.; Gartner, M. ZnO/NiO Heterostructure-Based Microsensors Used in Formaldehyde Detection at Room Temperature: Influence of the Sensor Operating Voltage. *J. Mater. Sci. Mater. Electron.* 2022, 33(25), 19998–20011, doi:10.1007/s10854-022-08818-1. (FI = 2.8).

Ioniță-Mîndrican, C.-B. †; Mititelu, M. *; **Musuc, A.M.** *; Oprea, E. *; Ziani, K. †; Neacșu, S.M. †; Grigore, N.D. †; Negrei, C. †; Dumitrescu, D.-E. †; Mireșan, H. †; Roncea, F.N. †; Ozon, E.A. †; Măru, N. †; Drăgănescu, D. †; Ghica, M. Honey and Other Beekeeping Products Intake among the Romanian Population and Their Therapeutic Use. *Appl. Sci.* 2022, 12, 9649. <https://doi.org/10.3390/app12199649>. (FI = 2.7).

Pop, A.L. †; **Musuc, A.M.** †, *; Nicoară, A.C. †; Ozon, E.A. *; Crisan, S.; Penes, O.N.; Nasui, B.A.; Lupuliasa, D.; Secăreanu, A.A. Optimization of the Preformulation and Formulation Parameters in the Development of New Extended-Release Tablets Containing Felodipine. *Appl. Sci.* 2022, 12, 5333. <https://doi.org/10.3390/app12115333> (FI = 2.7).

Ziani, K. †; Negrei, C. †; Ioniță-Mîndrican, C.-B. *; **Musuc, A. M.** †; Predoi, V. P.; Udeanu, D. I.; Mititelu, M. Drug-Food Interactions: the influence on the patient's therapeutic plan, *Farmacia*, 2022, 70(5) 785-797. <https://doi.org/10.31925/farmacia.2022.5.3>. (FI = 1.6).

Giurcan, V.; Mitu, M. *; **Movileanu, C.; Razus, D.**; Oancea, D. Numerical Study of Laminar Flame Propagation in CH₄–N₂O–N₂ at Moderate Pressures and Temperatures. *Combustion, Explosion, and Shock Waves*, 2022, 58(1), 22-33. <https://doi.org/10.1134/S0010508222010038>. (FI = 1.2).

* - autor de corespondenta;

† - autor cu contributie egala cu primul autor;

‡ - autor cu contributii egale cu ultimul autor.

Lucrari publicate in Proceedings

Chesler, P.; Hornoiu, C.; Gheorghe, M.; Gartner, M. MOX Resistive Microsensors for Low Concentration Methane Detection. Eng. Proc. 2022, 27(1), 3, doi:10.3390/ecsa-9-13175.

Mitu*, M., Stolz, T., Zakei, S., “Inert gas influence on limiting experimental safe gap of fuel-air mixtures at various initial pressures”, 14th International Symposium on Hazards, Prevention, and Mitigation of Industrial Explosions (ISHPMIE), Braunschweig, Germania, 11– 15 iulie 2022.

Musuc, A.M.; Doni, M.; Popa, V.T. Microcalorimetric Characterization of Polymer Composites Biodegradability. Eng. Proc. 2022, 19, 34. <https://doi.org/10.3390/ECP2022-12664>.