

**Listă de publicații**  
**Prof. Dr. Ing. Cormos Calin-Cristian**

**1. Cărți**

1. **C.C. Cormos**, *Decarbonizarea combustibililor fosili solizi prin gazeificare*, Presa Universitară Clujană, 2008, 345 pp.
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**2. Articole**

1. **C.C. Cormos**, M. Sandru, C. Dinca, F.M. Ilea, A. Dudu, M.D. Lazar, N. Slavu, C. Sava, L. Petrescu, A.M. Cormos, I. Dumbrava, *Comparison of membrane-based pre- and post-combustion CO<sub>2</sub> capture options applied in energy-intensive industrial applications*, STUDIA UBB CHEMIA, LXVIII, 3, 2023 51-70
2. **C.C. Cormos**, M. Dragan, L. Petrescu, A.M. Cormos, S. Dragan, S.C. Galusnyak, A.M. Bathori, *Assessment of green hydrogen production from sorption-enhanced biomass gasification with CO<sub>2</sub> capture feature*, 18-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 24 - 29 September 2023, Dubrovnik, Croatia
3. L. Petrescu, S.C. Galusnyak, F.A. Grozav, A. Imre-Lucaci, **C.C. Cormos**, *Technical evaluation and comparison of various value-added products derived from glycerol*, 18-th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 24 - 29 September 2023, Dubrovnik, Croatia
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  6. **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-th Conference on Process Integration for Energy Saving and Pollution Reduction (PRES'23), 8 - 11 October 2023, Thessaloniki, Greece, published in Chemical Engineering Transactions, 2023
  7. **C.C. Cormos**, L. Petrescu, A.M. Cormos, S. Dragan, C. Dinca, M. Sandru, *Integration of renewable energy and CO<sub>2</sub> capture and utilization technologies for decarbonization of energy intensive process industries*, Computer Aided Chemical Engineering, 52, 2023, 2777-2784
  8. A.D. Selejan, S. Dragan, A.M. Cormos, M. Dragan, **C.C. Cormos**, *Multi-scale modeling and techno-economic analysis of biogas catalytic reforming for hydrogen & power production with CO<sub>2</sub> capture feature*, Computer Aided Chemical Engineering, 52, 2023, 1367-1372
  9. F.M. Ilea, A.M. Cormos, S. Dragan, **C.C. Cormos**, *Performance analysis of three-phase fluidized bed absorber for CO<sub>2</sub> capture industrial application*, Computer Aided Chemical Engineering, 52, 2023, 1693-1698
  10. A.D. Selejan, H. Lisei, A.M. Cormos, S. Dragan, **C.C. Cormos**, *Development of a multi-scale mathematical model for green hydrogen production via biogas steam reforming process*, International Journal of Hydrogen Energy, 2023, accepted, in press
  11. **C.C. Cormos**, *Deployment of integrated Power-to-X and CO<sub>2</sub> utilization systems: Techno-economic assessment of synthetic natural gas and methanol cases*, Applied Thermal Engineering, 231, 2023, 120943
  12. S.C. Galusnyak, L. Petrescu, V.C. Sandu, **C.C. Cormos**, *Environmental impact assessment of green ammoniacoupled with urea and ammonium nitrate production*, Journal of Environmental Management, 343, 2023, 118215

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14. F.M. Ilea, A.M. Cormos, V.M. Cristea, **C.C. Cormos**, *Enhancing the post-combustion carbon dioxide carbon capture plant performance by setpoints optimization of the decentralized multi-loop and cascade control system*, Energy, 275, 2023, 127490
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21. S.C. Galusnyak, L. Petrescu, **C.C. Cormos**, *Classical vs. reactive distillation technologies for biodiesel production: An environmental comparison using LCA methodology*, Renewable Energy, 192, 2022, 289-299
22. **C.C. Cormos**, *Decarbonization options for cement production process: A techno-economic and environmental evaluation*, Fuel, 320, 2022, 123907
23. **C.C. Cormos**, A.M. Cormos, L. Petrescu, S. Dragan, *Techno-economic assessment of decarbonized biogas catalytic reforming for flexible hydrogen and power production*, Applied Thermal Engineering, 207, 2022, 118218

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49. V. Sandu, A.M. Cormos, M. Pescaru, **C.C. Cormos**, *Modeling of the chemical-looping combustion of syngas in packed bed reactors*, 16th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), Dubrovnik, Croatia, 10-15 October 2021
50. S. Galusnyak, L. Petrescu, **C.C. Cormos**, *Environmental impact assessment of post-combustion CO<sub>2</sub> capture applied to cement production plants*, 16th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), Dubrovnik, Croatia, 10-15 October 2021
51. **C.C. Cormos**, S. Dragan, A.M. Cormos, L. Petrescu, V.C. Sandu, I.D. Dumbrava, S. Galusnyak, *Application of carbonate looping cycle as an energy-efficient decarbonization process of key fossil-intensive industrial applications*, 10th

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226. **C.C. Cormos**, S. Agachi, *Modeling and simulation the process of synthesis of D,L calcium pantothenate*, International Conference on Quality Control, Automation and Robotics Q&A-R 2000, vol. 2, page 7 - 12, Cluj-Napoca, Romania, 19 – 20 May 2000

### **3. Brevete de invenție**

1. L. Terec, G. Bora, V. Colceriu, **C.C. Cormos**, E. Cotoră, L. Lenta, M. Moga, H. Muresanu, M. Racolta, *Procedeu de purificare a 1,4 - benzochinon - guanil - hidrazon - tiosemicarbazona (ambazonă)*, WO/2005/028431 (număr brevet în România: RO122360), Aplicant: S.C. Terapia S.A., Cluj-Napoca, Romania

### **4. Proiecte de cercetare**

1. Proiect: *Calcium Looping to capture CO<sub>2</sub> from industrial processes by 2030*, Horizon Europe, 2022 – 2025, Responsabil din partea Universității Babeş-Bolyai;



2. Proiect: *Sisteme termo-chimice avansate pentru aplicații flexibile de producere și stocare a energiei cu emisii reduse de dioxid de carbon*, Proiect de Cercetare Exploratorie (PCE), PN-III-P4-ID-PCE-2020-0032, 2021 – 2023, Director de proiect;
3. Proiect: *Integrarea metodelor de intensificare a proceselor cu strategii de reglare avansată pentru îmbunătățirea performanțelor sistemelor de captare CO<sub>2</sub>*, Proiect de Cercetare Exploratorie (PCE), PN-III-P4-ID-PCE-2020-0632, 2021 – 2023, Membru în echipa proiectului;
4. Proiect: *Validarea tehnologiei inovative de calcium looping pentru decarbonizarea proceselor industriale mari consumatoare de energie primară de origine fosilă*, Proiect experimental – demonstrativ (PED), PN-III-P2-2.1-PED-2019-0181, 2020 - 2022, Director de proiect;
5. Proiect: *Hybrid Solvent – Membrane for post-combustion CO<sub>2</sub> capture and utilization*, NO Grants Call for Proposals 2019 - CRPs, RO-NO-2019-0379, 2020 - 2023, Project responsible from Babes-Bolyai University;
6. Proiect: *CONVERGE - Carbon valorisation in energy-efficient green fuels*, Horizon 2020, Nr. 818135, 2018 - 2022, Membru în echipa proiectului;
7. Proiect: *Dezvoltarea de soluții inovative pentru decarbonizarea sistemelor industriale mari consumatoare de energie prin aplicarea tehnologiilor de captare, utilizare și stocare a dioxidului de carbon*, Proiect de Cercetare Exploratorie (PCE), PN-III-P4-ID-PCE-2016-0031, 2017 - 2019, Director de proiect;
8. Proiect: *3D-CAPS: Three Dimensional Printed Capture Materials for Productivity Step-Change*, ERANET ACT, No. 87/2017, 2017 - 2020, Project director;
9. Proiect: *Demonstration of Gas Switching Technology for Accelerated Scale-up of Pressurized Chemical Looping Applications (GaSTech)*, ERANET ACT, No. 91/2017, 2017 - 2020, Membru în echipa proiectului;
10. Proiect: *Dezvoltarea unui proces inovativ și ecologic pentru recuperarea cuprului și a fracțiilor nemetalice din deșeuri de plăci de circuite imprimate fără componente electronice*, Post-doctoral reserch project, Contract no. 57/2018, PN-III-P1-1.1-PD-2016-0139, 2018-2020, Membru în echipa proiectului (mentor);
11. Proiect: *Optimizarea și validarea instalației pilot demonstrative de captare CO<sub>2</sub> utilizând tehnologia prin absorbție chimică*, Proiect experimental – demonstrativ (PED), 2017 - 2018, Project responsible from Babes-Bolyai University;

12. Proiect: *SEWGS - Technology platform for cost effective CO<sub>2</sub> reduction in the iron & steel industry*, Horizon 2020, Nr. 640769, 2015 - 2019, Project responsible from Babes-Bolyai University;
13. Proiect: *Procesul de captare post-combustie a dioxidului de carbon: simularea în regim dinamic și evaluarea degradării solventului*, Proiect de mobilități România - Belgia, 2017 - 2018, Membru în echipa proiectului;
14. Proiect: *Advanced thermo-chemical looping cycles for the poly-generation of decarbonised energy vectors: Material synthesis and characterisation, process modelling and life cycle analysis*, Romanian-Swiss Research Programme (RSRP), IZERZO\_141976/1, 2013 - 2015, Project director;
15. Proiect: *Optimizarea tehnico-economică și a impactului asupra mediului a integrării tehnologiilor CCS în centralele electrice pe combustibili fosili solizi și surse energetice regenerabile (biomasă)*, Proiecte colaborative de cercetare aplicativă (PCCA), PN-II-PT-PCCA-2011-3.2-0162, 2012 - 2016, Responsabil din partea Universității Babes-Bolyai;
16. Proiect: *Producerea de hidrogen din compuși hidroxilici rezultați ca deșeu la prelucrarea biomasei*, Proiecte colaborative de cercetare aplicativa (PCCA), PN-II-PT-PCCA-2011-3.2-0452, 2012 - 2016, Responsabil din partea Universității Babes-Bolyai;
17. Proiect: *Sisteme inovative pentru captarea dioxidului de carbon aplicabile proceselor de conversie a energiei*, ERC-like project, PNII-CT-ERC-2012-1; 2ERC, 2012 - 2014, Director de proiect;
18. Proiect: *Metode inovative de captare a dioxidului de carbon prin chemical looping aplicate sistemelor de poli-generare vectori energetici decarbonizați*, Proiect de Cercetare Exploratorie (PCE), PN-II-ID-PCE-2011-3-0028, 2011 – 2015, Director de proiect;
19. Proiect: *Sisteme inovative de poli-generare vectori energetici cu captarea și stocarea CO<sub>2</sub> pe baza proceselor de co-gazeificare a cărbunelui și resurselor energetice regenerabile (biomasă) sau a deșeurilor*, Proiect de Cercetare Exploratorie (PCE), PNII ID-2455, 2009 – 2011, Responsabil de proiect;
20. Proiect: *Conceptual design of typical power plant configurations for the estimation of reference capital costs including material*, Proiect realizat pentru European Commission, DG Joint Research Centre, Institute for Energy, The Netherlands, 2010-2011, Director de proiect;

21. Proiect: *Analysis of hydrogen and power (HYPOGEN)-type power plant*, Proiect realizat pentru European Commission, DG Joint Research Centre, Institute for Energy, The Netherlands, 2008, Director de proiect;
22. Proiect: *Dynamis - Towards hydrogen and electricity with CO<sub>2</sub> management*, FP6 integrated project, Coordonator: Sintef Norway, member in the research team of European Commission, DG Joint Research Centre, Institute for Energy, The Netherlands, 2006 – 2009, Membru în echipa proiectului;
23. Proiect: *Platforma de simulare control si testare in mecatronica CONMEC*, Proiect CEEEX, 2006 - 2008, Membru în echipa proiectului;
24. Proiect: *Îmbunătățirea performanțelor tehnico-economice ale procesului de calcinare a calcarului într-un cuptor vertical prin modelarea matematică și simularea acestuia cu ajutorul calculatorului*, Proiecte tineri cercetători - CNCSIS AT, 2005 - 2006, Director de proiect;
25. Proiect: *Îmbunătățirea performanțelor tehnico-economice și reducerea impactului asupra mediului a proceselor chimice prin modelarea matematică și simularea acestora cu ajutorul calculatorului*, Proiecte tineri cercetători - CNCSIS AT, 2006, Membru în echipa proiectului.