PERSONAL INFORMATION

Ana-Maria Cormoș

Arany Janos 11, Cluj-Napoca, cod 400028, Cluj-Napoca, Romania

40-264-593833 40-722-854766

ana.cormos@ubbcluj.ro

chem.ubbcluj.ro

Date of birth 11/06/1973 | Nationality Romanian

POSITION

Professor

WORK EXPERIENCE

September 2002 - onwards

Professor (Feb. 2023 - onwards), Associate Professor (Oct. 2014 – Feb, 2023), Lecturer (Oct. 2007-Sept. 2014), Teaching Assistant (Sept. 2002 – Sept. 2007)

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

- Teaching the courses and laboratory work for the following academic discipline: “Computers Programming with Application in Chemical Engineering “, “Modeling and Simulation of Chemical Processes”, “Dynamic Analysis of Complex Processes “, “Chemical Engineering Reactions”, “Computer using in chemical research”
- Research interests: Computer Aided Process Engineering (CAPE), Modelling and simulation chemical/bio-chemical processes, Carbon Capture, Utilization and Storage (CCUS) technologies, Heterogenous systems (gas-liquid, gas-solid, gas-solid-liquid), Chemical / calcium looping, Reforming and gasification, Hydrogen production, Energy vectors poly-generation, Techno-economic and environmental impact evaluations.

November 1998 - May 2005

PhD student

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

- PhD Thesis:Modeling and Simulation of Limestone Decomposition in Vertical Lime Kiln with coke

October 1996- October 1998

Research Assistant

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

- Modeling and Simulation of Chemical Processes; Computer Applications in Chemistry and Chemical Engineering

EDUCATION AND TRAINING

February, 2022

Habilitation

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

- Integrated assessment of innovative CO_2 capture processes using dynamic modeling and techno-economic evaluation

November 1, 1998 - May 11, 2005

PhD

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

- Modeling and Simulation of Limestone Decomposition in Vertical Lime Kiln with coke

May 2014

Training courses

“GaBi Training - Energy conversion processes”, PE International, Vienna, Austria;

September 2007

Training courses

“COMSOL Multiphysics”, COMSOL, Inc., Zoetermeer, Holland;

February 2007 — Training courses

"Creativity support tools and methods in process engineering", CAPE Forum 2005 and Lappeenranta University of Technology, Finland;

December 2007 — Academic stage

Automatic Control Laboratory, ETH Zurich, Switzerland

- Development of application for courses using Excel and Matlab in case of Modeling and Simulation of Chemical Processes; Computer Applications in Chemical Research

July 2005 — Training courses

"Basic heat integration, applications in energy systems with CAPE instruments", Centre for Process Integration, Manchester University, UK; TTIP Center, Politehnica Bucureşti;

December 2005 — Training courses

"Workshop ChemCAD", organized by: Nor.Par. Norway and Etvos Lorant University, Budapest, Hungary.Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj-Napoca, Romania

February 17- August 16, 2003 — Research stage

ETH Zurich, Switzerland, Institute of Process Engineering, Group of Advanced Separation Processes

- Numerical approaches for population balance equations: Implementation of the moving pivot technique developed by Ramkrishna into a Fortran equation solver program. Case study: barium sulfate precipitation process
  Contact person: Prof. Marco Mazzotti

February 11 - April 10, 2002 — Research stage

University of Technology in Vienna, Austria, Group of Gas - Solid Process

- Simulation of the Scrubbing Unit of Waste Incineration Plant, Contact Person: Prof. Anton Friedl

October 1997- June 1998 — Master of science

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

- Specialization: Interface Process Engineering

October 1991- June 1996 — Bachelor of Science

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

- Specialization: Chemistry - Physical

PERSONAL SKILLS

Mother tongue(s): Romanian

Other language(s): English

Communication skills: Teamwork, communication and interpersonal skills, responsibility

Management skills: Scheduling of work tasks, Management of human and financial resources, Reporting technical and financial results

Computer skills: Microsoft Office (Word, Excel, PowerPoint), Corel Draw, ChemWin
MATLAB/SIMULINK, COMSOL Multiphysics, Fortran, ChemCAD, Aspen

ADDITIONAL INFORMATION

Publications

2 books (co-author), over 130 scientific papers (60 - highly visible ISI indexed journals, 51 - ISI conferences proceedings and 18 - conferences proceedings IDB, etc); Hirsch index: 21;

Supervision of students and young researchers

- The scientific guidance of 5 PhD students and over 35 students (MSc and BSc levels) to prepare their PhD / BSc / MSc thesis;
- Coordinated the students' research to obtain scholarships / awards / participation in events (5 performance scholarships offered by UBB, 1 grant from World Federation of Scientists in Geneva Switzerland, 10 awards at student conferences, 17 participation to international conferences);
- Publication of the results from bachelor and master thesis in 15 articles ISI (10 articles with IF >4), 14 proceeding ISI and 3 proceeding indexed IDB.
- Publication of the results from PhD thesis in 14 articles ISI (5 articles with IF >4) and 18 proceeding ISI.

Projects

▪ Project manager:
- Integrating process intensification methods with advanced control strategies for improved performance of CO_2 capture systems, Project ID: PN-III-P4-ID-PCE-2020-0632, 2021-2023, Budget: 250000 Euro;
- Demonstration of Gas Switching Technology for Accelerated Scale-up of Pressurized Chemical Looping Applications (GaSTech), ERA-Net Cofund ACT, No 91/2017, Budget: 200000 Euro;
- Dynamic simulation of a post-combustion CO2 capture pilot with assessment of solvent degradation, Mobility project, Project ID: PN-III-P3-3.1-PM-RO-BE-2016-0008, 2017-2018, Budget: 4000 Euro;
- The improving of the technical- economic performance and reduction of environmental impact of chemical processes using mathematical modeling and simulation of the processes using computers CNCSIS AT 2006 – Them 3, COD 7, Budget: 6000 Euro.

▪ Member in the research teams (17 national projects, 7 international projects, 2 industrial projects); Selected Projects:
- 3D-CAPS: Three-Dimensional Printed Capture Materials for Productivity Step-Change, ERA-Net Cofund ACT, No 87/2017.
- Developing innovative low carbon solutions for energy-intensive industrial applications by Carbon Capture, Utilization and Storage (CCUS) technologies, CNCS – UEFISCDI, project ID: PN-III-P4-ID-PCE-2016-0031.
- Optimization and validation of the CO2 capture demonstrative pilot installation by chemical absorption technology, CNCS – UEFISCDI, project ID: PN-III-P2-2.1-PED-2016-0558
- SEWGS Technology Platform for cost effective CO_2 reduction the in the Iron and Steel Industry (STEPWISE), Project ID 640769, Horizon 2020.

Institutional and administrative activities

- Team member in the admission committee to undergraduate and master's education;
- Elaboration of the evaluation documentation for a research centre in the field of Computer Aided Process Engineering, at faculty level;
- Co-author of a study to evaluate the utility consumptions (i.e., natural gas, water, electricity, etc.) of the Babes-Bolyai University;
- Co-author of a study on National System for Research, Development and Innovation in the context of integration in the European Research Area, 2006;
- Expert and project evaluator for a national organization: UEFISCDI, Romania;

Invited speaker

- University of Dortmund, Germany, Laboratory of Fluid Separations, September, 2011,
Topic: Energy conversion with CO_2 capture;
- ETH Zurich, Switzerland, Laboratory of Energy Science and Engineering, July 2013,
Topic: Mathematical modeling and dynamic simulation of CO_2 capture process;
- Université de Liège, Chemical Engineering Department, Liege, Belgium, June 2017, Topic: Modeling & simulation of energy conversion systems with CCS;

Scientific referent

Energy; International Journal of Greenhouse Gas Control; International Journal of Hydrogen Energy; Industrial & Engineering Chemistry Research; Fuel Processing Technology; International Journal of Refrigeration; Environmental Science & Technology; Energy & Fuels; Fuel; Journal of Cleaner Production; Applied Thermal Engineering; Resource Conservation and Recycling; Studia Universitatis - Seria Chemia etc.

Professional Affiliation

Member of Romanian Chemical Engineers Society;

Profile address

Scopus: https://www.scopus.com/authid/detail.uri?authorId=8450482900
ORCID: https://orcid.org/0000-0003-0832-0722