

## Lista de lucrari – Sirbu (Oprescu) Elena-Emilia

**A. Titlul tezei de doctorat :** Valorificarea glicerinei sub forma unor aditivi componenti pentru carburanti diesel, Universitatea Petrol - Gaze din Ploiești, domeniul Inginerie Chimică.

### **B. Articole publicate in jurnale ISI**

1. **Oprescu, E.-E.**, Enascuta, C.E., Radu E., Ciltea-Udrescu M., Lavric, V. Does the ultrasonic field improve the extraction productivity compared to classical methods – Maceration and reflux distillation? *Chemical Engineering & Processing: Process Intensification*, 2022, 179, 109082

2. **Oprescu E.-E.**, Enascuta E.C., Vasilievici G., Banu N.D., Banu I. Preparation of magnetic biochar for nitrate removal from aqueous solutions, *Reaction Kinetics, Mechanisms and Catalysis*, 2022, 135, 2629–2642.

3. Vintila, A.C.N; Vlaicu, A; Radu, E; Ciltea-Udrescu, M.; Enascuta, E.C; Banu, I., **Oprescu, E.-E.**, Evaluation of ultrasound assisted extraction of bioactive compounds from microalgae, *Journal of Food Measurement and Characterization*, 2022, 16, 2518–2526.

4. Calin, C., Leostean, C., Trifoi, A.R., **Oprescu, E.-E.**, Wiita, E, Banu, I; Doukeh, R., Mutual inhibition effect of sulfur compounds in the hydrodesulfurization of thiophene, 2-ethylthiophene and benzothiophene ternary mixture, *Scientific Reports*, 2021, 11, 19053.

5. Marinescu, Mihai, Popovici, D.R., Bombos, D., Vasilievici, G., Rosca, Paul, **Oprescu, E.-E.**, Bolocan, I., Hydrodeoxygenation and hydrocracking of oxygenated compounds over CuPd/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub>-ZSM-5 catalyst, *Reaction Kinetics, Mechanisms and Catalysis*, 2021, 133, 1013–1026.

6. **Oprescu, E.-E.**, Enascuta C.-E., Doukeh, R., Calin, C., Lavric, V., Characterizing and using a new bi-functional catalyst to sustainably synthesize methyl levulinate from biomass carbohydrates, *Renewable Energy*, 2021, 176, 651-662.

7. Popovici, D.- R., Neagu M., Dutescu-Vasile, C.M., Bombos, D., Mihai S., **Oprescu, E.-E.**, Adsorption of p-nitrophenol onto activated carbon prepared from fir sawdust: isotherm studies and error analysis, *Reaction Kinetics, Mechanisms and Catalysis*, 2021, 133, 483–500.

8. Doukeh, R., Bombos, D., Bombos, M., **Oprescu, E.-E.**, Dumitrascu, G., Vasilievici, G., Calin, C. Catalytic hydrotreating of bio-oil and evaluation of main noxious emissions of gaseous phase, *Scientific Reports*, 2021, 11(1), 6179.

9. Doukeh, R., Bombos, M., Bombos, D., Vasilievici, G., Radu, E., **Oprescu, E.-E.**, Pyrolysis of digestate from anaerobic digestion on tungsten oxide catalyst, *Reaction Kinetics, Mechanisms and Catalysis*, 2021, 132(2), 829-838.

10. Bombos, M., **Oprescu, E.-E.**, Calin, C., Vasilievici, G., Velea, S., Bombos, D. Slow pyrolysis of biomass in acidic or metallic catalysis *Revista de Chimie*, 2019, 70(9), 3148-3151.

11. **Oprescu, E.-E.**, Bombos, M., Vasilievici, G., Velea, S., Use of Ethoxylated Surfactants to Improve Digestate Stability *Revista de Chimie*, 2019, 70(7), 2530-2533.

12. **Oprescu, E.E.**, Enascuta, C.E., Galan, A.M., Bombos, M., Vasilievici, G., Isopencu, G., Lavric, V., Velea, S., Evaluation of Porphyridium purpureum and Nannochloropsis sp. For carbohydrates and lipids production, *Revista de Chimie*, 2019, 70(9), 3305-3308.

13. Emanuela C.E., Stepan E., Bolocan I., Bombos D., Calin C., **Oprescu E.-E.**, Vasile L., Simultaneous production of oil enriched in  $\omega$ -3 polyunsaturated fatty acids and biodiesel from fish wastes, *Waste Management*, 2018, 75, p.205-214.
14. Stepan, E., Enascuta, C.-E., **Oprescu, E.-E.**, Radu, E., Vasilievici, G., Radu, A., Stoica, R., Velea, S., Nicolescu, A., Lavric, V., A versatile method for obtaining new oxygenated fuel components from biomass, *Industrial Crops and Products*, 113, 2018, p. 288-297.
15. Gherman T., Popescu V., Carpa R., Gavril G.L., Rapa M., **Oprescu E.-E.**, *Salvia Officinalis* Essential Oil Loaded Gelatin Hydrogel as Potential Antibacterial Wound Dressing Materials, *REV.CHIM.(Bucharest)*, 2018, 69(2), 410-414.
16. Radu, E., **Oprescu, E.-E.**, Enascuta, C.E., Calin, C., Stoica, R., Scaeteanu, G.V., Vasilievici, G., Capra, L., Ivan, G., Ion, A.C., Kinetic adsorption of humic acids mixture obtained from microalgae on exfoliated graphite nanoplatelets, *REV.CHIM.(Bucharest)*, 2018, 69(1), 191-195.
17. Enascuta, C.E., Stepan, E., **Oprescu, E.-E.**, Radu, A., Alexandrescu, E., Stoica, R., Epure, D.G., Niculescu, M.D., Microencapsulation of essential oils, *REV.CHIM.(Bucharest)*, 2018, 69 (7), 1612-1615.
18. Galan A.-M., Calinescu I., Radu E., **Oprescu, E.-E.**, Vasilievici G., Velea S., Development of a new method for determination of the oil content from microalgae lipid fraction, 2017, *REV.CHIM.(Bucharest)*, 68 (4), 671-674.
19. Bombos D., Velea S., Bombos M., Vasilievici G., **Oprescu, E.-E.**, Ecological component for motor fuels based on furfural derivatives, 2016, *REV.CHIM.(Bucharest)*, nr. 67 (4), 2016, 745-750.
20. Radu, E., Stoica, R., Doncea, S.M., Vasilievici, G., **Oprescu, E.-E.**, Bolocan, I. Al-Ogaidi, A.J.M., Ion, I., Ion, A.C., 2016, Vancomycin sorption on pristine and oxidized exfoliated graphite nanoplatelets, *REV.CHIM.(Bucharest)*, nr. 67, (3), 2016, 401-407.
21. Radu E., Stoica, R., Calin, C., **Oprescu E.-E.**, Bolocan, I., Ion, I., Ion, C.A, 2016, Validation of a RP-HPLC-UV method for the determination of bisphenol a at low levels in natural mineral water, *REV. CHIM. (Bucharest)*, nr. 67(2) 236-240.
22. Stepan, E., Enascuta, C.-E., **Oprescu, E.-E.**, Radu, E., Radu, A., Galan, A-M, Vasilievici G., Lavric V., Velea S., 2016, Intermediates for synthetic paraffinic kerosene from microalgae, *Fuel* 172, 29–36.
23. Rizea, C., Bombos, M., Vasilievici G., Bombos D., **Oprescu E.-E.**, 2015, Acidity Influence Of Catalysts On The Process Selectivity For The Hydrogenation Of Methyl Oleate, *REV. CHIM. (Bucharest)*, nr. 66 (12) 2031-2035.
24. Bombos, M., Cristea, S., **Oprescu E.-E.**, Vasilievici G., Bombos D., Bolocan I., 2015, Triglycerides Hydroconversion of Sunflower Oil On Ru / Gamma-Alumina Catalyst, *REV. CHIM. (Bucharest)*, nr. 66 (11) 1810-1813.
25. **Oprescu, E.-E.**, Bombos, D., Dragomir, R.-E., Stepan, E., Bolocan, I., 2015, Esterification of Free Fatty Acids with Methanol over Superacid Catalyst, *REV. CHIM. (Bucharest)*, nr. 66 (6) 864-867.
26. Dragomir, R.-E., Bogatu, L., Rosca, P., **Oprescu, E.-E.**, Juganaru, T., 2015, Biodiesel Produced by Two Step Hydroprocessing of Waste Cooking Oil. II. Hydrocracking of hydrotreated waste cooking oil and straight run gasoil mixture, *REV. CHIM. (Bucharest)*, nr. 66 (4) 552-555.
27. Dragomir, R.-E., Rosca, P., **Oprescu, E.-E.**, 2015, Comparative properties of fossil diesel, conventional biodiesel and green diesel blends, *REV. CHIM. (Bucharest)*, nr. 66 (3) 400-403.

28. Dragomir, R.-E., Rosca, P., Juganaru, T., **Oprescu, E.-E.**, 2015, „Biodiesel produced by two step hydroprocessing of waste cooking oil”, *REV. CHIM.* (Bucharest), nr. 66 (2), 277-281.
29. Dragomir, R.-E., Rosca, P., **Oprescu, E.-E.**, 2014, “Renewable diesel production by co-processing of rapeseed oil mixed with straight run gas oil”, *Rev. Chim.*, 65(5), 616-619.
30. **Oprescu, E.-E.**, Bombos, D., Bolocan, I., Dragomir, R-E, Rosca, P., 2014, „Diesel Fuel Green Additive based on Glycerol”, *REV. CHIM.* (Bucharest), nr. 65 (10), 1226-1229.
31. **Oprescu, E.-E.**, Dragomir, R.-E., Radu, E., Radu, A., Velea, S., Bolocan, I., Stepan, E., Rosca, P., 2014, Performance and emission characteristics of diesel engine powered with diesel–glycerol derivatives blends, *Fuel Processing Technology*, vol. 126, 460-468.
32. **Oprescu, E.-E.**, Stepan, E., Raluca Elena Dragomir, R.-E., Radu, A., Rosca, P., 2013, Synthesis and Testing of Glycerol Ketals as Components for Diesel Fuel”, *Fuel Processing Technology*, 110, 2013 , pag. 214-217 (ISSN 0378-3820).
33. **Oprescu, E.-E.**, Stepan, E., Rosca, P., Radu, A., Enascuta, C.-E., 2012 „Synthesis of Glycerol Carbonate over Hydrotalcite Catalyst”, *Rev. Chim.*, 63 (6), 621-625.
34. Stepan, E., Velea, S., Tanase, C., Radu, A., Enascuta, C.-E., **Oprescu, E.-E.**, 2012, „Biodiesel and Surfactants from Fats”, *Rev. Chim.*, 63 (6), 646-650.

### C. Articole publicate in jurnale non-ISI

1. **Oprescu E.-E.**, Popa Cristina, „Prediction of FAME Yield Using Artificial Neural Network Model”, *Buletinul Universității Petrol- Gaze din Ploiești, Seria Tehnică*, Vol. LXIX, No 1/2017, pag 13-18
2. **Oprescu, E.-E., Bombos, D., Cristea, S.**, Calin, C., Stepan, E., Bolocan, I., “Glycerol acetal ester as biofuel additive “, *Buletinul UPG, Seria Tehnica*, vol LXVI, nr. 4/2014, 27-34.
3. **Oprescu, E.-E.**, Stepan, E., Rosca, P., Adrian, R., Enășcuță, C. E., 2012, “Green synthesis of cyclohexanone glycerol ketal catalyzed by a solid superacid”, *Ovidius University Annals of Chemistry*, 23 (1), pag. 72-76.
4. **Oprescu E.-E.**, Velea S., Doncea S.M., Radu A., Stepan E., Bolocan I., 2015, Biodiesel from algae oil with high free fatty acid over amphiphilic solid acid catalyst, *Chemical Engineering Transactions*, 43, 595-600.
5. **Oprescu E.-E.**, Stepan E., Popa C., Bolocan I., 2015, International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, *SGEM*, 1(4) 337-344.

### D. Brevete nationale

1. Bombos D., Bombos M., Calin C., **Oprescu E.-E.**, Velea S, Vasilievici G., 2022, Bifunctional catalyst based on Cu-Pd / WO<sub>3</sub> - Nb<sub>2</sub>O<sub>5</sub> and pyrolysis bio-oil hydrotreatment process on it”, RO Patent 135717
2. Bombos D., Bombos M., Calin C., **Oprescu E.-E.**, Velea S, Vasilievici G., 2022,, Bifunctional catalyst based on Ni-Pt / MoO<sub>3</sub> - SnO<sub>2</sub> and pyrolysis bio-oil hydrocracking process”, RO Patent 135718.
3. Velea S., Bombos M., Doukeh R., Vasilievici G., Bombos D., **Oprescu E.-E.**, Calin C., 2021, " Catalyst based on Mo and process of slow pyrolysis of biomass on this catalyst”, RO Patent 134949

4. Stepan E., Velea S., **Oprescu E.- E.**, Vasilievici Gabriel; Radu E., Radu Adrian, 2018, Heterogeneous basic catalyst for the production of methyl esters, its production process and process for the production of methyl esters of fatty acids, Ro Patent 130749 B1.

5. Stepan E., Velea S., Oancea F., **Oprescu E.-E.**, Bomboș M., 2018, Catalyst for obtaining methyl esters of fatty acids and process for obtaining this catalyst ", RO Patent 130689B1.

6. Stepan E., Velea S., Vasilievici G., Radu E., Radu A., **Oprescu E.-E.**, Enășcuță C., 2018. „Diesel biofuel based on furfurylidene glycerol derivatives and process for producing the same”, RO Patent Patent 131,789.

7. Stepan, E., Velea, S., Enascuta, C. E., Radu, A., **Oprescu, E.- E.**, Tudor, A., Process for obtaining methyl esters of sulfurized fatty acids, from fats, OSIM, Nr. RO 127,647,Romania, 2012.

8. Stepan, E., Velea S., Tanase, C., Radu, A., Enascuta , C. E., **Oprescu E.- E.**, Process for obtaining a diesel biofuel and surfactants from fatty substances, OSIM, Nr. RO 126,669, Romania, 2012.

9. Stepan Emil, **Oprescu, E.- E.**, Radu, A., Enășcuță C. E., 2017, “Process for obtaining acetals and ketals of glycerol”, RO Patent 128,997.

#### **E. Participarea la conferințe specializate fără publicarea lucrărilor in extenso (selectie)**

1. Vlaicu, A., Nicolae Vintila, A.C., Adrian, R., Enascuta, C.E., **Oprescu, E.-E.** Screening of antioxidant and pufa production in *Dunaliella Salina* by altering growth nutritional factors, International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM, 2021, 21(6.1), 123–130.

2. **Oprescu E.-E.**, Radu A., Enascuta C. E., Vasilievici G., Radu E., Psenovschi G., Lavric V., Effect of Temperature and Composition on Viscosity of Different Formulation of Ethyl Levulinate/Diesel Fuel/Biodiesel, Simpozionul International "Prioritatile Chimiei pentru o Dezvoltare Durabila - PRIOCHEM", 30 octombrie - 1noiembrie, 2019, Proceedings 2019, 29, 120; doi:10.3390/proceedings2019029120.

3. **Oprescu E.-E.**, Enascuta C. E., Galan A.-M., Radu A., Isopencu G., Lavric V., Extraction of valuable compounds from microalgal biomass. Operating conditions and yield “European Biotechnology Congress 2019” aprilie 11-13, 2019, la Valencia, Spania.

4. **Oprescu E.-E.**, Calin C., Bombos M., Vasilievici G., Enascuta C.E., Velea S., Bombos D., “The pyrolysis of biogas digestate in order to obtain biochar and biofuel”, 7<sup>Th</sup> EuCheMS Chemistry Congress, 26-30.08.2018, Liverpool, United Kingdom.

5. Bombos D., Calin C., Velea S., Bombos M., Enascuta C.-E., Vasilievici G., **Oprescu E.-E.**, Stabilization of the biogas digestate suspension for optimal processing, Simpozionul international “Prioritatile Chimiei pentru o Dezvoltare Durabila – PRIOCHEM 14<sup>Th</sup> edition, 10-12 octombrie, 2018, București, România.

6. **Oprescu E.-E.**, C. E. Enascuta, Stepan E., E. Radu, C. Calin, Radu A., Vasile Scaeteanu G., Modjar R. M., „The importance of humic substances in agricultural systems”, International Conference AGRI-FOOD 2017 “AGRICULTURE AND FOOD FOR THE XXI CENTURY”, p.110-117.

7. **Oprescu E.-E.**, Enascuta C.E., Radu E., Stepan Emil, Calin C, Epure D., Cioineag C., Stoica R., Sirbu C., Cioraianu T., “Agriculture waste valorisation as fertilizers based on

humic mater”, Central and Eastern European Committee for Thermal Analysis and Calorimetry (CEEC-TAC 4), 28-31 august, 2017, Chisinau, Moldova.

8. Stepan E., Velea S., Radu E., Enășcuță C.-E., **Oprescu E.-E.**, Radu A., Gaidau C., Epure D.-G., Gidea M., “Microencapsulation of biopesticides based on essential oils”, 6<sup>th</sup> International Congress of Aromatic and Medicinal Plants-CIPAM, 29.05-01.06.2016, Coimbra, Portugalia.

9. Stepan E., Velea S., Blajan O., Enășcuță C.-E., Vasilievici G., **Oprescu E.-E.**, Radu E., Radu A., “Innovative microalgae research for obtaining aviation turbine biofuel”, The European Networks Conference on Algal and Plant Photosynthesis – ENCAPP, 26-29.04. 2016, Malta.

10. **Oprescu, E.-E.**, Cristea, S., Stepan, E., Radu, A., Radu, E., Velea, S., ”Ecological Lubricating Fluid”, 11<sup>th</sup> Edition, ICECHIM, 30 octombrie 2015, Bucuresti, Romania.

11. Stepan E., Velea S., Enascuta C., **Oprescu E.-E.**, Vasilievici G., Radu E., Radu A „Process for obtaining fatty acid methyl esters from microalgae oil”, PRIOCHEM”, 11<sup>th</sup> Edition, ICECHIM, 30 octombrie 2015, Bucuresti, Romania.

12. Radu, E., **Oprescu, E.-E.**, Stepan, E., Stoica, R., Radu, A., Vasilievici, G., Enascuta, C.E., Bombos, M., Bolocan I., „Renewable Solvent with Glycerol Acetal Ester Structure”19<sup>th</sup>, Romanian International Conference on Chemistry and Chemical Engineering (RICCCE) 2-5.09.2015

13. Velea, S., **Oprescu, E.-E.**, Bombos, M., Stepan, E., Vasilievici, G., Bombos D., “Ecological Additives for Motor Fuels Based on Furfural Glycerol Derivatives”, 19<sup>th</sup> Romanian International Conference on Chemistry and Chemical Engineering (RICCCE), 2-5.09.2015, Sibiu, Romania.

14. **Oprescu E.-E.**, Stepan E., C. Popa, Bolocan I., Modeling the synthesis of an oxygenated biofuel additive, 15<sup>th</sup> ANNIVERSARY SGEM GEOCONFERENCE, SGEM, 16-25.06.2015, Albena, Bulgaria.

15. **Oprescu E.-E.**, Velea S., Doncea S.M., Radu A., Stepan E., Bolocan I., Biodiesel from algae oil with high free fatty acid over amphiphilic solid acid catalyst, International Conference ICheaP12, 19-22.05.2015, Milano, Italia.

16. **Oprescu E.-E.**, E. Radu, A. Radu, R. Stoica, E. Stepan, I. Bolocan, Biodiesel by-product valorization as additives for diesel fuel, International Academic Conference on Engineering, Internet and Technology - IAC-EiaT, 12-13.12. 2014, Praga, Cehia.

17. **Oprescu, E. E.**, Bolocan, I., Stepan, E., Bombos, D., Stoica, R., Radu, E., Radu, A., Valorification of biomass byproduct - glycerol as diesel additives/ components”, COFrRoCA - Colloque Franco-Roumaine de Chimie Appliquée, Montpellier, France, september 15-18, 2014.

18. **Oprescu, E. E.**, Bomboș, D., Cristea, S., Călin, C., Stepan, E., Bolocan, I., „Glycerol acetal ester as biofuel additive”, 1<sup>st</sup> International Colloquium Energy and Environmental Protection, Ploiesti, 20- 21.11.2014.

19. Stepan, E., Velea, S., Blajan, O., Crucean, A., Ilie, L., Vasilievici, G., **Oprescu E.-E.**, A. Radu, "Synthetic jet fuel from microalgal biomass", 2nd International Conference: Catalysis for renewable sources: Fuel, Energy, Chemicals", 21-28.07.2013, Lund, Suedia.

20. **Oprescu E.-E.**, Stepan, E., Velea, S., Radu, E., Radu, A., Rosca, P.,”Effect of glycerol ketal on diesel engine emissions”, Simpozionului Internațional "Prioritățile chimiei pentru o dezvoltare durabilă - PRIOCHEM - ed. a IX-a, 24-25 octombrie 2013, București.

21. E. Stepan, S. Velea, **E.-E. Oprescu**, O. Blajan, L. Ilie, G. Vasilievici, E. Radu, A. Radu, "Complete exploitation of microalgal biomass, to obtain synthetic aviation fuel",

Simpozionului Internațional "Prioritățile chimiei pentru o dezvoltare durabilă - PRIOCHEM - ed. a IX-a, 24-25 octombrie 2013, București.

22. **Oprescu, E.-E.**, Stepan, E., Roșca, P., Radu, A., Enășcuță C.E., Green synthesis of cyclohexanone glycerol ketal catalyzed by a solid superacid, Conferința Internațională - "CHIMIA 2012- New trends in applied chemistry", ediția a V-a, Universitatea Ovidiu, 24-26 mai, 2012, Constanța.

23. **Oprescu, E.-E.**, Stepan, E., Roșca, P., Radu, A., Enășcuță C.E., Glycerol compound used as a green component for diesel fuel, 4<sup>th</sup> EuCheMS Chemistry Congress, 26-30 August 2012, Praga, Cehia.

24. **Oprescu, E.-E.**, Stepan, E., Roșca, P., Radu, A., Radu, E., Enășcuță C.E., Synthesis of diesel additive/component from glycerol condensation with methyl ethyl ketone, Simpozion internațional cu participare internațională - Prioritățile Chimiei Pentru O Dezvoltare Durabilă Priochem, ediția a VIII-a, 25 - 26 octombrie 2012, București.

25. Stepan, E., Velea, S., Ilie, L., **Oprescu, E.-E.**, Radu, A., Enascuta, C. E., "Aviation biofuel from microalgal biomass", Simpozionul internațional "cu participare internațională - Prioritățile Chimiei Pentru O Dezvoltare Durabilă Priochem, ediția a VIII-a, 25 - 26 octombrie 2012, București.

#### **F. Numar proiecte câștigate în calitate de Director proiect/Responsabil proiect**

1. Director proiect "Value added products from microalgae biomass applying biorefinery concepts" (2020-2022 - 181 TE /2020), valoare proiect 431900 lei.

2. Responsabil proiect component nr 4 " Valorificarea energetica a digestatului solid din instalatiile de biogaz", în cadrul proiectului complex nr.32 PCCDI/2018/ Creșterea eficienței energetice a instalațiilor de biogaz prin elaborarea sistemului integrat: biogaz-microalge-biocombustibili, în cadrul conceptului de biorafinare"(AlgaeBiogazConcept – Energie).

3. Postdoctoral program (2014 - 2015): "Valorification of products and by-products resulting from biomass processing" – Project number: POSDRU/159/1.5/S/134398.

4. Responsabil proiect, (2015), PN.09.09.02.12, "Ecological fluids with industrial applications".

5. Responsabil proiect, (2013-2014), PN.09.09.02.10/ "Biofuels from waste, obtained by non-alkaline catalysis reactions".

#### **G. Experiența acumulată în alte programe/proiecte naționale/internaționale**

- Proiect nr. 93/2017, EUREKA/Nou tratament pentru seminte pe baza de hidrolizat de collagen, pentru a mari rezistența la seceta la rasărirea plantelor de rapita - membru colectiv de cercetare.

- Proiect nr. 55PTE/2016/Biofertilizanti foliari pe baza de structuri active, inteligente, pentru tratarea culturilor de cereale- membru colectiv de cercetare.

- PNII-PCCA 65-2014 / "Integrated green technology system for producing advanced biofuels"- AdvBioFuels, (2014-2016).

- PNII-PCCA 162-2014 / "Interdisciplinary research on the use of elastic type products based on collage to treat rapeseed crops to increase productivity, and reduce crop losses – RAPESTIK", (2014-2016).

- PN II - PCCA 44-2012 / „Integrated system for producing synthetic aviation fuel from algal biomass” – ALGAL-SAF (2012-2016).
- PN II - PCCA 112-2012 / „ Interdisciplinary research on seed treatment with collagen hydrolysates for quality indicators increasing, pesticide reduction and sustainable development of agriculture production”- GERMOSTIM (2012-2016).
- PN II 69 CI-2012– Innovation Cheques / „Ecological solvent from inedible fats” – 2012.
- PN II 32 104-2008 / „Biodegradable coolant and lubricating fluid with multiple function - BIOFLUM”, (2008-2011).
- PN II 31064-2007 / ”Technologies for green chemistry products, from fat matters – GLI-CO”, (2007-2010).
- PN II 61006-2007 / “New microorganisms capable of enzymatic synthesis of active therapeutic biopolymers, using glycerin (by-product of biodiesel obtaining)”, (2007-2010).
- CEEEX 252 / “Biofertilizers and growth stimulators for sustainable crop plants, additives produced by protein byproducts bio-refining”, (2006-2008).
- CEEEX 709 / “The transesterification of triglycerides in heterogeneous catalysis assisted unconventional energy: ultrasonic and microwave”, (2006-2008).
- CEEEX 2-2005 / “Complex exploitation of some renewable natural resources to obtain biofuels, glycerine and ecological solvents - BIOTECH”, (2005-2008).

**Data**

**12.01.2023**

**Candidat,**

**dr.chim. Sirbu Elena-Emilia**