University POLITEHNICA of Bucharest
Faculty of Applied Chemistry and Materials Science

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Biography

Date	Role
2001-	Professor, Bioresources and Polymers Science Department, University POLITEHNICA of Bucharest
1999-2001	Associate Professor/Reader, Technology of Organic Substances & Macromolecule Compounds Department, University POLITEHNICA of Bucharest
1993-1999	Senior Lecturer, Technology of Organic Substances & Macromolecule Compounds Department, University POLITEHNICA of Bucharest
1990-1993	Assistant Professor, Technology of Organic Substances & Macromolecule Compounds Department, University POLITEHNICA of Bucharest
1982-1984	Engineer, Technology of Organic Substances & Macromolecule Compounds
1987-1990	Department, University POLITEHNICA of Bucharest
1984-1987	Scientific researcher, National Research Center for CBRN
1992-1996	Ph.D. in Chemical Engineering, POLITEHNICA University of Bucharest, Thesis Title: "Liquid phase oxidation of alkyl-aromatic hydrocarbons"
1975-1980	MSc. with 1st class honors in Organic Chemical Technology, University POLITEHNICA of Bucharest

Research

Research Interests

- Biofuels, biorefineries;
- Industrial chemistry – organic chemicals;
- Electron beam, microwave and ultrasound applications in chemical synthesis and material processing;
- Pollution control;
- Chemical and nuclear decontamination.

Selected Research Projects

- „Ultrasonic/Microwave Nonconventional Techniques as new tools for nonchemical and chemical processes", project: P_37_471, financed by contract: 47/05.09.2016, 2000 k€, Director for research
- Eco-friendly process for extraction of valuable compounds from plants – ECOVALUEPLANT, PN-II-PT-PCCA-2013 nr.172 / 2014, 400 k€, Project manager
- Technology and Equipment for the Treatment of Solid Oil Waste (drilling and sludge pit), CEEX 138/2006, 435 k€, Project manager;
- VOC Removal by combined electron beam and microwave treatment, CEEX 55/2005, 415 k€, Project manager;
- VOC Removal by combined electron beam and microwave treatment, IAEA-Wien, 13138/RF/2005-2006, UPB Responsible;
- Conversion performance increasing of the acid gases from flue gas by combined treatment with electron beam and microwave, PNCDI-2, 21-025/2007, UPB Responsible.

Academic interests

Teaching activity

- Organic Technologies
- Biorefineries Technologies
- Pollutant Emissions in the Biofuels Manufacture & Use
- Fuels, burning and pollution
- Catalysis
- Petroleum chemistry
- Surface active agents
- Experimental strategy in organic technology

Director of Master Study for 'Biofuels, Biorefineries & Related Technologies**'**

PhD supevisor: 2009 - present, 15 doctoral degrees awarded, 6 PhD students in stage

Honours and Awards

- "Emilian Bratu" medal from Romanian Chemical Society, 2015
- Award for Technical Competence for the paper entitled: Non-thermal plasma Processing for SO_2 and NO_x Removal – International Conference Optim 2002

Invited Lectures and Presentations

- In 2005, 2006, 2007, and 2008 I was invited to present my research at the "*Research Coordination Meeting on Electron Beam Treatment of organic pollutants contained in gaseous streams*", organized by the International Atomic Energy Agency in Vienna, Beijing, Warsaw, and Sofia. Here we made contact with several of the most renowned specialists in the world in the remediation of industrial gases using electron beam and microwave.
- Invited Professor, Jiaotong University, Xi'an, China, from 14 to 20 oct. 2017

Other Significant Activities

- ***Head of Department:*** Technology of Organic Substances & Macromolecule Compounds (2004-2012)
- **Dean** of the Faculty of Applied Chemistry and Materials Science (2013- 2016)

Membership of Professional Bodies

- From 1990: Member of the Romanian Chemical Society
- From 1990: Member of the Romanian Society for Chemical Engineering
- **National Consultant** for Regional Workshop on Feasibility Study For Electron Beam Flue Gas Treatment organised by International Atomic Agency (2005-2008)
- From 2015 Member od Association for Microwave Power in Europe for Research and Education (AMPERE)

Further Information

Reviewer for:

- Arabian Journal of Chemistry
- Chemical Engineering and Processing – Proces Intensification
- Chemical Engineering Science
- Chemosphere
- Critical Reviews in Environmental Science and Technology
- Environmental Science & Technology
- Fuel Preocessing Technology
- Industrial & Engineering Chemistry Research
- Journal of food processing
- Journal of Hazardous Materials
- Radiation Physics and Chemistry
- Revista Romana de Chimie
- Revue Roumaine de Chimie
- RSC Advances
- Surface and Coatings Technology
- Topics in Current Chemistry
- Transport Problems
- Ultrasonics Sonochemistry
- UPB-Scientific Bulletin
- 11th International Conference on Optimization of Electrical and Electronic Equipment

- ✓ Member in The Organizing Committee of The 15th, 16th, 17th Romanian International Conference on Chemistry and Chemical Engineering, Bucharest.
- ✓ President of the Organizing Committee of the 18th and 19th Romanian International Conference on Chemistry and Chemical Engineering, Bucharest
- ✓ Member in Technical Committee AMPERE 2017

Publications

Journal Articles 101 papers in ISI journals, 12 in other international journals with referees, 21 in national recognized journals (CNCSIS), 14 in other national journals, 150 in conference volumes, 824 citations, H-index 15

Articles (Selection)

- Calinescu, I., M. Vinatoru, T.J. Mason, A-I Gavrila, A Vartolomei. (2019). "**A reactor designed for the ultrasonic stimulation of enzymatic esterification**." Ultrason Sonochem.
- M. Vinatoru, T.J. Mason, I. Calinescu, „**Ultrasonically assisted extraction (UAE) and microwave assistedextraction (MAE) of functional compounds from plant materials**", Trends in Analytical Chemistry 97 (2017) 159-178
- Anca Racoti, Adam J. Buttress, Eleanor Binner, Chris Dodds, Adrian Trifan &Ioan Calinescu, „**Microwave assisted hydro-distillation of essential oils from fresh ginger root (Zingiber officinale Roscoe**)", Journal of Essential Oil Research, DOI: 10.1080/10412905.2017.1360216
- Galan, A.-M., Calinescu, I., Trifan, A., Dodds, C., Binner, E., **New insights into the role of selective and volumetric heating during microwave extraction: Investigation of the extraction of polyphenolic compounds from sea buckthorn leaves using microwave-assisted extraction and conventional solvent extraction**, Chemical Engineering and Processing: Process Intensification 2017, 116, pp. 29-39 http://dx.doi.org/10.1016/j.cep.2017.03.006
- Sibianu, T.I., Dimitrakis, G., Katrib, J., (...), Calinescu, I., Irvine, D.J., **Utilization of Dielectric Properties Assessment to Evaluate the Catalytic Activity and Rate of Deactivation of Heterogeneous Catalysts**, Industrial and Engineering Chemistry Research 2017, 56(8), pp. 1940-1947 WOS:000395493600006
- Ioan Calinescu, Ioana Asofiei, Adina Ionuta Gavrila, Adrian Trifan, Daniel Ighigeanu, Diana Martin, Constantin Matei, Mihaela Buleandra, **Integrating Microwave Assisted Extraction of Essential Oils and Polyphenols from Rosemary and Thyme Leaves**, Chemical Engineering Communications, 2017
- Ioan Calinescu, Vasile Lavric, Ioana Asofiei, Adina Ionuta Gavrila, Adrian Trifan, Daniel Ighigeanu, Diana Martin, Constantin Matei, **Microwave assisted extraction of polyphenols using a coaxial antenna and a cooling system**, Chemical Engineering and Processing: Process Intensification, 2017, http://dx.doi.org/10.1016/j.cep.2017.02.003

Books (8 books and books chapters)

- "**Pagini din istoria dezvoltarii industriei Romaniei, Industria chimica, petrochimica si de petrol**" Editura AGIR 2016, ISBN 978-973-720-654-1 capitolul: "Biotehnologii – biorafinarii" pag. 313-331 autori Ghe. Ivanus si Ioan Calinescu
- "**Cartea alba a reindustrializarii, Industria Chimica, petrochimica si de petrol**" AGIR 2018, ISBN 978-973-720-748-7, capitolul 11: Biotehnologii – Biorafinarii, autori Ioan Calinescu, Ghe. Ivanus; pp. 418-442
- Călinescu, I., Iliuta, I., **Heterogeneous Catalysts – Applications in organic chemical industry**, Ed. Printech, Bucharest, 2007, ISBN: 978-973-718-646-1 (in English).
- Iliuta, I., Calinescu, I., Water - **Apa – Treatment processes and quality standards - Legal regulations**, Ed. Printech, Bucharest, 2008, ISBN: 978-973-718-977-6 (in Romanian).

- Iovu, H., Călinescu, I., Martin, D., **Polymeric materials, new methods of synthesis and applications**, Ed. Printech, Bucharest, 1998, ISBN: 973-9402-58-5 (in Romanian).
- Martin, D., Ighigeanu, D., Calinescu, I., **Gaseous Pollutants Treatment by Combined Electron Beams and Microwaves**, pp. 181-198 in *Practical Aspects and Applications of Electron Beam Irradiation*, Research Signpost / Transworld Research Network , Kerala, India 2011
- Mateescu, E., Craciun, G., Martin, D., Ighigeanu, D., Radoiu, M., Calinescu, I., Iovu, H., **Environmental Aspects of Microwave Heating in Polyelectrolite synthesis** in: *Advances in Microwave & Radio Frequency Processing*, Editor (s): Monika Willert – Porada, Springer Berlin, 2003, 349-354, ISBN:978-3-540-43252-4
- Radoiu, M., Calinescu, I., Martin, D., Calinescu, R., **Liquid Phase Catalytic Hydrodechlorination of chlorobenze under microwave irradiation** in: *Advances in Microwave & Radio Frequency Processing*, Editor (s): Monika Willert – Porada, Springer Berlin, 2003, 398-405, ISBN 978-3-540-43252-4.
- Călinescu, I., Martin, D., Iovu, H., **Aplicaţii ale microundelor în sinteza şi procesarea materialelor**, pag.113-158 in *Electrotehnologii : Protectia mediului, procesarea de materiale si control nedistructiv* » Ed. AGIR, Bucureşti 2011, ISBN: 978-973-720-353-3

Patents - 6

- Patent Number(s): RO129069 B1, **Procedeu pentru eliminarea SO2 si NOx din gazele de ardere prin tratament cu electroni accelerati**, Ighigeanu D-P, Calinescu I, Martin D, Matei C, publicat in BOPI nr. 6/2018;
- Patent number RO 126841 B1, **Procedeu şi instalaţie pentru creşterea performanţei de conversie a poluanţilor gazoşi din gazele reziduale industriale**, Ighigeanu Daniel, Martin Diana, Calinescu Ioan, Matei Constantin, Manaila Elena, Craciun Gabriela, Publicat in BOPI 10/2017
- Patent number RO 129069 A2, **Procedeu pentru eliminare SO2 si Nox din gazele de ardere industriale prin tratament cu electroni accelerati de energie medie in pezenta picaturilor fine de apa**, Daniel Ighigeanu, Calinescu Ioan, Martin Diana, Matei Constatin, publicat in BOPI 12/2013
- Patent Number(s): RO126841-A2, "**Cresterea performantei de conversie a poluantilor gazosi din gazele reziduale industriale prin tratament combinat cu electroni accelerati si microunde**" ,*RO 126841 A2* Assignee: INFLPR, Inventor(s): Ighigeanu Daniel, Martin Diana, Calinescu Ioan, Matei Constantin, Manaila Elena, Craciun Gabriela, Derwent Primary Accession Number: 2011-Q13072 [54], 2011, publicat in BOPI 11/2011;
- Brevet OSIM nr. RO125293-A2/30.03.2010; **Procedeu pentru purificare aer şi ape uzate cu încărcătură chimică organică folosind cărbune activ obţinut din materiale reciclabile**; Autori: G. Predeanu, S. Lambescu, I. Calinescu, P. Chipurici, V. Slavescu, D. Mihaiescu, I. Vacarciuc, A. Patrut, C. Ciminian, Derwent Primary Accession Number: 2010-J59742, publicat in BOPI nr. 8/2013;
- Inventie nr. RO 103108 B1 19911102, R.Avram, I.Călinescu, Eva Vueric " **Continuous sepn. of anthracene from coke chemistry anthracene|consists of extn. based on aq. soln. of polar solvents**