

Gheorghe BUMBAC

University "POLITEHNICA" Bucharest
Faculty of Applied Chemistry and Materials Science
Department of Chemical Engineering



Contact information

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Education and training

Dates	1979 – 1984
Title of qualification awarded	Chemical engineer
Principal subjects/occupational skills covered	engineer
Name and type of organisation providing education and training	University "Politehnica" Of Bucharest (Former Polytechnic Institute Of Bucharest)
Dates	1997- 1998
Title of qualification awarded	Postgraduate Diploma (in romanian: Diploma de studii Aprofundate)
Principal subjects/occupational skills covered	Computer tools in chemical engineering
Name and type of organisation providing education and training	University "Politehnica" Of Bucharest
Dates	1999
Title of qualification awarded	PhD diploma
Principal subjects/occupational skills covered	Physical-Chemistry
Name and type of organisation providing education and training	University "Politehnica" Of Bucharest

Professional experience

Dates	1984-1986
Occupation or position held	Process development engineer
Main activities and responsibilities	Studies for implementation of new technologies for the factory, including energy saving Managing implementation of investment projects
Name and address of employer	Rubber Technical Articles Factory <i>DANUBIANA, BUCHAREST</i>
Type of business or sector	Industrial production of rubber production
Dates	09/86 - 02/97
Occupation or position held	Process Chemical Engineer

Main activities and responsibilities	Ammonia, Fertilisers, Soda Ash Processes Analysis For Retrofit, Developments And Design
Name and address of employer	Chemical Process Design Iprochim, Bucharest
Type of business or sector	Chemical engineering
Dates	02/97 - 09/2000
Occupation or position held	Research Engineer In The Department Of Chemical Engineering
Main activities and responsibilities	Research In Chemical Engineering, Teaching Basis Of Chemical Engineering, Computers Applied In Chemical Engineering, Rational Use Of Energy
Name and address of employer	University "Politehnica" Of Bucharest (Former Polytechnic Institute Of Bucharest)
Type of business or sector	Educational and research services
Dates	09/2000 - 09/2004
Occupation or position held	Lecturer In The Department Of Chemical Engineering
Main activities and responsibilities	Teaching And Research Basis Of Chemical Engineering, Mathematics Applied In Chemical Engineering, Mass Transfer, Computers Applied In Chemical Engineering, Efficient Use Of Process Simulation And Process Integration Techniques For Energy Saving And Pollution Reduction In Process Industries, Computer Aided Design, Information Systems For Process Industries, Information Systems In Universities
Name and address of employer	University "Politehnica" Of Bucharest
Type of business or sector	Educational and research services
Dates	09/2004 - NOW
Occupation or position held	READER IN THE DEPARTMENT OF CHEMICAL ENGINEERING
Main activities and responsibilities	<i>Teaching</i> : basis of chemical engineering, mathematics applied in chemical engineering, mass transfer operations, computers applied in chemical engineering, efficient use of process simulation and process integration techniques for energy saving and pollution reduction in process industries, process modelling and simulation <i>Research</i> : analysis of process plants for better use of raw materials, energy and pollution reduction, new methodologies in engineering education, information systems for university management, modelling and simulation of process equipment and plants
Name and address of employer	University "Politehnica" Of Bucharest
Type of business or sector	Educational and research services

Academic and research interests

Engineering Education
Energy Technologies
Process intensification, integration and optimization
Computer aided process engineering
Optimization of integrated biorefineries and logistical fuel processing systems
Sustainable and environmentally benign technologies
Process and product design

Teaching activity

<i>Studies</i>	<i>The name of Programme</i>	<i>Code</i>	<i>Course title</i>	<i>Activity type</i>
Bachelor		UPB.11.S.08.O.514	Instrumente informatice ingineria proces	în de

	UPB.11.S.08.O.515	Proiectarea instalațiilor chimice și biochimice
	UPB.11.S.08.O.516	Activitate proiect licență
Master	UPB.11.S.11.O.201	Procedee de separare avansata
	UPB.11.S.11.O.203	Proiectarea instalațiilor in industriile de proces
	UPB.11.T.12.O.207	Cercetare stiintifica

Publication (selective):

Relevant books

(in romanian)

V. Pleșu, T. Danciu, R. Isopescu, P. Iancu, **G. Bumbac**, *Aplicații de programare pentru inginerii chimiști* (Title in english: *Programming applications for chemical engineers*), editura BREN, București 1999 , ISBN 973-9493-20-3;

Relevant articles

1. **G. BUMBAC**, V. PLESU, P. IANCU, D. BAETENS, *CATALYTIC REFORMING PLANT SIMULATION FOR ENERGY SAVING AND RATIONAL PRODUCTION OF HYDROGEN*, AIDIC CONFERENCE SERIES, VOL 5, PP71-78, 2002.
2. Gr. Bozga, **G. Bumbac**, V. Plesu, I. Muja, D. C. Popescu, *Modelling and Simulation of Kinetics and Operation for the TAME Synthesis by Catalytic Distillation*, European Symposium on Computer Aided Process Engineering, **ESCAPE – 13**, A. Kraslawski and I. Turunen (Editors), Elsevier, 2003, pp. 575- 580.
3. **G. Bumbac**, V. Plesu, I. Ivanescu, D.C. Popescu, *Retrofit solution for n-parafines from gasoline isomerisation plant using process simulation and process integration*, Poster no. 00456, 53rd Canadian Chemical Engineering Conference, 6th Conference on Process Integration Modelling and Optimisation of Energy Saving and Pollution Reduction **PRES2003**, Hamilton, Ontario, Canada, 27- 30 Octombrie 2003
4. **G. Bumbac**, V. Plesu, C. Ciornei, *Hydrogen Storage In Metallic Hydride. Modeling of Hydrogen Discharge Step*, **H2-Age:When Where Why**, Pisa, Italy, 16-19 may 2004, ISBN 88-900775-3-0.
5. J. DE Ruyck, E. Lacatus, **G. Bumbac**, V. Plesu, V. Lavric, *Combined process integration of chemical reactors energy and pinch analysis to improve the ammonia plant energetic performances*, 7th World Congress of Chemical Engineering, 10-14 July 2005, Glasgow, Scotland,
6. C. Ciornei, **G. Bumbac**, V. Plesu, **Modelling and Simulation of Operation for the TAME Synthesis by Catalytic Distillation**, European Symposium on Computer Aided Process Engineering, **ESCAPE – 15**, L. Puigjaner and A. Espuña (Editors) © 2005 Elsevier Science B.V.

Some research projects

1. “Implementation of a Technology Transfer Centre for Process Industries in University "POLITEHNICA" of Bucharest” CONTRACTOR, TEMPUS CME PROJECT NO. CME-03064-97, 1998 –1999, PARTNERS : UPB, UMIST, HYPROTECH EUROPE, UNIVERSITAT POLITECNICA DE CATALUNYA – BARCELONA, SNP PETROM.
2. “Sustainable Development by Retrofit and Debottlenecking for Energy Based Systems - REDBAS” SCIENTIFIC DIRECTOR, COPERNICUS PROJECT, ERB IC15-CT98-0506, 1999 – 2001. PARTNERS: UPB, UMIST, SNP

PETROM, REFINERY ASTRA ROMÂNĂ, TECHNICAL UNIVERSITY BRNO (CZ), KHARKOV STATE POLYTECHNIC UNIVERSITY (UA), EVECO (CZ), VITO (B).

3. “*INTRODUCTION OF CHEMICAL PINCH AND APPLICATION IN PETROCHEMICAL INDUSTRIES*”, MEMBER OF EXECUTIVE TEAM, BILATERAL COLLABORATION PROJECT ROMANIA – BELGIUM, CO-FUNDED BY THE MINISTRY OF FLEMISH COMMUNITY AND ROMANIAN RESEARCH AGENCY. 2000-2002. PARTNERS: VRIJE UNIVERSITEIT BRUSSEL, VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZUG, UPB- CTTIP.
4. “*INTELLIGENT COLUMN INTERNALS FOR REACTIVE SEPARATIONS- INTINT*”, MEMBER OF TEAM FOR UPB, FRAMEWORK PROGRAMME V PROJECT IN COMPETITIVE AND SUSTAINABLE GROWTH PROGRAMME, GRD1-1999-10596, 15 EUROPEAN PARTNERS, CONTRACTOR UNIVERSITY OF DORTMUND (D), 2000 – 2002.