



Curriculum Vitae



Dr. Chem. Maria-Luiza Jecu, PhD in Biology (since 1998) is **Senior Researcher I**, leader of Biotechnology & Bioanalysis Research Group from INCDCP-ICECHIM, founding member of Romanian Society of Bioengineering and Biotechnology, affiliated to European Federation of Biotechnology.

The area of competence comprises biotechnology, enzymology and applied microbiology. The major achievements in professional activity: **more than 30 papers published in ISI reviewed Journals**; book chapters; **over 25 National Patented inventions** in the obtainment and characterization of specialized microbial strains for various applications; **over 150 scientific communications**; **2 European patents**; **a WIPO patent**, **6 projects coordinated as project director and 7 projects as partner responsible**; **member in international projects** (3 Leonardo da Vinci projects, 2 Eureka projects, MANUNET); **member in over 30 scientific research projects**.

Publications in ISI Journals (selection)

- ◆ A Stan, C Munteanu, AM Musuc, R Birjega, R Ene, A Ianculescu, I Raut, [L Jecu](#), M Badea Doni, EM Anghel, O Carp, 2015, A general, eco-friendly synthesis procedure of self-assembled ZnO-based materials with multifunctional properties, Dalton Transac, 44, 7844 – 7853.
- ◆ [L Jecu](#), E Grosu, I Raut, V Purcar, Z Vuluga, M Iorga, G Vasilescu, M. Rapa, M Badea-Doni, ML Arsene, 2015, Susceptibility of thermoplastic based composites to degradation by microorganisms, Environ. Eng. Manag. J., 14(11), 2545-2554.
- ◆ I Atkinson, E M Anghel, L Predoana, O C Mocioiu, [L Jecu](#), I Raut, C Munteanu, D Culita and M Zaharescu, 2016, Structural, in vitro and antibacterial study on a sol-gel derived CaO-P₂O₅-SiO₂-ZnO bioactive glasses “Sol-gel derived-ZnO glasses for biomedical applications, Ceram. Int., 42, 3033–3045.
- ◆ IS Hosu, D Constantinescu-Aruxandei, [L Jecu](#), F Oancea, M Badea Doni, 2016, Peroxynitrite sensor based on screen printed carbon electrode modified with a poly(2,6-dihydroxynaphthalene) film Sensors 16(11), 1975-1990.
- ◆ C Petcu, V Purcar, C Spataru, E Alexandrescu, R Somoghi, B Trica, S Nitu, D Panaitescu, D Donescu, [L Jecu](#), 2017, The Influence of New Hydrophobic Silica Nanoparticles on the Surface Properties of the Films Obtained from Bilayer Hybrids, Nanomaterials, 7(2), 47. doi:10.3390/nano7020047.
- ◆ F Oancea, E Georgescu, R Matusova, F Georgescu, A Nicolescu, I Raut, [L Jecu](#), MC Vladulescu, L Vladulescu, C Deleanu, 2017, New Strigolactone Mimics as Exogenous Signals for Rhizosphere Organisms, Molecules, 22(6). doi: 10.3390/molecules22060961.
- ◆ M Călin, D Constantinescu-Aruxandei, E Alecsandrescu, I Raut, M Badea Doni, ML Arsene, F Oancea, [L Jecu*](#) (coresp), V Lazăr, 2017, Degradation of keratin substrates by keratinolytic fungi, Electronic Journal of Biotechnology, 28, 101-112 (Elsevier).
- ◆ M Calin, I Raut, M Doni, E Alexandrescu, G Macovescu, M L Arsene, AM Gurban, G Vasilescu, [L Jecu*](#) (coresp), 2019, The potential of keratinolytic fungi for biotechnological applications in leather manufacture, Revista de Chimie (Bucharest), 9, 3152-3157.
- ◆ LO Cinteza, C Scamoroscenco, SN Voicu, C N Nistor, SG Nitu, B Trica, [L Jecu](#), C Petcu, 2018, Chitosan stabilized Ag nanoparticles with superior biocompatibility and their synergistic antibacterial effect in mixtures with essential oils, Nanomaterials, 8, 826; doi:10.3390/nano8100826.
- ◆ M Calin; I Raut; ML Arsene; L Capra; AM Gurban; M Doni; [L Jecu*](#) (coresp), 2019, Applications of Fungal Strains with Keratin-Degrading and Plant Growth Promoting Characteristics, Agronomy (Basel), 9(9), 543.doi.org/10.3390/agronomy9090543.

- ◆ I Raut, M Calin, Z Vuluga , E Alexandrescu, ML Arsene, V Purcar, CA Nicolae, AM Gurban , M Doni, [L Jecu*](#), 2019, Comparative Study on the Behavior of Virgin and Recycled Polyolefins–Cellulose Composites in Natural Environmental Conditions, *J. Compos. Sci.*, 3, 60. doi:10.3390/jcs3020060.

Patents (selection)

- ◆ National Patented inventions (selection) 126895/2014; 128294/2015; RO128930/2017; 131830B1/2018; 129369B1/2018; 129369B1/2018; 131224B1/2019, 131154/2019; 129369/2019; 131828B1/2019; 131225/2019; RO 131933/2020; RO 132559/2020; RO 131926/2020; RO/132572/2020.
- ◆ 2 European patents EP13464002/2013; EP12464023/2012.
- ◆ WIPO patent PCT/RO2013/000024/2013

Books and Book chapters

- ◆ Book *Trichoderma spp. – Applications in agriculture and horticulture*, 2016, Editura Universitatii din Bucuresti (Coordinator Prof. Dr. TE Sesan), ISBN 978-606-16-0900-0. *Chapter 3*. Chemical structure of secondary metabolites, Arsene M.L., Badea-Doni M., [Jecu L*](#), Răut I., Călin M; *Chapter 4*. Bioactivity and biological role of secondary metabolites produced by *Trichoderma* spp, Arsene M.L.*, [Jecu L.](#), Badea-Doni M., Raut I., Oancea F., Calin M.; *Chapter 5*. Volatile and non-volatile metabolites of *Trichoderma* with biocontrol implications, Răut I., Şesan T.E., Arsene M.L.*, Badea-Doni M., [Jecu L.](#), Călin M., Vasilescu G., Oancea F.; *Chapter 7*. *Trichoderma* Strains as Plant Biostimulants in High Residues Farming Systems, F., Oancea, I. Raut, T.E. Sesan, M. Doni, M. Popescu, V. Zamfiropol-Cristea, [L. Jecu](#); *Chapter 8* - Formulation of the Multifunctional *Trichoderma* Strains, F. Oancea, I. Raut, T.E. Sesan, M. Doni, M. Popescu, V. Zamfiropol-Cristea, [L. Jecu](#).
- ◆ Raut, M. Calin, M.L. Arsene, M. Doni, A.M. Gurban, [L. Jecu*](#) (coresp), 2018, Chapter X. Microbial deterioration of textile and wood artifacts, In: *Valorization of cultural heritage through archaeometry studies using nuclear techniques and other scientific methods. General considerations and short literature survey*, (R.C. Fierascu, I. Fierascu, M. Doni, eds), ISBN: 978-973-0-27114-0, Published in pdf Acrobat Reader format – CD-ROM, Bucharest, 2018.

Representative Conferences (selection)

- ◆ [L Jecu](#), E Grosu, I Raut, M Calin, A Musuc, G Vlad. Biodegradation of poly(hydroxybutyrate)/poly(vinyl alcohol) blends by filamentous fungi, International Conference ELSEDIMA, Ed. a IX-a, 25 – 27 Octombrier 2012, Cluj-Napoca.
- ◆ I Raut, G Vasilescu, M Badea-Doni, M L Arsene, T Sesan, [L Jecu*](#) (coresp), *In vitro* evaluation of antifungal activity of selected *Bacillus* strains against phytopathogens, International Conference of the University of Agronomic Science and Veterinary Medicine of Bucharest « Agriculture for Life, Life for Agriculture », June 4-6, 2015, Bucharest, Romania, Book of abstracts Section 6: Biotechnology, pg 94, ISSN 2343-9653, CERES publishing House
- ◆ I Raut, E Grosu, M Badea-Don, Zina Vuluga, M Calin, V Purcar, M L Arsene, M Rapa, G Vasilescu, [L Jecu*](#) (coresp), Environmental biodegradation of composite polymeric materials in soil, International Conference of the University of Agronomic Science and Veterinary Medicine of Bucharest « Agriculture for Life, Life for Agriculture », June 4-6, 2015, Buc
- ◆ Şesan, [L Jecu](#), M L Arsene, M Badea-Doni, G Vasilescu, Strain for Treatment of High Residue Agricultural Systems and Nutraceutical Crops, European Biotechnology Congress 2015‘Bucharest, 7 – 9 may 2015 (Journal of Biotechnology, vol. 208, 20 august 2015, S62, FI=3,34 (<http://www.sciencedirect.com/science/journal/01681656/208/supp/S62>
- ◆ F. Oancea, I. Răut, T.E. Şesan, M. Badea-Doni, M. Popescu, [L. Jecu](#), Plant biostimulants activity of bioenhanced and pelletized spent *Pleurotus* substrate, "3rd ISHS Organic Greenhouse Horticulture Symposium", Izmir, Turkey, 10 – 14 April, 2016.

- ◆ M Călin, O Drăcea, I Răut, G Vasilescu, M Doni, ML Arsene, E Alexandrescu, D Constantinescu-Aruxandei, [L Jecu*](#), V Lazăr, *In vitro* biodegradation of keratinized substrates by keratinophilic fungi, International Conference of the University of Agronomic Science and Veterinary Medicine of Bucharest « Agriculture for Life, Life for Agriculture », June 4-6, 2015, Bucharest, Romania; Book of abstracts Section 6: Biotechnology, pg 82, ISSN 2343-9653, CERES Publishing House
- ◆ [L Jecu](#), E Grosu, I Raut, F Oancea, M Calin, G Vasilescu, M Rapa, M Badea-Doni, M L Arsene, The durability of poly(vinyl chloride) - wood composites exposed to fungal degradation, 11th International Conference “Environmental Legislation, Safety Engineering and Disaster Management”, 26-28 May 2016 n Cluj-Napoca, Romania, Book of abstracts, pg. 97.
- ◆ I Raut, M Badea-Doni, M Calin, Z. Vuluga, G. Vasilescu, A M Musuc, V Purcar, M L. Arsene, E Alecsandrescu, [L Jecu*](#), The effect of soil burial degradation on cellulose fiber-filled polypropylene composites, 16th International Conference of Physical Chemistry, ROMPHYSICHEM–16, Galati, 21-23 Sept 2016
- ◆ M. Doni, G. Petcu, M. Patrascu, M.-L. Arsene, V. Fruth, [L Jecu](#), Screen printed carbon electrode modified with copper oxide nanoparticles for glucose determination, RO-ICAC'16 - 3rd International Conference on Analytical Chemistry, Iasi, Romania, 28-31 August 2016.
- ◆ M Calin, I Răut, F Oancea, M Doni, ML Arsene, H Pop, Jenica Paceagiu, G Vasilescu, [L Jecu*](#) (coresp), Z Vuluga, Innovative biomaterial for thermal insulation of building constructions, International Symposium” Environment and Industry”, SIMI ECOIND, 28-29 Sept 2017, Bucharest.
- ◆ M Călin, I Răut, D Constantinescu-Aruxandei, F Oancea, M Badea Doni, ML Arsene, G Vasilescu, [L Jecu*](#), AM Gurban, ON Corneli, V Lazăr, Useful application of fungi producing simultaneously keratinase and chitinase in plant growth and protection, International Conference of the University of Agronomic Science and Veterinary Medicine of Bucharest « Agriculture for Life, Life for Agriculture », June 7-9, 2018, Bucharest, Romania; Book of abstracts Section 6: Biotechnology, pg 85, ISSN 2343-9653, CERES Publishing House
- ◆ M Călin, I Răut, D Constantinescu-Aruxandei, ML. Arsene, G Vasilescu, AM Gurban, M Doni, [L Jecu*](#), Plant growth promoting properties of fungal strains cultured on keratin waste substrates, International Conference New Trends on Sensing- Monitoring- Telediagnosis for Life Science, 30 August -1 September 2018, Brasov.
- ◆ I. Raut, M. Calin, Z. Vuluga, E. Alexandrescu, M.L. Arsene, G. Vasilescu, A. M. Gurban, M. Doni, [L Jecu*](#), Overview on microbial degradation of polyolefins based composites, 11th International Conference on Materials Science & Engineering, BraMat 2019, 13-16 MARCH 2019, Brasov, Romania.
- ◆ Gurban A.-M., Epure P., Arsene M.L., [Jecu L.](#), Trica B., Doni M, Advances in development of biosensing electrochemical platforms for mycotoxins detection, 4th International Congress on Biomaterials & Biosensors (BIOMATSEN2019), 12-19 May.2019, Fethiye-Milga, Turcia.
- ◆ M Călin, I Răut, MI Arsene, AM Gurban, M Doni, G Vasilescu, E Alexandrescu, [L Jecu*](#), Valorization of inexpensive and abundant by-products from agro-industry through specialized microorganisms, International Conference of the University of Agronomic Science and Veterinary Medicine of Bucharest « Agriculture for Life, Life for Agriculture », June 4-6, 2020, Bucharest, Romania; Book of abstracts Section 6: Biotechnology.
- ◆ I Răut, M Călin, AM Gurban, M Doni, MI Arsene, E Alexandrescu, G Vasilescu, [L Jecu*](#), Preferential utilization of keratin substrates by different myco-keratinophiles, International Conference of the University of Agronomic Science and Veterinary Medicine of Bucharest « Agriculture for Life, Life for Agriculture », June 4-, 2020, Bucharest, Romania; Book of abstracts Section 6: Biotechnology,

Some additional information

- ◆ member of Scientific Council of ICECHIM, 2004-2019;
- ◆ member in doctoral commission (2011, 2013, 2018);

- ◆ tutorial activity in collaboration with University Politehnica Bucharest (2011, 2012, 2013), University of Agronomic Sciences and Veterinary Medicine (2011, 2012, 2013, 2016);
- ◆ awarded by CNCS for published papers and patents.

Specializations and qualifications

- ◆ Advanced Courses in Environmental Protection, Bucharest, November 2008, organized by Institute of Biology of Romanian Academy;
- ◆ Project manager Course within the framework of Vocational Training Program of Labor Romanian Ministry, Bucharest, March 2010; *Eco-economy and sustainable development*” POSDRU/81/3.2/S/53084 Comhightech/2007-2013 «Investeste in oameni», Bucharest (2013).

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