

## PERSONAL INFORMATION



## Stefan Cristian Galusnyak

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

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Sex Male | Date of birth 19/08/1995 | Nationality Romanian

## WORK EXPERIENCE

- |              |  |
|--------------|--|
| 2024-present | <b>Assistant professor</b><br>Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br>Department of Chemical Engineering  |
| 2023-present | <b>Research assistant</b><br>Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br>Research project: Calcium looping to capture CO2 from industrial processes by 2030 (CaLby2030), HORIZON Europe Framework Programme, Nr. 101075416                              |
| 2022-present | <b>Research assistant</b><br>Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br>Research project: Renewable Energy based seasonal Storage Technology in Order to Raise Economic and environmental sustainability of DHC (RESTORE), HORIZON 2020, Nr. 101036766 |
| 2021-present | <b>Research assistant</b><br>Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br>Research project: Advanced thermo-chemical systems for flexible low-carbon energy generation and storage applications, PN-III-P4-ID-PCE-2020-0032                              |
| 2020-2022    | <b>Research assistant</b><br>Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br>Research project: CarbON Valorisation in Energy-efficient Green fuels (CONVERGE), HORIZON 2020, Nr. 818135   |
| 2019-2020    | <b>Chemical engineer</b><br>Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br>Research project: CarbON Valorisation in Energy-efficient Green fuels (CONVERGE), HORIZON 2020, Nr. 818135  |

## EDUCATION AND TRAINING

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|-----------|--|
| 2020-2024 | <b>Doctor of Philosophy (PhD) in Chemical Engineering</b><br>Doctoral School of Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br><ul style="list-style-type: none"> <li>▪ Environmental impact assessment of energy intensive industrial processes using Life Cycle Assessment methodology</li> </ul> |
| 2018-2020 | <b>Master's Degree</b><br>Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania<br><ul style="list-style-type: none"> <li>▪ Environmental assessment of biodiesel production process using LCA methodology</li> </ul>  |

- 2018-2020 **Teacher training module**  
Teacher Training Department, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania
  - Second (2<sup>nd</sup>) level
- 2014-2018 **Bachelor degree**  
Faculty of Chemistry and Chemical Engineering, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania
  - Mathematical modelling and design of the primary reforming reactor, an integral part of an ammonia production plant with a capacity of 1200 t NH<sub>3</sub>/day
- 2014-2017 **Teacher training module**  
Teacher Training Department, Babes-Bolyai University of Cluj-Napoca, Cluj-Napoca, Romania
  - First (1<sup>st</sup>) level
- 2010-2014 **High School Diploma**  
Decebal National College, Deva, Romania

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C1	C2	C2	C2
French	A2	A2	A2	A2	A2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user  
Common European Framework of Reference for Languages

Communication skills
 

- Excellent written and verbal communication skills
- Emphatic listener and persuasive speaker

Organisational / managerial skills
 

- Analytical thinking
- Leadership
- Teamwork
- Problem solving
- Time management

Job-related skills
 

- Process modelling and simulation
- Environmental evaluation using Life Cycle Assessment (LCA) methodology

Computer skills
 

- E.C.D.L Core certification

Driving licence
 

- AM
- B1
- B

ADDITIONAL INFORMATION

Postgraduate qualifications
 

- 2021 – International Summer School for PhD Students on Methods and Technologies for Energy Transition and Climate protection, Faculty of Energy and Environmental Engineering, Department of Thermal Engineering, Gliwice, Poland

- Publications
- S.C. Galusnyak, L. Petrescu, V.-C. Sandu, C.-C. Cormos, Environmental impact assessment of green ammonia coupled with urea and ammonium nitrate production, *Journal of Environmental Management*, 2023, 343, 118215
  - S.C. Galusnyak, L. Petrescu, D.-A. Chisalita, C.-C. Cormos, M. Ugolini, From secondary biomass to bio-methanol through CONVERGE technology: an environmental analysis, *Energies*, 2023, 16, 2726
  - D.-A. Chisalita, L. Petrescu, S.C. Galusnyak, C.-C. Cormos, Environmental evaluation of hydrogen production employing innovative chemical looping technologies – A Romanian case study, *International Journal of Hydrogen Energy*, 2023, 48, 12112-12128
  - C.-C. Cormos, M. Dragan, L. Petrescu, S. Dragan, A.-M. Cormos, S.C. Galusnyak, F.M. Ilea, A.-M. Bathori, Techno-economic evaluation of synthetic natural gas production based on biomass gasification with CO<sub>2</sub> capture, *Chemical Engineering Transactions*, 2023, 103, 7-12
  - S.C. Galusnyak, L. Petrescu, C.-C. Cormos, Classical vs. reactive distillation technologies for biodiesel production: an environmental comparison using LCA methodology, *Renewable Energy*, 2022, 192, 289-299
  - S.C. Galusnyak, L. Petrescu, C.-C. Cormos, Environmental impact assessment of post-combustion CO<sub>2</sub> capture technologies applied to cement production plants, *Journal of Environmental Management*, 2022, 320, 115908
  - S.C. Galusnyak, L. Petrescu, D.-A. Chisalita, C.-C. Cormos, Life cycle assessment of methanol production and conversion into various chemical intermediates and products, *Energy*, 2022, 259, 124784
  - A. Mio, L. Petrescu, A.-V. Luca, S.C. Galusnyak, M. Fermeglia, C.-C. Cormos, Carbon dioxide capture in the iron and steel industry: thermodynamic analysis, process simulation, and life cycle assessment, *Chemical and Biochemical Engineering Quarterly*, 2022, 36, 255-271
  - S.C. Galusnyak, I.D. Dumbrava, L. Petrescu, S. Dragan, C.-C. Cormos, Assessment of CO<sub>2</sub> utilization technologies into valuable C<sub>1</sub> organic chemicals: a modelling and simulation analysis, *Chemical Engineering Transactions*, 2022, 94, 397-402
  - C.-C. Cormos, M. Dragan, C. Dinca, A.-M. Cormos, S. Dragan, I.D. Dumbrava, F.M. Ilea, S.C. Galusnyak, Economic assessment of green hydrogen production from biomass gasification with chemical absorption and membrane-based CO<sub>2</sub> capture, *Chemical Engineering Transactions*, 2022, 94, 277-282
  - S.C. Galusnyak, L. Petrescu, D.-A. Chisalita, C.-C. Cormos, Life cycle assessment of bio-methanol derived from various raw-materials, *Chemical Engineering Transactions*, 2021, 86, 667-672
  - C.-C. Cormos, S. Dragan, A.-M. Cormos, L. Petrescu, V.-C. Sandu, I.D. Dumbrava, S.C. Galusnyak, 10<sup>th</sup> international Conference on Energy and Environment (CIEM), 2021, 1-5
  - S.C. Galusnyak, L. Petrescu, C.-C. Cormos, Techno-economic and environmental assessment of hydrogen production based on natural gas steam reforming process, *STUDIA UBB CHEMIA*, 2020, 65(4), 7-19
  - L. Petrescu, S.C. Galusnyak, D.-A. Chisalita, C.-C. Cormos, Modelling and simulation of methanol and biodiesel production processes using innovative technologies, *Chemical Engineering Transactions*, 2020, 80, 181-186
  - L. Petrescu, S.C. Galusnyak, D.-A. Chisalita, C.-C. Cormos, Modelling and simulation of methanol production and conversion into various chemical intermediates and products, *Computer Aided Process Engineering (ESCAPE)*, 2020, 48, 553-558
  - S.C. Galusnyak, S. Dragan, Mathematical modelling of steam methane reforming process, *STUDIA UBB CHEMIA*, 2019, 64(4), 7-18

## Presentations

- S.C. Galusnyak, L. Petrescu, D.-A. Chisalita, C.-C. Cormos, Techno-environmental assessment of methanol production using chemical looping technologies, 15<sup>th</sup> International Conference on Sustainable Energy and Environmental Protection (SEEP – 23), London, England, 25 – 28<sup>th</sup> July 2023, oral presentation
- L. Petrescu, S.C. Galusnyak, F.A. Grozav, I.L. Arpad, C.-C. Cormos, Technical evaluation and comparison of various value-added products derived from glycerol, 18<sup>th</sup> Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES – 23), Dubrovnik, Croatia, 24 – 29<sup>th</sup> September 2023, oral presentation
- C.-C. Cormos, M. Dragan, L. Petrescu, A.-M. Cormos, S. Dragan, S.C. Galusnyak, A.-M. Bathori, Assessment of hydrogen production from sorption-enhanced biomass gasification with CO<sub>2</sub> capture feature, 18<sup>th</sup> Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES – 23), Dubrovnik, Croatia, 24 – 29<sup>th</sup> September 2023
- C.-C. Cormos, M. Dragan, L. Petrescu, S. Dragan, A.-M. Cormos, S.C. Galusnyak, F.M. Ilea, A.-M. Bathori, Techno-economic evaluation of synthetic natural gas production based on biomass gasification with CO<sub>2</sub> capture, 26<sup>th</sup> Conference on Process Integration for Energy Saving and Pollution Reduction (PRES – 23), Thessaloniki, Greece, 8 – 11<sup>th</sup> October, 2023
- S.C. Galusnyak, I.D. Dumbrava, L. Petrescu, S. Dragan, C.-C. Cormos, Assessment of CO<sub>2</sub> utilization technologies into valuable C1 organic chemicals: a modelling and simulation analysis, 25<sup>th</sup> Conference on Process Integration for Energy Saving and Pollution Reduction (PRES – 22), Bol, Croatia, 5 – 8<sup>th</sup> September 2022, oral presentation
- S.C. Galusnyak, L. Petrescu, C.-C. Cormos, Environmental impact assessment of green ammonia coupled with urea production, 17<sup>th</sup> Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES – 22), Paphos, Cyprus, 6 – 10<sup>th</sup> November 2022, oral presentation
- C.-C. Cormos, M. Dragan, C. Dinca, A.-M. Cormos, S. Dragan, I.D. Dumbrava, F.M. Ilea, S.C. Galusnyak, Economic assessment of green hydrogen production from biomass gasification with chemical absorption and membrane-based CO<sub>2</sub> capture, 25<sup>th</sup> Conference on Process Integration for Energy Saving and Pollution Reduction (PRES – 22), Bol, Croatia, 5 – 8<sup>th</sup> September 2022, poster
- L. Petrescu, A.M. Cosprundan, S.C. Galusnyak, C.-C. Cormos, Biodiesel production using various methanol sources: investigation based on process modelling and simulation tools, 14<sup>th</sup> International Conference on Sustainable Energy and Environmental Protection (SEEP – 22), London, England, 12 – 15<sup>th</sup> September 2022, oral presentation
- C.-C. Cormos, L. Petrescu, A.-M. Cormos, S. Dragan, S.C. Galusnyak, I.D. Dumbrava, F.M. Ilea, V.C. Sandu, Techno-economic and environmental assessment of cement production plants integrated with CO<sub>2</sub> capture, 16<sup>th</sup> International Conference on Greenhouse Gas Control Technologies (GHGT – 16), Lyon, France, 23 – 27<sup>th</sup> October 2022, poster presentation
- L. Petrescu, S.C. Galusnyak, C.-C. Cormos, From various bio-sources to green hydrogen production: A critical technical comparison and discussion, 13<sup>th</sup> International Conference on Hydrogen Production (ICH2P – 13), 11 – 14<sup>th</sup> December 2022, oral presentation
- S.C. Galusnyak, L. Petrescu, D.-A. Chisalita, C.-C. Cormos, Life cycle assessment of bio-methanol derived from various raw-materials, 15<sup>th</sup> International Conference on Chemical and Process Engineering (iCheap – 15), Naples, Italy, 23 – 26<sup>th</sup> May 2021, poster presentation
- S.C. Galusnyak, A.V. Luca, L. Petrescu, C.-C. Cormos, A cradle-to-gate LCA analysis of biodiesel production coupled with post-combustion CO<sub>2</sub> capture applied to cement plants, 13<sup>th</sup> International Conference on Sustainable Energy and Environmental Protection (SEEP – 21), Vienna, Austria, 13 – 16<sup>th</sup> September 2021, oral presentation
- S.C. Galusnyak, L. Petrescu, C.-C. Cormos, Environmental impact assessment of post-combustion CO<sub>2</sub> capture applied to cement production plants, 16<sup>th</sup> Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES – 21), Dubrovnik, Croatia, 10 – 15<sup>th</sup> October 2021, oral presentation
- C.-C. Cormos, S. Dragan, A.-M. Cormos, L. Petrescu, V.C. Sandu, I.D. Dumbrava, S.C. Galusnyak, Application of carbonate looping cycle as an energy-efficient decarbonization process of key fossil-intensive industrial applications, 10<sup>th</sup> International Conference on Energy and Environment (CIEM – 21), Bucharest, Romania, 14 – 15<sup>th</sup> October 2021, oral presentation

- Projects
- CarbON Valorisation in Energy-efficient Green fuels (CONVERGE), HORIZON 2020, Nr. 818135
  - Renewable Energy based seasonal Storage Technology in Order to Raise Economic and environmental sustainability of DHC (RESTORE), HORIZON 2020, Nr. 101036766
  - Advanced thermo-chemical systems for flexible low-carbon energy generation and storage applications, PN-III-P4-ID-PCE-2020-0032
  - CarbON Valorisation in Energy-efficient Green fuels (CONVERGE), Awarding participation in HORIZON 2020, PN-III-P4-ID-PCE-2020-0032
  - Calcium looping to capture CO<sub>2</sub> from industrial processes by 2030 (CaLby2030), HORIZON Europe Framework Programme, Nr. 101075416