

Curriculum Vitae

Personal information

First name: **Iuliana Mihaela**
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Nationality: Romanian
Date of birth: June 28, 1979

Professional experience

Dates: 2016 – present
Position: **Associate professor**
Company: **University Politehnica of Bucharest, Faculty of Applied Chemistry and Material Science, Chemical and Biochemical Engineering Dept., Romania**
Company description: University Politehnica of Bucharest is the largest and the oldest technical university in the country and among the most prestigious universities in Romania (www.pub.ro)
Main activities and responsibilities:

- Teaching courses:
 - Industrial Effluents Treatment
 - Food Biotechnologies
 - Unit operations
- Supervising students' projects:
 - Design of Distillation Columns / Heat Exchangers / Wastewater Treatment Plant
- Researcher as team member of Mass Transfer Group

Dates: 2012 – 2016
Position: **Process engineer**
Main companies: **Environmental Technologies (LET) Romania / Ludan Engineering SRL (LRo)**
Company description: LET and LRo belong to Ludan Group that provides multidisciplinary engineering services ranging from conceptual design and feasibility studies up to basic and detailed engineering (www.ludan-group.com)
Main activities:

- Conceptual design of industrial wastewater treatment plants/processes, including sludge management: treatment for recovery and reuse of valuable constituents of primary sludge, treatment for disposal of waste activated sludges;
- Basic design of industrial wastewater treatment plants/units, including chemicals facilities and sludges treatment facilities;
- Field survey and preliminary investigations studies for performances improvement of existing wastewater treatment plants and for the development of new facilities;
- Basic design for biogas plants;
- Development of technical and commercial offers;
- Technical support for feasibility studies;
- Documentation for permitting procedures;
- Marketing activities.

Training sessions: **May 2012 – Ludan Renewable Energy SL Spain** - design of a biogas plant. It included:

- Development of basic design engineering package for a biogas plant;
- Emissions evaluation/calculation, part of carbon credits projects;
- Site visits of existing biogas plant and constructions sites.

November 2012 – KH Engineering BV Netherlands - development of preliminary P&ID, and line list - part of the engineering package for a large Biogas Plant in Romania (3 MW)

Main projects and responsibilities:

New wastewater treatment plant at «NIS» A.D. Novi Sad, Eemir, Serbia

- Development of basic design documentation: process and plant descriptions (PPD), process flow diagrams (PFD), conceptual piping and instrumentation diagrams (PID), process equipment datasheets (PDS), technical lists (lines, equipment, fluids) mass balance (MB), chemicals balance, etc.;
- Preparation of RFQ equipment documentation and offers evaluation for the provider selection.

Feasibility study for Wastewater treatment plant upgrade at Sisak Refinery, INA - Industrija Nafta d.d., Croatia

- Elaboration of the technical proposal submitted to the Client (international tender);
- Field survey, investigation of initial data and elaboration of initial conditions report;
- Elaboration of process technical documentation, part of the feasibility study: plant layout, PDS, PPD, PFD, technical lists and MB etc.

Wastewater treatment plant for treatment of the wastewater containing ammonium and nitrate ions at S.C. Donau Chem S.R.L., Turnu Măgurele, Romania (start-up 2014)

- Elaboration of the technical proposal submitted to the Client;
- Field survey and investigation of initial data, including evaluation of existing equipment (vessels, pumps) to be reused for cost minimization;
- Basic design documentation: PPD, PED, PFD, PID, plant layout, technical lists, MB and chemicals requirements, biological sludge management (waste activated sludge treatment for disposal), etc.;
- Elaboration of plant Operational Manual and assistance during start-up.

Basic Engineering Design for the new wastewater treatment plant at JSC "Gazpromneft – Omsk Refinery", Russia

- Elaboration of the technical proposal submitted to the Client (international tender);
- Field survey, investigation of initial data and elaboration of initial conditions report;
- Elaboration of process technical documentation, part of the basic design package: plant layout, PDS, defining and estimation of chemicals requirements, PFD, technical lists, definition of laboratory analyses and requirements;
- Revision of design package: PFD and technical lists; PID; PDS, PPD.

Wastewater treatment plant upgrade at inorganic pigments manufacturing company, Romania

- Field survey and evaluation of existing wastewater sources and equipment;
- Sources characterization by means of laboratory analyses; the investigations was conducted in Client's laboratory together with Client's specialised personnel;
- Elaboration of laboratory report;
- Development of preliminary technical documentation (layout, PFD, PDS, technical list, MB calculation and estimation of chemicals requirements) for two scenarios proposed based on results of laboratory investigations, part of the feasibility study;
- Elaboration of the technical documentation for the feasibility study (PPD, definition of operational parameters);
- Experimental investigations - pilot scale to identify optimum operational parameters of selective processes.

Wastewater treatment plant upgrade at SC Azur SA, paintings and coatings manufacturing company, Romania

- Elaboration of laboratory report;
- Elaboration of the technical documentation for the feasibility study.

Consultancy services for the elaboration of technical and economical documentation for the realization of a biogas plant, Romania

- Elaboration of process and plant description, part of the pre-feasibility study and feasibility study;
- Development of basic design package together with team Ludan Renewable Energy SL Spain;
- Development of process documentation for the technical project, including Mounting of equipment engineering package;
- Technical evaluation of the bids received from Contractors (international bidding process) in order to support the Contracting Authority to select and appoint a Contractor.

Dates: 2010 –2013
Title of qualification: **Postdoctoral researcher in the field of Chemical Engineering**
Project: Nanostructured composite materials used in food and pharmaceutical industry for controlled release of active substances: experimentation and mathematical modelling

Dates/Position: 2011 – 2012/ **Lecturer**
2006 – 2011 / **Assistant professor**

Company: **University Politehnica of Bucharest, Faculty of Applied Chemistry and Material Science, Chemical and Biochemical Engineering Dept., Romania**

Company description: University Politehnica of Bucharest is the largest and the oldest technical university in the country and among the most prestigious universities in Romania (www.pub.ro)

Main activities and responsibilities:

- Teaching courses:
 - Biotechnologies
 - Unit operations in food processing industry
- Teaching seminars:
 - Heat and Mass Transfer Fundamentals
 - Unit Operations and Industrial Equipment (Chemical/Biochemical Field)
 - Bioengineering and Biotechnology
- Supervising students' projects:
 - Design of Distillation Columns
 - Heat Exchangers
- Researches as a team member of more than 10 RDI (research/development/innovation) national projects and as a project director for two RDI projects

Dates: 2003 – 2006
Position: **Chemical engineer**
Company: **SC ICTCM SA Mechanical Engineering and Research Institute, Bucharest, Romania**
(www.ictcm.ro)

Company description: Engineering/Research&Development in the field of automotive industry

Main activities and responsibilities: Member of the Metallic Plating research team. As a member of this team, I have worked at the development of:

- Researches and studies for modernization and retechnologization of metal surface protection shops and industrial wastewater treatment facilities;
- Conceptual design of galvanic wastewater treatment plants;
- Process design of galvanic wastewater treatment plants.

Projects:

- New treatment technologies – heavy metal recovery from galvanic waste (2003 – 2005);
- Identification and evaluation of activity and plant that use organic solvents with organic volatile compounds content possibilities of conformation with 1999/13/EC Directives requirements concerning organic volatile compounds emission limits in some plants and activities (2003 – 2006);
- New treatment technologies of galvanic waste with heavy metals content, in accordance with new UE Romanian integration impose requirements (2004 – 2006);
- Galvanic wastewater treatment stations modernization using ecological methods, in accordance with new UE Romanian integration impose requirements (2004 – 2006).

Education

Dates:	2004 – 2009
Institution:	Doctor in the field of <i>Chemical Engineering</i> Faculty of Applied Chemistry and Material Science, University Politehnica of Bucharest, Romania
Researches summary:	<p>The main scope of the research was the development of new technologies for advanced bioproducts separation.</p> <p>The early stage of doctoral programme included exams in the field of: <i>Mass transfer basics, Chemical and biochemical kinetics for reactions in liquid media</i>, and preparation of essays on the following topics: <i>Membrane bioreactors, Multifunctional bioreactors for liquid media processing, Liquid-liquid extraction technologies.</i></p> <p>Ph. D. Thesis, entitled <u>Chemical and Biochemical Processes with Transfer through Liquid-Liquid Interface</u> represents an applied study (experimental, modelling and simulation) concerning acetic acid fermentation and separation from fermentation broth. Efficient separation was obtained by coupling of liquid-liquid extraction with three different techniques for solvent recovery and recycling, in order to minimise process costs. Among the objectives of the study, the following can be mentioned:</p> <ul style="list-style-type: none">- Development and testing of new experimental laboratory setups, where liquid-liquid extraction is coupled with solvent recovery and recycling by stripping, simple pseudo-continuous distillation, and fractional distillation; an accurate evaluation of physico-chemical properties of contacting media, operating parameters (temperature, organic phase flow) and some observations regarding contacting phases hydrodynamics (number of solvent drops dispersed in the extraction and reextraction columns, drop size and ascending time) were considered;- Testing different type of solvents (pure solvents or mixtures), to increase process efficiency and safety of operation;- Development and validation by means of experimental data and using specialized mathematical programs for solving (MathCAD), of new mathematical models, based on transport phenomena equations that describe the dynamic operation of the plants;- Apply the mathematical model in order to determine the best start-up policy for the distillation column.

Dates:	2003 – 2004
Title of qualification awarded:	Master of Science in the field of <i>Advanced Separation and Purification in Industrial Chemistry</i> (valedictorian, GPA 9.90/10, project 10/10)
Institution:	Faculty of Industrial Chemistry, University Politehnica of Bucharest, Romania
Main subjects:	Mass Transfer Intensification, Modelling and Simulation of the Separation Processes Hydrodynamics of Mass Transfer Units
Graduating project:	<i>Acetic acid extraction from the fermentation broth – experimentation and modelling</i>

Dates:	1998 – 2003
Title of qualification awarded:	Engineer in the field of <i>Biochemical Engineering</i> (valedictorian, GPA 9.36/10, project 10/10)
Institution:	Faculty of Industrial Chemistry, University Politehnica of Bucharest, Romania
Main subjects:	Chemical Engineering, Transfer Phenomena, Unit Operations and Industrial Equipments, Chemical and Biochemical Technologies, Biochemical Reactors
Graduating project:	<i>Part I: Interparticle interaction influence on pulverulent biomaterials fluidization; Part II: Bioethanol from lignocellulosic materials, plant design</i>

Dates:	1994 – 1998
Institution:	Ion Brătianu National College, Pitești, Romania
Principal subjects:	Mathematics, Physics, Informatics

Personal skills and competences

Foreign languages: **English – advanced**
 Russian – beginner

Organisational skills: hard working, responsible person
 fast learner with good work management
 ability to work independently or as a team member

Computer skills and competences *MS Office*: Word, Excel, PowerPoint
 Specialised programs: MathCAD, Microcal Origin, etc.
 Graphics: Adobe Photoshop, Corel Draw
 Vectorial graphics: AutoCAD 2D, Mechanical Desktop

Additional information

Publications: Co-author of journal articles
 Co-author of one book and two book chapters
 More than 30 participations at Professional Conferences

Patent requests: Polymeric Matrix Composite used as building thermal insulation, Romania a 2010 00532
 Microbiological method to remove the heavy metals from galvanic waste waters, Romania
 A/00280/2004

Awards: 4 international awards as team member for the research ***Microbiological method to remove the heavy metals from galvanic waste waters:***
 Gold medal, ARCA, Medunarodna izlozba inovacija, proizvoda i tehnologija - ZLATNA ARCA - Zagreb, 2007;
 Silver Medal - INVENTIKA Bucharest, 2007;
 Silver Medal, 53EME Salon Mondial De L'invention, De La Recherche Et Des Nouvelles Technologies, Bruxelles, 2004;
 Gold Medal, Salon International Des Inventions Geneve, 2003.

Organisations: Member of Romanian Society of Chemical Engineering

Driving licence: B category