

**Lista de lucrări**  
**Conf. Dr. Ing. Cormoș Călin-Cristian**

**1. Cărți**

1. **C.C. Cormos**, *Decarbonizarea combustibililor fosili solizi prin gazeificare*, Presa Universitară Clujană, 2008, 345 pp.
2. **C.C. Cormos**, *Ingineria Reacțiilor Chimice, Aplicații practice pentru studiul reactoarelor omogene și eterogene gaz-lichid*, Presa Universitară Clujană, 2014, 129 pp.

**2. Articole**

1. **C.C. Cormos**, *Assessment of chemical absorption/adsorption for post-combustion CO<sub>2</sub> capture from Natural Gas Combined Cycle (NGCC) power plants*, Applied Thermal Engineering, 82, 2015, 120 - 128 (**factor de impact 2,624**)
2. A.M. Cormos, C. Dinca, **C.C. Cormos**, *Multi-fuel multi-product operation of IGCC power plants with carbon capture and storage (CCS)*, Applied Thermal Engineering, 74, 2015, 20 - 27 (**factor de impact 2,624**)
3. **C.C. Cormos**, *Economic evaluations of coal-based combustion and gasification power plants with post-combustion CO<sub>2</sub> capture using calcium looping cycle*, Energy, 78, 2014, 665 - 673 (**factor de impact 4,159**)
4. **C.C. Cormos**, L. Petrescu, *Evaluation of calcium looping as carbon capture option for combustion and gasification power plants*, Energy Procedia, 51, 2014, 154-160
5. **C.C. Cormos**, C. Dinca, *Transition to low carbon economy: Carbon capture approaches to be applied in energy-intensive industrial applications*, Romanian Chemical Engineering Society Bulletin, 1, 2014, 53 - 65
6. M. Muresan, **C.C. Cormos**, P.S. Agachi, *Biomass gasification-based hydrogen supply chain analysis under demand variability*, Studia UBB Chemia, LIX, 3, 2014, 29 - 42 (**factor de impact 0,136**)
7. L. Petrescu, **C.C. Cormos**, *Waste reduction (WAR) algorithm applied for environmental impact assessment of coal gasification with carbon capture and storage*, Journal of Cleaner Production, 2014, accepted, in press (**factor de impact 3,59**)

8. S. Fogarasi, **C.C. Cormos**, *Technico-economic assessment of coal and sawdust co-firing power generation with CO<sub>2</sub> capture*, Journal of Cleaner Production, 2014, accepted, in press (**factor de impact 3,59**)
9. **C.C. Cormos**, A.M. Cormos, L. Petrescu, *Assessment of hydrogen and power co-generation based on biomass direct chemical looping systems*, Chemical Engineering Transactions, 39, 2014, 247-252
10. **C.C. Cormos**, L. Petrescu, A.M. Cormos, *Assessment of hydrogen production systems based on natural gas conversion with carbon capture and storage*, Computer Aided Chemical Engineering, 33, 2014, 1081-1086
11. Z. Tasnadi-Asztalos, A. Imre-Lucaci, **C.C. Cormos**, A.M. Cormos, M.D. Lazar, P.S. Agachi, *Thermodynamic study of hydrogen production via bioglycerol steam reforming*, Computer Aided Chemical Engineering, 33, 2014, 1735-1740
12. **C.C. Cormos**, *Economic implications of pre- and post-combustion calcium looping configurations applied to gasification power plants*, International Journal of Hydrogen Energy, 39, 2014, 10507-10516 (**factor de impact 2,93**)
13. **C.C. Cormos**, *Techno-economic and environmental analysis of hydrogen and power co-generation based on co-gasification of coal and biomass / solid wastes with carbon capture*, Chemical Engineering Transactions, 37, 2014, 139-144
14. **C.C. Cormos**, *Renewable hydrogen production concepts from bioethanol reforming with carbon capture*, International Journal of Hydrogen Energy, 39, 2014, 5597-5606 (**factor de impact 2,93**)
15. M. Muresan, **C.C. Cormos**, S. Agachi, *Comparative life cycle analysis for gasification-based hydrogen production systems*, Journal of Renewable and Sustainable Energy, 6, 2014, 013131 (**factor de impact 0,925**)
16. A.M. Cormos, **C.C. Cormos**, *Investigation of hydrogen and power co-generation based on direct coal chemical looping systems*, International Journal of Hydrogen Energy, 39, 2014, 2067-2077 (**factor de impact 2,93**)
17. **C.C. Cormos**, *Techno-economic and environmental evaluations of large scale gasification-based CCS project in Romania*, International Journal of Hydrogen Energy, 39, 2014, 13-27 (**factor de impact 2,93**)
18. **C.C. Cormos**, A.M. Cormos, L. Petrescu, *Assessment of chemical looping-based conceptual designs for high efficient hydrogen and power co-generation applied to gasification processes*, Chemical Engineering Research and Design, 92, 2014, 741-751 (**factor de impact 2,281**)



19. I.M. Bodea, **C.C. Cormos**, *Applications of chemical looping combustion to energy conversion processes*, *Studia Chemia*, 4, 2013, 7-22 (**factor de impact 0,136**)
20. C. Dinca, **C.C. Cormos**, H. Necula, *Environmental impact assessment of GHG emissions generated by coal life cycle and solutions for reducing CO<sub>2</sub>*, *Journal of Environmental Protection*, 4, 2013, 5-15 (**factor de impact 1,35**)
21. **C.C. Cormos**, A.M. Cormos, P.S. Agachi, *Assessment of carbon capture options for super-critical coal-based power plants*, 16th Conference Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction - PRES'13, Rhodes Island, Greece, 29 September - 2 October, 2013, published in *Chemical Engineering Transactions*, 35, 2013, 367-372
22. F. Goga, R. Dudric, **C.C. Cormos**, F. Imre, L. Bizo, Radu Misca, *Fly ash from thermal power plant, raw material for glass-ceramic*, *Environmental Engineering and Management Journal* 12 (2), 2013, 337-342 (**factor de impact 1,258**)
23. **C.C. Cormos**, A.M. Cormos, S. Agachi, *Evaluation of chemical looping systems as carbon capture option to be applied to gasification processes*, *Computer Aided Chemical Engineering*, 32, 2013, 199-204
24. **C.C. Cormos**, A. Imre-Lucaci, A.M. Cormos, Z. Tasnadi-Asztalos, M.D. Lazar, *Conceptual design of hydrogen production process from bioethanol reforming*, *Computer Aided Chemical Engineering*, 32, 2013, 19-24
25. **C.C. Cormos**, L. Petrescu, *Evaluation of calcium looping as carbon capture option for combustion and gasification power plants*, 7th Trondheim CCS Conference, TCCS-7, June 5-6 2013, Trondheim, Norway (published in *Energy Procedia*)
26. **C.C. Cormos**, *Assessment of flexible energy vectors poly-generation based on coal and biomass/solid wastes co-gasification with carbon capture*, *International Journal of Hydrogen Energy*, 38, 2013, 7855-7866 (**factor de impact 2,93**)
27. **C.C. Cormos**, C. Dinca, *Assessment of mass and energy integration aspects for IGCC power plants with carbon capture and storage (CCS)*, *Studia Universitatis Chemia*, LVIII, 1, 2013, 117-131 (**factor de impact 0,136**)
28. M. Muresan, **C.C. Cormos**, P.S. Agachi, *Techno-economical assessment of coal and biomass gasification-based hydrogen production supply chain system*, *Chemical Engineering Research and Design*, 91, 2013, 1527-1541 (**factor de impact 2,281**)
29. **C.C. Cormos**, K. Vatopoulos, E. Tzimas, *Assessment of the consumption of water and construction materials in state-of-the-art fossil fuel power generation technologies involving CO<sub>2</sub> capture*, *Energy*, 51, 2013, 37-49 (**factor de impact 4,159**)



30. **C.C. Cormos**, A.M. Cormos, *Assessment of calcium-based chemical looping options for gasification power plants*, International Journal of Hydrogen Energy, 38, 2013, 2306-2317 (**factor de impact 2,93**)
31. A. Padurean, **C.C. Cormos**, P.S. Agachi, *Techno-economic evaluation of pre- and post-combustion carbon dioxide capture methods applied for an IGCC plant for power generation*, Environmental Engineering and Management Journal, 12, 2013, 2191- 2202 (**factor de impact 1,258**)
32. I.M. Bodea, **C.C. Cormos**, *Evaluation of iron and nickel-based oxygen carriers for natural gas chemical looping combustion systems*, Studia Universitatis Chemia, LVII, 2, 2012, 47 - 57 (**factor de impact 0,136**)
33. **C.C. Cormos**, *Evaluation of carbon capture and storage (CCS) technologies for Integrated Gasification Combined Cycle (IGCC) power plants*, Energy and Climate Change Conference, Atena, Grecia, 12-14 Octombrie 2012
34. F. Goga, R. Dudric, **C.C. Cormos**, F. Imre, L. Bizo, Radu Misca, *Fly ash from thermal power plant, raw material for glass-ceramic*, 9-th International conference: Environmental Legislation, Safety Engineering and Disaster Management - ELSSEDIMA, Cluj-Napoca, Romania, 25-27 Octombrie 2012
35. **C.C. Cormos**, *Evaluation of syngas-based chemical looping applications for hydrogen and power co-generation with CCS*, International Journal of Hydrogen Energy, 37, 2012, 13371-13386 (**factor de impact 2,93**)
36. **C.C. Cormos**, *Integrated assessment of IGCC power generation technology with carbon capture and storage (CCS)*, Energy, 42, 2012, 434-445 (**factor de impact 4,159**)
37. **C.C. Cormos**, *Hydrogen and power co-generation based on coal and biomass/solid wastes co-gasification with carbon capture and storage*, International Journal of Hydrogen Energy, 37, 2012, 5637-5648 (**factor de impact 2,93**)
38. **C.C. Cormos**, P.S. Agachi, *Integrated assessment of carbon capture and storage technologies in coal-based power generation using CAPE tools*, Computer Aided Chemical Engineering, 30, 2012, 56-60
39. M. Muresan, **C.C. Cormos**, P.S. Agachi, *Multiproduct, multiechelon supply chain analysis under demand uncertainty and machine failure risk*, Computer Aided Chemical Engineering, 30, 2012, 462-466
40. A. Padurean, **C.C. Cormos**, P.S. Agachi, *Pre-combustion carbon dioxide capture by gas-liquid absorption for Integrated Gasification Combined Cycle power plants*,



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  43. V. Goia, **C.C. Cormos**, P.S. Agachi, *Influence of temperature and heating rate on biomass pyrolysis in a fixed-bed reactor*, Studia Universitatis Babes-Bolyai, Chemia, LVI, 2, 2011, 49 – 56 (**factor de impact 0,136**)
  44. **C.C. Cormos**, *Hydrogen production from fossil fuels with carbon capture and storage based on chemical looping systems*, International Journal of Hydrogen Energy, 36, 2011, 5960-5971 (**factor de impact 2,93**)
  45. **C.C. Cormos**, *Evaluation of power generation schemes based on hydrogen-fuelled combined cycle with carbon capture and storage (CCS)*, International Journal of Hydrogen Energy, 36, 2011, 3726-3738 (**factor de impact 2,93**)
  46. A. Padurean, **C.C. Cormos**, A.M. Cormos, P.S. Agachi, *Multicriterial analysis of post-combustion carbon dioxide capture using alkanolamines*, International Journal of Greenhouse Gas Control, 5, 2011, 676-685 (**factor de impact 3,821**)
  47. **C.C. Cormos**, A. Padurean, A.M. Cormos, P.S. Agachi, *Power generation based on coal and low-grade fuels co-gasification with carbon capture and storage*, Clean Coal Conference – CCT2011, Zaragoza, Spain, 2011
  48. **C.C. Cormos**, A.M. Cormos, P.S. Agachi, *Techno-economical and environmental evaluations of IGCC power generation process with carbon capture and storage (CCS)*, European Symposium on Computer Aided Process Engineering – ESCAPE 21, Porto Carras, Greece, 2011
  49. V. Maxim, **C.C. Cormos**, P.S. Agachi, *Design of Integrated Gasification Combine Cycle plant with Carbon Capture and Storage based on co-gasification of coal and biomass*, European Symposium on Computer Aided Process Engineering – ESCAPE 21, Porto Carras, Greece, 2011
  50. **C.C. Cormos**, *Evaluation of energy integration aspects for IGCC-based hydrogen and electricity co-production with carbon capture and storage*, International Journal of Hydrogen Energy, 35, 2010, 7485-7497 (**factor de impact 2,93**)



51. **C.C. Cormos**, A. Padurean, P.S. Agachi, *Technical evaluations of carbon capture options for power generation from coal and biomass based on integrated gasification combined cycle scheme*, 10th International Conference on Greenhouse Gas Control Technologies – GHGT10, Amsterdam, The Netherlands, 2010
52. A.M. Padurean, **C.C. Cormos**, A.M. Cormos, S. Agachi, *Technical assessment of CO<sub>2</sub> capture using alkanolamines solutions*, Studia Universitatis Babeş-Bolyai, Chemia, LV, 1, 2010, 55 – 63 (**factor de impact 0,136**)
53. V. Maxim, **C.C. Cormos**, P.S. Agachi, *Mathematical modeling and simulation of coal co-gasification with waste/biomass in an entrained-flow gasifier*, Studia Universitatis Babeş-Bolyai, Chemia, LV, 2, 2010, 51 – 62 (**factor de impact 0,136**)
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55. **C.C. Cormos**, F. Starr, E. Tzimas, *Use of lower grade coals in IGCC plants with carbon capture for the co-production of hydrogen and electricity*, International Journal of Hydrogen Energy, 35, 2010, 556 – 567 (**factor de impact 2,93**)
56. **C.C. Cormos**, P.S. Agachi, *Energy integration issues for hydrogen and electricity co-production based on gasification process with Carbon Capture and Storage (CCS)*, European Symposium on Computer Aided Process Engineering – ESCAPE 20, Ischia, Naples, Italy, 2010
57. A.M. Cormos, **C.C. Cormos**, J. Gaspar, A. Padurean, S. Agachi, *Techno-economical analysis of carbon dioxide absorption in mono-ethanolamine by mathematical modeling and simulation*, European Symposium on Computer Aided Process Engineering – ESCAPE 20, Ischia, Naples, Italy, 2010
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59. **C.C. Cormos**, S. Agachi, *Hydrogen production from coal and biomass co-gasification process with carbon capture and storage*, World Hydrogen Energy Congress – WHEC 2010, Essen, Germany, 2010
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61. **C.C. Cormos**, S. Agachi, *Gasification process – A practical way for solid fossil fuels decarbonisation*, *Studia Universitatis Babes-Bolyai, Chemia*, LIV, 1, 2009, 81 – 91 (**factor de impact 0,136**)
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63. **C.C. Cormos**, V. Goia, A.M. Cormos, S. Agachi, *Hydrogen and electricity co-production schemes based on gasification processes with carbon capture and storage*, 4-th International Conference on Clean Coal Technologies – CCT2009 & 3rd International Freiberg Conference on IGCC & XtL Technologies, Dresden, Germany, 2009
64. **C.C. Cormos**, A.M. Cormos, S. Agachi, *Heat and power integration for hydrogen-fuelled Combined Cycle Gas Turbine (CCGT)*, European Symposium on Computer Aided Process Engineering – ESCAPE 19, Krakow, Poland, 2009
65. **C.C. Cormos**, A.M. Cormos, V. Goia, S. Agachi, *Evaluation of energy vectors poly-generation schemes based on solid fuel gasification processes with Carbon Capture and Storage (CCS)*, European Symposium on Computer Aided Process Engineering – ESCAPE 19, Krakow, Poland, 2009
66. **C.C. Cormos**, *Hydrogen and electricity co-production based on gasification process with Carbon Capture and Storage (CCS)*, Enlargement and Integration Workshop: “Clean and efficient power generation from coal”, European Commission, Gliwice, Poland, 24-25 September 2009
67. E. Tzimas, **C.C. Cormos**, F. Starr, C. Garcia-Cortes, *The design of carbon capture IGCC-based plants with hydrogen co-production*, *Energy Procedia*, 1, 2009, 591 – 598
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71. S. Bandyopadhyay, **C.C. Cormos**, *Water management in process industries incorporating regeneration and recycle through a single treatment unit*, Industrial and Engineering Chemistry Research, 2008, 47(4), 1111 – 1119 (**factor de impact 2,235**)
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73. F. Starr, V. Tzimas, **C.C. Cormos**, S. Peteves, *IGCC: coal-based processing technology for the future*, Hydrocarbon Processing, May 2007
74. E. Tzimas, A. Mercier, **C.C. Cormos**, S. Peteves, *Trade-off in emissions of acid gas pollutants and of carbon dioxide in fossil fuels power plants with carbon capture*, Energy Policy, 35, 2007, 3991 – 3998 (**factor de impact 2,696**)
75. **C.C. Cormos**, S. Bandyopadhyay, *Process water management with regeneration and recycle*, 17-th European Symposium on Computer Aided Process Engineering, ESCAPE-17, Bucharest, Romania, May 2007
76. S. Bandyopadhyay, **C.C. Cormos**, *Minimum reflux in liquid – liquid extraction*, 17-th European Symposium on Computer Aided Process Engineering, ESCAPE-17, Bucharest, Romania, May 2007
77. A.M. Cormos, **C.C. Cormos**, S. Agachi, *Making soda ash manufacture more sustainable – A modeling study using Aspen Plus*, 17-th European Symposium on Computer Aided Process Engineering, ESCAPE-17, Bucharest, Romania, May 2007
78. **C.C. Cormos**, F. Starr, E. Tzimas, S. Petves, A. Brown, *Gasifier concept for hydrogen and electricity co-production with CO<sub>2</sub> capture*, 3-rd International Conference on Clean Coal Technologies, Cagliari, Sardinia, Italy, May 2007
79. F. Starr, **C.C. Cormos**, V. Tzimas, S. Peteves, *Aspects of IGCC – Hypogen and the Dynamis project*, Pan European Clean Coal Conference, London, UK, January 2007
80. A.M. Cormos, **C.C. Cormos**, M. Cristea, S. Agachi, *Simulation of rotary limekiln and lime cooler*, Studia Universitatis “Babeş – Bolyai”, Chem., LII (2), Cluj – Napoca, Romania, 2007, pg. 73 – 83
81. **C.C. Cormos**, A.M. Cormos, S. Agachi, *Modelarea și simularea procesului de carbonatare a saramurii amoniacale din cadrul tehnologiei de obținere a sodei calcinate*, Revista de Chimie, 57(2), 2006, 130-137 (**factor de impact 0,677**)





82. **C.C. Cormos**, A.M. Cormos, S. Agachi, *Modelarea și simularea procesului de regenerare a amoniacului rezultat din tehnologia de obținere a sodei calcinate*, Revista de Chimie, 56(11), 2005, 1124-1130 (**factor de impact 0,677**)
83. **C.C. Cormos**, S. Agachi, *Optimization of calcium pantothenate synthesis*, 14<sup>th</sup> Romanian International Conference on Chemistry and Chemical Engineering, RICCCCE-14, Bucharest, Romania, 22 – 24 September 2005
84. **C.C. Cormos**, S. Agachi, *Advanced process control of pantolactone synthesis using nonlinear model predictive control (NMPC)*, 15<sup>th</sup> European Symposium on Computer Aided Process Engineering, ESCAPE-15, Barcelona, Spain, 29 May – 1 June 2005
85. A.M. Cormos, **C.C. Cormos**, S. Agachi, *Modeling and simulation of thermal decomposition of limestone in a vertical lime kiln*, CAPE Forum 2005, Cluj – Napoca, Romania, 25 – 26 February 2005
86. **C.C. Cormos**, A.M. Cormos, S. Agachi, *Modeling and simulation of the carbonation process of ammoniacal brine using ChemCAD*, Studia Universitatis “Babeș – Bolyai”, Chem., L (1), Cluj – Napoca, Romania, 2005
87. **C.C. Cormos**, A.M. Cormos, A. Friedl, S. Agachi, *Modeling and simulation of the scrubbing unit waste incineration plant*, Studia Universitatis “Babeș – Bolyai”, Chem., L (1), Cluj – Napoca, Romania, 2005
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89. **C.C. Cormos**, A.M. Cormos, S. Agachi, *Retrofit study of racemic calcium pantothenate synthesis*, 32<sup>nd</sup> International Conference of Slovak Society of Chemical Engineering, Tatranske Matliare, Slovakia, 23 – 27 May 2005
90. **C.C. Cormos**, S. Agachi, *Modelarea și simularea extractiei pantolactonei folosind programul ChemCAD*, Revista de Chimie, 56(7), 2005, 750-756 (**factor de impact 0,677**)
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94. **C.C. Cormos**, S. Agachi, *Modeling and simulation of pantolactone synthesis*, Studia Universitatis “Babeş – Bolyai”, Chem., XLIX (2), Cluj – Napoca, Romania, 2004
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99. **C.C. Cormos**, S. Agachi, *Modeling and simulation of 3-aminopropionitrile synthesis using dedicated software packages*, Studia Universitatis “Babeş – Bolyai”, Chem., XLVII (1-2), page 85 – 91, Cluj – Napoca, Romania, 2002
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### 3. Brevete de invenție

1. L. Terec, G. Bora, V. Colceriu, **C.C. Cormos**, E. Cotoră, L. Lenta, M. Moga, H. Muresanu, M. Racołta, *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, România

### 4. Proiecte de cercetare

1. Proiect: *SEWGS - Technology platform for cost effective CO<sub>2</sub> reduction in the iron & steel industry*, Horizon 2020, 2015 - 2019, Responsabil proiect din partea Universității Babeș-Bolyai
2. 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), 2013 - 2015, Director de proiect
3. 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 aplicativa (PCCA), 2012 - 2016, Responsabil proiect din partea Universității Babeș-Bolyai
4. Proiect: *Producerea de hidrogen din compuși hidroxilici rezultați ca deșeu la prelucrarea biomasei*, Proiecte colaborative de cercetare aplicativa (PCCA), 2012 - 2016, Responsabil proiect din partea Universității Babeș-Bolyai
5. Proiect: *Sisteme inovative pentru captarea dioxidului de carbon aplicabile proceselor de conversie a energiei*, ERC-like project, 2012 - 2014, Director de proiect
6. Proiect: *Metode inovative de captare a dioxidului de carbon prin chemical looping aplicate sistemelor de poli-generare vectori energetici decarbonizați*, Idei – Proiecte de cercetare exploratorie (PCE), 2011 – 2015, Director de proiect
7. 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*, CNCSIS Idei – Proiecte de cercetare exploratorie, 2009 – 2011, Responsabil proiect



8. 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, Olanda, 2010-2011, Director de proiect
9. Proiect: *Analysis of hydrogen and power (HYPOGEN)-type power plant*, Proiect realizat pentru European Commission, DG Joint Research Centre, Institute for Energy, Olanda, 2008, Director de proiect
10. Proiect: *Dynamis - Towards hydrogen and electricity with CO<sub>2</sub> management*, FP6 integrated project, Coordonator: Sintef Norvegia, membru în echipa proiectului în cadrul European Commission, DG Joint Research Centre, Institute for Energy, Olanda, 2006 – 2009
11. Proiect: *Platforma de simulare control si testare in mecatronica CONMEC*, Proiect CEEEX, 2006 - 2008, Membru în echipa proiectului
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