

PERSONAL INFORMATION

Kovacs Eموke - Dalma

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WORK EXPERIENCE

2020 – present

Researcher CS III

INCDO – INOE 2000, Research Institute for Analytical Instrumentation (ICIA), Cluj-Napoca, Romania

Development, optimization and validation of gas chromatographic methods for the analysis of organic compounds from complex environmental matrices. Global change impact assessment on soil microbiota physiology and metabolic processes. Extended gas chromatographic analysis of soil microbiota fatty acids profile (community and individuals). PLFA based phenotypic assessment of soil microbiota (abundance and structure). Gas chromatographic analysis of the organic substrates in the soil. Assessing the impact of global change (climate change, anthropogenic change) on soil microbial diversity. Assessing the impact of global change on soil functions;

2018 – 2020

Researcher

INCDO – INOE 2000, Research Institute for Analytical Instrumentation (ICIA), Cluj-Napoca, Romania

Development, optimization and validation of gas chromatographic methods for the analysis of organic compounds from complex environmental matrices. Extended gas chromatographic analysis of soil microbiota fatty acids profile (community and individuals). PLFA based phenotypic assessment of soil microbiota (abundance and structure). Gas chromatographic analysis of the organic substrates in the soil. Assessing the impact of global change (climate change, anthropogenic change) on soil microbial diversity. Assessing the impact of global change on soil functions;

2015 – 2018

Research Assistant

INCDO – INOE 2000, Research Institute for Analytical Instrumentation (ICIA), Cluj-Napoca, Romania

Environmental scientist with main activities in field of analytical chemistry – gas chromatography and mass spectrometry techniques (GC-ECD, GC-FID, GC-FID-TCD-TCD, GC-MS): development, optimization and validation of organic compounds extraction from complex environmental and biota matrices

2014 – 2015

Volunteer

INCDO – INOE 2000, Research Institute for Analytical Instrumentation (ICIA), Cluj-Napoca, Romania

Environmental samples preparation and processing for gas chromatographic analysis (GC-ECD-FID, GC-FID-TCD-TCD, GC-MS)
Gas chromatographic analysis of the contaminants from different environmental matrices (water, soil, plants)
Extended analysis of natural gas composition by gas chromatography
Physico-chemical analysis of the quality of wastewater, surface, underground and drinking water

EDUCATION AND TRAINING

- 2015 – present **Doctoral (phd) student (ISCED 6)**
 Doctoral School of Agricultural Engineering Sciences,
 Field: Agriculture/Agrotechnics
 Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj-Napoca, Romania
- Coordinator:
 Prof. Dr. Szilaghi-Dumitrescu Luminita
- Thesis title:
 Assessing of organic compounds path in living systems by experimental and numerical modelling
- 2016 – 2020 **Doctoral (phd) degree (ISCED 6)**
 University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture, Cluj-Napoca, Romania and,
 Polish Academy of Sciences, Institute for Agricultural and Forest Environment, Poznan, Poland
- Coordinators:
 Prof. Dr. Rusu Teodor
 Prof. Dr. Hab. Dr. H.C. Lech Wojciech Szajdak
- Thesis title:
 Global change impact on soil property, functioning and provided ecosystem services
- 2013 – 2015 **Master degree (ISCED 5A)**
 Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Advanced Chemical Process Engineering, Cluj-Napoca, Romania
- 2009 - 2013 **Bachelor degree (ISCED 5A)**
 Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Engineering and Information Technology of Chemical and Biochemical Processes, Cluj-Napoca, Romania

PERSONAL SKILLS

Mother tongue(s) Romanian, Hungarian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
French	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
[Common European Framework of Reference for Languages - Self-assessment grid](#)

Communication skills Sociable, team spirit

Job-related skills Gas chromatographs (GC-ECD-FID, GC-FID / TCD-TCD) operation and maintenance

Mass spectrometer coupled with gas chromatograph (GC-MS; Gc-MS/MS) operation and maintenance

Operation and maintenance of automatic extraction equipment as HS, SPME, and HS-SPME

Microplate reader (absorbance, luminescence, fluorescence)

Microscopy (visible, fluorescence)

Operation of other common equipment in chemistry laboratories

Digital skills Microsoft Office, Internet explorer, HTML, LaTeX

Statistics: StatSoft, Crystal Ball, R

Engineering: LabView, ChemCad, Aspen

Mathematics: Matlab Simulink, Maple, Wolfram

Design: Ansys, Maya, Comsol, 3ds Max, Solid Edge, Gambit, Catia v5

Chromatographic softs: ChemStation, OpenLab, MassHunter, Cromeleon

etc.

ANNEXES

List

Publications – ISI articles

Publications – BDI articles

Publications – Book chapters

Projects – as coordinator/responsible

Projects – as member

Exchanges and trainings

Conferences

Publications – ISI articles

Kovacs ED., Silaghi-Dumitrescu L., Roman C., Tian D. Structural and metabolic profiling of *Lycopersicon esculentum* rhizosphere microbiota artificially exposed at commonly used non-steroidal anti-inflammatory drugs. *Microorganisms*, 10(2):254, **2022**. (IF: 3.864)

Beldean Tatar BV., Chis MS., Alexa E., Pop C., Paucean A., Man S., Igual M., Kovacs MH., **Kovacs ED.**, Stanila S., Socaci S., Farcas A., Berbecea A., Popescu I., Muste S. The impact of insect flour on sourdough fermentation-fatty acids, amino-acids, minerals and volatile profile. *Insects*, 13(7):576, **2022**. (IF: 2.662)

Senila L., Hoaghia A., Moldovan A., Torok IA., **Kovacs D.**, Simedru D., Tomoiag CH., Senila M. The potential application of natural clinoptilolite-rich zeolite as support for bacterial community formation for wastewater treatment. *Materials*, 15(10):3685, **2022**. (IF: 3.601)

Senila M., Neag E., Cadar O., **Kovacs ED.**, Aschilean I., Kovacs MH. Simultaneous removal of heavy metals (Cu, Cd, Cr, Ni, Zn and Pb) from aqueous solutions using thermally treated Romanian zeolitic volcanic tuff, *Molecules*, 27(12):3938, **2022**. (IF: 4.148)

Senila M., Neag E., Cadar O., Hoaghia MA., Roman M., Moldovan A., Hosu A., Lupas A., **Kovacs ED.** Characteristics of volcanic tuff from Macicasu (Romania) and its capacity to remove ammonia from contaminated air. *Molecules*, 27(11):3503, **2022**. (IF: 4.148)

Kovacs ED., Silaghi-Dumitrescu L., Kovacs MH., Roman C. Determination of the uptake of ibuprofen, ketoprofen, and diclofenac by tomatoes, radishes and lettuce by gas chromatography-mass spectrometry (GC-MS). *Analytical Letters*, 54(1-2):314-330, **2021**. (IF: 2.42)

Kovacs ED., Rusu T., Szajdak L., Tian D., Roman C., Senila L., Kovacs MH. Revitalization of pesticide-polluted agricultural soil functions by microbiome transplantation. *Environmental Engineering & Management Journal (EEMJ)*, 20(4), **2021**. (IF: 0.944)

Fat AI., Dan SD., Tabaran A., Vesa GV., Nikolaou FG., **Kovacs ED.**, Roman C., Kovacs MH., Mihaiu R., Mihaiu M. Evaluation of the level of contamination with phthalates in dairy products found on the Romanian market. *Studia UBB, Chemia* 66(4), **2021**. (IF: 0.558)

Kovacs ED., Simedru D., Kovacs MH. GC-MS analysis of some plastic components from 1997-2003 computer main boards. *Studia UBB, Chemia* 66(2):163-171, **2021**. (IF: 0.558)

Senila L., Costiug S., Becze A., Kovacs ED., Kovacs E., Scurtu DA., Todor-Boer O., Senila M. Bioethanol production from Albies Alba wood using adaptive neural fuzzy interference system mathematical modelling. *Cellulose Chemistry and Technology*, 54:53-64, **2020**. (IF:1.467)

Tian D., Yan Z., Ma S., Ding Y., Luo Y., Chen Y., Du E., Han W., **Kovacs ED.**, Shen H., Hu H., Kattge J., Schimd B., Fang J. Family-level leaf nitrogen and phosphorus stoichiometry of global terrestrial

plants. *Science China Life Sciences*, 62(8):1047-1057, **2019**. (IF:3.583)

Budiu L., Luca E., Ona A., Muntean L., Becze A., Simedru D., Kovacs M., **Kovacs D.** Response of antioxidant potential and essential oil components to irrigation and fertilization on three mint species (*Mentha* spp. L.). *Romanian Agricultural Research*, 36:165-171, **2019**. (IF:0.469)

Dehelean A., **Kovacs ED.**, Magdas DA., Cristea G., Voica C., Feher I., Kovacs MH., Marincas O., Zhang Z., Li P., Zang Q. Infant supplement quality evaluation by inductively coupled plasma-mass spectrometry, gas chromatography, and isotope ratio mass spectrometry. *Analytical Letters*, 52(1):127-138, **2019**. (IF:1.248)

Hoaghia MA., Roman C., **Kovacs ED.**, Tanaselia C., Ristoiu D. The evaluation of the metal contamination of drinking water sources from Medias town, Romania using the metal pollution indices. *Studia UBB Chemia*, 61(3), **2016**. (IF: 0.244)

Publications – BDI articles

Kovacs ED., Silaghi-Dumitrescu L., Kovacs MH., zajdak LW., Roman C. Effects of pharmaceuticals presence in agroecosystem on volatile aroma content in tomato fruit. *Agricultura*, 115(3-4):134-143, **2020**.

Kovacs MH., **Kovacs ED.**, Silaghi-Dumitrescu L., Roman C. Changing weather pattern impact on soil microbial efficiency in commonly used pharmaceutical contaminants breakdown from soil environment. *Agricultura*, 115(3-4):253-270, **2020**.

Kovacs ED., Rusu T., Szajdak WL., Kovacs MH., Roman C., Tian D. Cypermethrin non-target impact on soil microbial communities: laboratory artificial incubation experiment. *Agriculture – Science and Practice*, volume 109-110(1-2):132-139, **2019**.

Kovacs ED., Rusu T., Szajdak WL., Kovacs MH., Roman C., Tian D. Rhizosphere microbiota profile changes with different genetic types of tomato species. *Agriculture – Science and Practice*, volume 109-110(1-2), pp140-150, **2019**.

Kovacs ED., Kovacs MH., Senila M., Bolos D., Aschilean I. Past used emergent pesticide removal efficiency from water environment by zeolites with different granule sizes. 19th International Multidisciplinary Scientific GeoConference SGEM 2019, Section Ecology and Environmental Protection, pp 587-593, **2019**.

Miclean M., Kovacs MH., **Kovacs ED.**, Paizs C. Levels of PCDDs/PCDFs in several cheese and butter samples collected from Cluj-Napoca market, Romania. *Advances in Environmental Sciences* 9(1):1.5, **2017**.

Kovacs ED., Rusu T., Szajdak WL., Kovacs MH. Assessment of degradation kinetics and transformation products formation of diuron in soil under simulated and drought-flood stress conditions considering challenges, in 17th International Multidisciplinary Scientific Geoconference SGEM, volume 17, pp 357-364, **2017**. doi:10.5593/sgem2017/32, ISSN:1314-2704

Kovacs ED., Rusu T, Szajdak LW. Climate change associated meteorological anomalies impact on soil nutrient cycle and dynamics, in 17th International Multidisciplinary Scientific Geoconference SGEM 2017, volume 17, pp 69-76, 2017. doi:10.5593/sgem2017/32, ISSN:1314-2704

Kovacs ED., Kovacs MH., Trambitas R. Dynamic modelling of pesticides uptake by triticum spp. anatomical compartments. *Journal of International Scientific Publications*, 4:215-228, **2016**.

Kovacs MH., **Kovacs ED.**, Ristoiu D. Mother diet impact on breast milk quality: estimation of breast feed infant intakes, *Journal of International Scientific Publications*, 4:192-214, **2016**.

Kovacs MH., Miclean M, **Kovacs DE.**, Cadar, Roman M., Senila L., Simedru D., Naghiu A. Organochlorine pesticide impact on vegetables. *Agricultura – Revista de Stiinta si Practica Agricola*, 1/2:5-8, **2015**.

Kovacs ED., Trambitas R., Lukacs Imre A., Kovacs MH., Ristoiu D. Interplay between experimental and numerical approaches in botanical studies: development of a hybrid REC inverse method with application in mycology. *Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies VI*, 8411:564-571, **2012**.

Ristoiu D., Kovacs ED., Cobzac C., Parvu M., Ristoiu T., Kovacs MH. SIM-GC-MS analysis of biochemical evolution in *Amanita* genus. *Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies V*, 7821:532-539, **2010**.

Ristoiu D., Kovacs ED., Pârvu M., Silaghi-Dumitrescu L. Chemical contents identification on gc-ms from selected species of *Macromycetes*. *Studia Universitatis Babes-Bolyai, Chemia*, 4, **2009**.

Publications – Book chapters

Kovacs ED., Kovacs MH. *Gas Chromatographic: Mass Spectrometric mining the volatilomes associated to rhizobiota exposed to commonly used pharmaceuticals*. *Biodegradation Technology of organic and Inorganic Pollutants*, Books on Demand, 2022

<p>Projects – as coordinator/responsible</p>	<p>Kovacs ED., Kovacs MH., <i>Numerical modeling of chemical compounds' fate and kinetics in living organisms: an inverse numerical method for rate estimation from concentration</i>. Numerical Simulation in Engineering and Science, IntechOpen, 2018.</p> <p>Kovacs MH., Kovacs ED., <i>Concerning organometallic compounds in environment: occurrence, fate, and impact</i>. Recent Progress in Organometallic Chemistry, IntechOpen, 2017.</p> <p>POC, Cod SMIS 105654 Contract 7/01.09.2016/ Subcontract S9. Realizarea trabsferului de cunostiinte acumulate si tehnologii dezvoltate de INCDO-INOE 2000, Filiala ICIA in domeniul Materiale pentru implementarea lor la intreprinderi din Romania, Trend. (Responsible Contract S9)</p> <p>Research Results Award Project, PRECISI-2019-66562, PN-III-P1-1.1-PRECISI-2019-40159</p> <p>Mobility grant for young researchers/phd. students: PN III-P1-1.1.MC-2018-2826, Contract no. 741/22.10.2018, Project title: Global change impact on soil microbiota community and structures in agricultural and forest ecosystems: effects on ecosystem services (Coordinator)</p> <p>Mobility grant for young researchers/phd. students: PN III-P1-1.1.MC-2017-2334, Contract no. 651/18.12.2017, Project title: Global change impact on soil extracellular enzymatic activities (Coordinator)</p>
<p>Projects – as member</p>	<p>Cod Proiect PN-III-P3-3.1-PM-RO-FR-2019-0090, Improving lignocellulosic biomass pretreatment to increase biogas yields</p> <p>ANCS NUCLEU PN18-28.02.01 Contract no. 33N/16.03.2018, Assessing the impact of climate change on soil microbial diversity through optosphectral and complementary techniques.</p> <p>Cod Proiect PN-III-P3-3.1-PM-RO-CN-2018-0128, Effects of global changes on soil microbial structure and functioning in forest and agricultural ecosystems: patterns, mechanisms and coping techniques</p> <p>Cod proiect EEA-RO-NO-2018-0138, Monitoring and risk assessment for groundwater sources in rural communities of Romania.</p> <p>Cod Proiect PN-III-P1-1.2-PCCDI-2017-0251, A complex integrated system for technology optimization and superior valorization of the winemaking and viticulture by-products</p> <p>Cod Proiect PN-III-P1-1.2-PCCDI-2017-0652, Innovative technologies for advanced recovery of waste materials from it and telecommunication equipment</p> <p>ANCS NUCLEU PN 16.40.02.01 Contract no. 5N/9.03.2016, Anthropic contaminants transfer through the trophic chain, determination by opto-spectral methods. Determination of transfer coefficients”</p> <p>PN III Romanian-China Bilateral Cooperation Project, BM54/2016, Estimation of the potential risk of rural wells-water: current challenges (disinfection) vs. future challenges (climate events)</p> <p>Cod Proiect PN-III-P4-ID-PCCF-2016-0016, Contract no. 15/2018, Food chains in the dark: diversity and evolutionary processes in caves (DARKFOOD)</p> <p>Cod Proiect PN-III-P3-3.1-PM-RO-FR-2016-0026, Evaluarea impactului activitatilor antropice(minerit, trafic, aglomerari urbane, schimbarea folosintei solului) asupra contaminarii unor rauri din Franta si Romania</p> <p>Cod Proiect PN-III-P3-3.1-PM-RO-MD-2016-0140, Improving surface water quality assessment by semiquantitative and multielemental spectrometric methods</p> <p>Cod Proiect PN-III-P3-3.1-PM-RO-MD-2016-0056, Change in redox status and expression of stress related genes in spirulina (arthrospia) under oxidative stress condition</p>
<p>Exchanges and trainings</p>	<p>10-25 July 2019 at Capital Normal University, College of Life Sciences, Beijing, R.P. China</p> <p>30 Nov-18 December 2018 at Nagoya University, Associate School of Bioagricultural Sciences, Nagoya Japan, and Institute for Rural Engineering National Agriculture and Food Research Organization, Tsukuba, Ibaraki Japan</p> <p>3-18 February 2018 at Polish Academy of Sciences, Institute for Agricultural and Forest Environment, Poznan, Poland</p> <p>17-28 November 2017 at Sun Yat-sen University, Department of Environmental Science, Guangzhou, R.P. China</p> <p>13-15 June 2016 at Spanish Council for Scientific Research, Institute of Environmental Assessment and Water Research (IDAEA-CSIC) NEREUS (Cristina Becerra-Castro) Training school on “Methods for detecting and quantifying antibiotic resistant bacteria and antibiotic resistances genes in the environment”, Barcelona, Spain</p>
<p>Conferences</p>	<p>19-22 April 2021 at Food and Agriculture Organisation of the United Nations “FAO”, Global Symposium on Soil Biodiversity, (online)</p>

Curriculum vitae

24-27 August 2020 at 32nd Annual Conference of the International Society for Environmental Epidemiology "ISEE", (virtual conference – poster travel award)

24-27 August 2020 at 32nd Annual Conference of the International Society for Environmental Epidemiology, "ISEE 2020", Virtual conference, Poster presentation Non-steroidal anti-inflammatory drugs (NSAIDs) impact on soil microbiota: consequences on soil functioning

25-27 September 2019, at International Conference Processes in Isotopes and Molecules, Cluj – Napoca, Romania, Poster presentation Simultaneous GC-MS analysis of pharmaceutical active compounds from environmental and biota samples: uptake potentials determination for common vegetables

18-21 September 2019, at 10th International Conference on Environmental Engineering and Management, (ICEEM 10) Iasi, Romania, Poster presentation Revitalisation of pesticide – polluted agricultural soil functions by microbiom transplantation

28 June-7 July 2019 at 19th International Multidisciplinary Scientific GeoConference SGEM, Bulgaria, Past used emergent pesticide removal efficiency from water environment by zeolites with different granule sizes

4-7 September 2017 at 3rd International Symposium on Profiling ISPROF 2017, Costa de Caparica, Portugal, Shotgun presentation GC – MS profiling of pharmaceutical products uptake by edible plants: challenges of wastewater reuse in agriculture

20-24 June 2016 at 4th International Conference Agriculture & Food, Elenite, Bulgaria, Poster presentation Dynamic modelling of pesticides uptake by Triticum sp. Anatomical compartments

2-4 September 2013 at International Symposium on Profiling ISPROF13, Caparica, Portugal, Poster presentation Aroma and fatty acid content profiling from edible and non-edible mushroom species through gas chromatography-mass spectrometry

17-19 September 2012 at 3rd SETAC CEE Annual Meeting, Krakow, Poland, Poster presentation Banned and un-banned organochlorine pesticides fingerprint on cultivated wheat (Triticum sp.)

29 April-3 May 2012 at 30th Informal Meeting on Mass Spectrometry, Olomouc, Czech Republic, Poster presentation Ecotoxicological assessment of home-grown foodstuffs with GC-qMS for inhabitants' dietary exposure estimation, and Poster Presentation Mass spectrometric characterization of aroma value behaviour in *Cantharellus cibarius*. at different evolution stage

Orchid **0000-0001-7251-0155**
BrainMap **U-1700-039H-4251**

Data: 30.08.2022

Semnatura: