

# Curriculum Vitae

## Personal information

Surname / First name

Address

Telephone

E-mail

Nationality

Date of birth

Gender

**Cormos Calin - Cristian**

Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering,  
Arany Janos 11, RO-400028, Cluj – Napoca, Romania

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calin.cormos@ubbcluj.ro

Romanian

08.04.1971

Male

## Research fields

**Chemical Engineering, Chemical Reaction Engineering, Process Design and Integration, Computer Aided Process Engineering (CAPE), Energy Conversion Processes, Gasification, Carbon Capture and Storage (CCS), Clean Coal Technologies, Renewable Energy Sources, Hydrogen Production, Environmental Evaluations of Energy Conversion Processes, LCA Analysis**

## Work experience

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and responsibilities

October 2004 – present

Professor (October 2015 – Present)

Assoc. Prof. Eng. (February 2009 – September 2015)

Lecturer PhD Eng. (October 2004 – February 2009)

Research activities in chemical reaction engineering, mathematical modeling, simulation and optimization of chemical and thermo-chemical processes, Computer Aided Process Engineering (CAPE), process synthesis and design, techno – economic assessments, process integration, gasification, carbon capture technologies. Teaching courses, seminars and laboratory work for the following academic disciplines: “*Integrated design of chemical processes*”, “*Thermal integration and pinch technology*”, “*Chemical Reaction Engineering - Parts I and II*”.

Faculty of Chemistry and Chemical Engineering, Babes – Bolyai University, Arany Janos No. 11, Cluj – Napoca, Romania

Academic and Research

December 2005 – October 2007

Contractual Scientific Officer

Techno-economic evaluation of energy conversion processes based on fossil fuels with CO<sub>2</sub> capture and storage – FP6 Integrated Project Dynamis: „Towards hydrogen and electricity production with CO<sub>2</sub> capture and storage” (Project no. 019672, [www.dynamis-hypogen.com](http://www.dynamis-hypogen.com)).

Techno-economical evaluation of CO<sub>2</sub> capture and storage (CCS) technologies, hydrogen production processes, coal and lignite gasification processes, renewable energy sources, improving energy efficiency, combined heat and power.

European Commission, DG Joint Research Centre, Institute for Energy, Westerduinweg 3, Petten, The Netherlands

Research area: Energy and Environment

October 2001 – March 2004

Products Development Manager, Chemical Division

Managing the Products Development Department – Chemical Division, coordinating research activities regarding synthesis of active pharmaceutical ingredients (API), regulatory affairs and elaboration of Drug Master File (DMF) for synthesized API, setting-up and accomplishment of the research plan for the chemical division (laboratory and pilot phases, application at industrial scale)

Name and address of employer	S.C. Terapia S.A., Fabricii 124, Cluj – Napoca, Romania
Type of business or sector	Pharmaceutical and chemical industry, Research area: Organic chemistry and Chemical eng.
Dates	May 2001 – October 2001
Occupation or position held	Technical Department for Synthesis Manager, Chemical Division
Main activities and responsibilities	Managing the Technical Department for Synthesis – Chemical Division, coordinating research activities regarding synthesis of active pharmaceutical ingredients (API), regulatory affairs and elaboration of Drug Master File (DMF) for synthesized API, verification of standard operation procedures (SOP), writing techno – economic reports and feasibility studies for synthesis processes of pharmaceutical ingredients
Name and address of employer	S.C. Terapia S.A., Fabricii 124, Cluj – Napoca, Romania
Type of business or sector	Pharmaceutical and chemical industry, Research area: Organic chemistry and Chemical eng.
Dates	May 1998 – May 2001
Occupation or position held	Chemical Engineer, Technical Department Manager Assistant
Main activities and responsibilities	Regulatory affairs for pharmaceutical products, research activities for synthesis of active pharmaceutical ingredients (API), elaboration of standard operation procedures (SOP) for synthesis processes, registration of company's patents to the Romanian National Office for Patents (OSIM), analyzing raw material and utilities consumptions of chemical synthesis processes
Name and address of employer	S.C. Terapia S.A., Fabricii 124, Cluj – Napoca, Romania
Type of business or sector	Pharmaceutical and chemical industry, Research area: Organic chemistry and Chemical eng.
Dates	September 1995 – May 1998
Occupation or position held	Chemical Engineer, Pantolactone Plant Manager, Calcium Pantothenate Plant
Main activities and responsibilities	Managing the pantolactone synthesis plant, supervision of the plant and the working personal, writing of technical reports and standard operation procedures (SOP) for pantolactone plant, inventory of raw materials and finite product, research for process and plant improvements
Name and address of employer	S.C. Terapia S.A., Fabricii 124, Cluj – Napoca, Romania
Type of business or sector	Pharmaceutical and chemical industry, Research area: Organic chemistry and Chemical eng.

## Education and training

Dates	October 1997 – January 2004
Title of qualification awarded	PhD
Principal subjects/Occupational skills covered	Mathematical modeling and simulation of racemic calcium pantothenate synthesis
Name and type of organisation providing organisation and training	Faculty of Chemistry and Chemical Engineering, Babes – Bolyai University, Cluj – Napoca, Romania
Dates	July 2005
Principal subjects/Occupational skills covered	Basic heat integration, applications in energy systems with CAPE instruments
Name and type of organisation providing organisation and training	Prof. Jiri Klemes and Simon Perry, Centre for Process Integration, University of Manchester, UK
Dates	February 2005
Principal subjects/Occupational skills covered	Creativity support tools and methods in process engineering
Name and type of organisation providing organisation and training	Prof. Andrzej Kraslawski, Lappeenranta University of Technology, Finland
Dates	February 2005
Principal subjects/Occupational skills covered	Modeling of turbulent reacting flow and coupling of CFD with micromixing and population balance
Name and type of organisation providing organisation and training	Prof. Antonello Baresi, Politecnico di Torino, Torino, Italy

Dates	July 2004 – September 2004
Principal subjects/Occupational skills covered	Model Predictive Control and Hybrid Systems
Name and type of organisation providing organisation and training	Eidgenössische Technische Hochschule (ETH), Institut für Automatik, Zurich, Switzerland
Dates	January 2002
Principal subjects/Occupational skills covered	The fundamentals of finance for non-financial manager
Name and type of organisation providing organisation and training	Management Centre Europe, Brussels, Belgium
Dates	November 2001 – May 2002
Principal subjects/Occupational skills covered	The Effective Manager, Course: BZT 654
Name and type of organisation providing organisation and training	The Open University Business School, Great Britain – Codecs, Romania
Dates	October 2001
Principal subjects/Occupational skills covered	Project Management
Name and type of organisation providing organisation and training	Centre for Development in Management, Cluj – Napoca, Romania
Dates	May 1999
Principal subjects/Occupational skills covered	Hazard and Risk in Chemical Industry
Name and type of organisation providing organisation and training	Ph.D. Eng. Stefano Boy, Snamprogetti, Italy
Dates	July 1999
Principal subjects/Occupational skills covered	Patent – from idea to profit
Name and type of organisation providing organisation and training	Cluj Chamber of Commerce, Industry and Agriculture, Cluj – Napoca, Romania
Dates	February 1999
Principal subjects/Occupational skills covered	ChemCAD – a tool for modeling and simulation of chemical processes
Name and type of organisation providing organisation and training	Prof. Ph.D. Eng. Kovan Moser, Veszpremi University, Hungary
Dates	October 1995 – June 1996
Title of qualification awarded	Master of Science
Principal subjects/Occupational skills covered	Catalytic and bio-catalytic processes
Name and type of organisation providing organisation and training	Faculty of Chemistry and Chemical Engineering, Babes – Bolyai University, Cluj – Napoca, Romania
Dates	September 1990 – June 1995
Title of qualification awarded	Bachelor of Science
Principal subjects/Occupational skills covered	Chemical Engineering, Technology of Organic Substances

Name and type of organisation providing organisation and training

Faculty of Chemistry and Chemical Engineering, Babes – Bolyai University, Cluj – Napoca, Romania

## Personal skills and competences

Research activities and field of competences

Chemical reaction engineering, process design, process integration, heat and power integration, Computer Aided Process Engineering (CAPE), mathematical modeling and simulation of chemical and thermo-chemical processes, control and optimization of chemical processes, retrofit of chemical processes, energy conversion processes, CO<sub>2</sub> capture and storage, hydrogen production processes, gasification processes, energy vectors poly-generation, clean coal technologies, renewable energy sources

Mother tongue

**Romanian**

Other languages

Self-assessment

European level (\*)

**English**

**French**

**German**

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C1	C2	C1	C1	C1
B2	C1	C1	B2	C1
A2	A2	A1	A1	A2

(\*) Common European Framework of Reference (CEF) level

Social skills and competences

Teamwork, interpersonal skills, communication, responsibility

Organisational skills and competences

System thinking, problem identification, problem solving, planning skills, foresight planning, resources management, time management

Technical skills and competences

System theory, Computer Aided Design (CAD), Computer Aided Process engineering (CAPE), process control, modelling, simulation and optimization, numerical programming, process engineer

Computer skills and competences

Technical software: MATLAB / SIMULINK, Comsol, LabVIEW  
Chemical specific software: ChemCAD, Aspen, HYSYS, Pro II  
Energy related specific software: Thermoflex, GT Pro, IPSE Pro, Cyclo-Tempo  
Life Cycle Assessment (LCA): GaBi

## Additional information

Publications: 3 books / chapters, 200 scientific papers (3005 citations, Hirsch index 33), 1 patent

Project director / responsible for national and international research projects e.g.: Horizon 2020 project "SEWGS - Technology platform for cost effective CO<sub>2</sub> reduction in the iron & steel industry"; ERANET Co-fund Advanced Carbon Capture Technologies (ACT) projects; FP6 project "Dynamis: Towards hydrogen and electricity production with CO<sub>2</sub> capture and storage"; bilateral project Romania - Switzerland "Advanced thermo-chemical looping cycles for the poly-generation of decarbonised energy vectors: Material synthesis and characterisation, process modelling and life cycle analysis"; Ideas exploratory research projects "Innovative methods for chemical looping carbon dioxide capture applied to energy conversion processes for decarbonised energy vectors poly-generation"; studies done for European Commission "Conceptual design of typical power plant configurations for the estimation of reference capital costs including material" and "Analysis of hydrogen and power (HYPOGEN)-type power plant" etc.

Expert and project evaluator: UEFISCDI, Romania; Bulgarian National Science Fund, Bulgaria; Energy and carbon capture and storage expert, European Commission, DG-JRC, Institute for Energy; IEA Clean Coal Center; FP7 / Horizon 2020 / Horizon Europe project evaluator – Energy & CCUS panel; National Center of Science and Technology, Republic of Kazakhstan etc.

Scientific referent for ISI-ranked journals: International Journal of Hydrogen Energy; Energy; International Journal of Greenhouse Gas Control; Industrial & Engineering Chemistry Research; Fuel Processing Technology; Environmental Science & Technology; Energy & Fuels; Fuel; Journal of Cleaner Production; Applied Thermal Engineering; Clean Technologies and Environmental Policy; World Journal of Modeling and Simulation; Studia Universitatis - Seria Chemia etc.