

Nicoleta Badea Professor

University "POLITEHNICA" Bucharest
Faculty of Chemical Engineering and Biotechnologies
Department of General Chemistry



Contact information "Polizu" Campus, Building: P, Room: 112, 1-7 Gh. Polizu Street, S1, 011061 Bucharest, ROMANIA
e-mail: nicoleta.badea@gmail.com; phone: +40-0214023927

Education and training

Dates	2019
Title of qualification awarded	Habilitation thesis
Principal subjects/occupational skills covered	Chemical engineering
	University POLITEHNICA of Bucharest
Dates	2004
Title of qualification awarded	PhD
Principal subjects/occupational skills covered	Chemistry
Name and type of organization providing education and training	University POLITEHNICA of Bucharest Romania
Level in national or international classification (ISCED 2011)	Doctoral or equivalent (level 8)
Dates	1999
Title of qualification awarded	Master of Science (engineer)
Principal subjects/occupational skills covered	Chemistry, majoring in Applied Physical Chemistry and Electrochemistry
Name and type of organization providing education and training	University POLITEHNICA of Bucharest, Romania
Level in national or international classification (ISCED 2011)	Master or equivalent (level 7)
Dates	1993 – 1998
Title of qualification awarded	Chemical engineer
Principal subjects/occupational skills covered	Biochemical engineer
Name and type of organization providing education and training	Faculty of Industrial Chemistry, University POLITEHNICA of Bucharest.
Level in national or international classification (ISCED 2011)	Bachelor or equivalent (level 6)
<p>- Specializations</p> <ul style="list-style-type: none"> - <i>Advanced analytical techniques in environmental analytical chemistry</i> – summer school organized by European Environmental Research Institute, Ioannina, Greece, 3-8 July 2000 - <i>Specialization risk allocation and advanced analytical techniques for environmental protection</i> - summer school organized by University of Bologna, Italy, 10- 21 July 2000 - <i>Liquid chromatography</i>, ABL & E JASCO Company, Budapest, Hungary 24- 29 January 2000 - <i>Uncertainty evaluation of measured in chemistry labs</i>, course organized by RENAR, 2002 - <i>Principles and Application of Metrology in Chemistry</i>, TrainMIC – Training in Metrology in Chemistry JRC – IRMM Belgium, Bucuresti, 2003 - <i>Quality control in trial labs – statistical methods</i>, organized course by S.C. FIATEST S.R.L, Bucharest 27-29 November 2006 - <i>Uncertainty evaluation of measured in trial labs</i>, organized course by S.C. FIATEST S.R.L, Bucharest 06-08 December 2006 - <i>The validation of trials analyses labs – practical aspects and informatics devices</i>, course organized by S.C. FIATEST S.R.L, Bucharest 13-14 December 2006 <p>Research stages</p> <ul style="list-style-type: none"> - N.C.S. R Demokritos Institute of Physical Chemistry, Evaluation of antioxidant activity of biomolecules using chemiluminescence, 3 – 30 November 2001 - N.C.S. R Demokritos Institute of Physical Chemistry, Evaluation of antioxidant activity of biomolecules using chemiluminescence, 12 May – 30 June 2002 - postdoctoral scholarship, University "Politehnica" of Bucharest, Faculty of Applied Chemistry and Materials Science, Department of Physical-Chemistry, "New composite materials with antioxidant, and photo-protective properties", project coordinator Prof. Dr. Aurelia Meghea; 	

Professional experience

Dates	2020 – present
Occupation or position held	Associate Professor
Name and address of employer	University POLITEHNICA of Bucharest
Dates	2013 – 2020
Occupation or position held	Associate Professor
Name and address of employer	University POLITEHNICA of Bucharest
Type of business or sector	Education
Dates	2006 – 2013
Occupation or position held	Lecturer
Name and address of employer	University POLITEHNICA of Bucharest
Type of business or sector	Education
Dates	01.02.2006 – 01.10.2006
Occupation or position held	Post doc Student
Name and address of employer	University POLITEHNICA of Bucharest
Type of business or sector	Research
Dates	01.09.1999 – 01.02.2006
Occupation or position held	Chemical Engineer
Name and address of employer	University POLITEHNICA of Bucharest
Type of business or sector	Education
Dates	01.09.1998 – 01.09.1999
Occupation or position held	Research assistant
Name and address of employer	University POLITEHNICA of Bucharest
Type of business or sector	Research

Academic and research interests

- Specialty fields:** Physical – chemical characterization of new materials, Chemical kinetics, Chromatography: IC and HPLC, Applied spectroscopy: UV-VIS, IR, fluorescence and chemiluminescence for determination of antioxidant capacity for some chemical compounds, complex combinations and biomolecules.
- Scientific works:**
 - Synthesis and characterization of biohybrid based silver nanoparticles obtained by 'green chemistry' with enhanced properties;
 - Synthesis and characterization lipid nanomaterials with antioxidant and photo-protective properties;
 - Research on selective natural extracts applied in nutrition, cosmetics, pharmacology and therapy, various active principles with antioxidant and photo-protective activity;
 - Synthesis and characterization of hybrid nanomaterials (e.g. vitamins, natural extracts from begonia plant, orange peel ornamental bush and green tea entrapped inside inorganic silica and hybrid organo-siloxanes matrices) by self assembled methods.
- Specialization: main field** – Bio – Chemical engineering; **other fields** – Spectral methods for environmental monitoring, Quantifying Uncertainty in Analytical Measurement.

Teaching activity

<i>Studies</i>	<i>The name of Programme</i>	<i>Code</i>	<i>Course title</i>	<i>Activity type</i>
<i>Bachelor</i>	<i>Electrical systems - IE</i>	<i>F.01.O.004</i>	<i>Chemistry</i>	<i>Course and Practical works</i>
	<i>Applied informatics in Electrical Engineering -IE</i>	<i>F.01.O.004</i>	<i>Chemistry</i>	<i>Course and Practical works</i>
	<i>Instrumentation and data acquisition- IE</i>	<i>F.01.O.004</i>	<i>Chemistry</i>	<i>Course and Practical works</i>
	<i>Automation and Applied Informatics</i>	<i>F.01.O.004</i>	<i>Chemistry</i>	<i>Course and Practical works</i>
	<i>Technology of machines building</i>	<i>06.F.01.O.004</i>	<i>Chemistry</i>	<i>Course and Practical works</i>
	<i>Nanotechnologies and unconventional systems</i>	<i>06.F.01.O.004</i>	<i>Chemistry</i>	<i>Course and Practical works</i>
<i>Master</i>	<i>Expertise chemical products,</i>	<i>MC6S3C16</i>	<i>Dataarea si expertizarea</i>	<i>Course and</i>

	<i>food and materials</i>		<i>operelor de arta si a obiectelor de patrimoniu</i>	<i>Practical works</i>
	<i>Substances, materials and biocompatible systems</i>		<i>Spectro-electrochemistry methods</i>	<i>Practical works</i>

Publication (selective):

1. Chemiluminescence in pro and antioxidant systems with biomedical application, PhD thesis, 2004;
2. Biohybrid based silver nanoparticles and nanostructured lipid carriers as efficient delivery systems for natural and/or synthetic actives, Habilitation thesis, 2019

Books

1. A. Meghea, I. Lacatusu, **N. Badea**, R.Nita, A. Murariu, *Controlled synthesis of nanostructures for materials with multifunctional properties. Vol. 1. Nanostructured self-assembled systems*. Ed. Politehnica Press, 2009, 514 p., ISBN 978-606-515-048-5
2. G. T. Tihan, **N. Badea**, M. D. Ioniță, Laboratory applications and chemistry problems for mechanical faculties. Ed. Politehnica Press, 2009, ISBN:978-606-515-033-1
3. L. Miu, C. Gaidau, M. Giurginca, A. Meghea, **N. Iftimie (Badea)** Evaluation of degradation of patrimony issues from leather and parchment” Ed. Performantica, Iasi, Eb. Performantica, Iași, 2007, ISBN 973-730-132-3.

Chapters

1. I. Lacatusu, **N. Badea**, A. Meghea, “Nanoencapsulation of natural products with multifunctional properties in silica and hybrid organic – silica host matrices" in “Biocompatible Nanomaterials: Synthesis, Characterization and Application in Analytical Chemistry”, editor Sea-Fue Wang, Nova Publisher, ISBN 978-1-61668-677-2, 2010.

Articles (more than 120)

1. Zgura I., **Badea N.**, Enculescu, M., Maraloiu V-A., Ungureanu, C., Barbinta-Patrascu M. E., Burdock-Derived Composites Based on Biogenic Gold, Silver Chloride and Zinc Oxide Particles as Green Multifunctional Platforms for Biomedical Applications and Environmental Protection, *Materials* 2023, 16(3), 1153, DOI: 10.3390/ma16031153
2. Predeanu G; Slăvescu V; Drăgoescu M. F.; Bălănescu N. M.; Fiti A.; Meghea A.; Samoila P.; Harabagiu V.; Ignat M.; Manea-Saghin A.-M; Vasile B. S., **Badea N.**, Green Synthesis of Advanced Carbon Materials Used as Precursors for Adsorbents Applied in Wastewater Treatment, *Materials* 2023, 16(3), 1036; <https://doi.org/10.3390/ma16031036>
3. Lite, MC; Constantinescu, RR; Tanasescu, E.C.; Kuncser, A.; Romanitan, C.; Lacatusu, I.; **Badea, N.** Design of Green Silver Nanoparticles Based on Primula Officinalis Extract for Textile Preservation, *Materials*, 2022, 15, Issue21, Article No 7965, WOS:000881150500001
4. Lite, MC; Constantinescu, RR; Tanasescu, EC; Iordache, OG; **Badea, N.**, Textile artefacts conservation using nanomaterials - Review, *Industria Textila*, 2022, 73 (6) 607-613, WOS:000902061300003
5. Coc, LMC; Lacatusu, I; **Badea, N.**; Penes, O.; Cobelschi, CP; Pop, A.; Meghea, A., Curcumin co-loaded with a lipid mediator in the same nanostructured lipid delivery system, *Farmacia*, 70 (5), 932-943, WOS:000880417600020
6. Barbinta-Patrascu, ME; Ungureanu, C; **Badea, N.**, Iordache, S. M., Optical studies on human hair fibres treated with a natural extract of red tulip flowers, *OAM- Rapid Communications*, 16 (9-10), 458-463, WOS:000880187100009
7. Olaru A.G., Butculescu V., Dumitriu C., **Badea N.**, Popescu S., Ungureanu C., Pirvu C., Biopolymers as intermediate layers for amoxicillin grafting on the antibacterial surface, *Surfaces and Interfaces* 33 (2022) 102224, WOS:000838331800002.
8. Lacatusu I., Balanuca B., Serafim A., Ott C., Prodana M., **Badea N.**, Salicin and Hederacoside C-based extracts and UV-absorbers co-loaded into bioactive lipid nanocarriers with promoted skin antiaging and hydrating efficacy, *Nanomaterials*, 2022, 12(14), 2362, WOS:000831780700001.
9. Barbinta-Patrascu, M.-E., **Badea, N.**, Zgura I., Novel green nanotechnologies applied in environmental protection and health, *Materials* 2022, 15, 5297, WOS:000839030200001.
10. Iordache T.A., **Badea N.**, Mihaila M., Crișan S., Pop A. L., Lacatusu I., Challenges in coopted hydrophilic and lipophilic herbal bioactives in the same lipid nanocarriers for effective bioavailability and anti-inflammatory, *Nanomaterials*, 2021, 11(11), 3035; WOS:000726664900001
11. Lacatusu I., Iordache T. A., Mihaila M., Pop A. L., **Badea N.**, Mihaiescu D. E., Multifaced role of dual herbal principles loaded - lipid nanocarriers in providing high therapeutic efficacy, *Pharmaceutics* 2021, 13(9), 1511, WOS:000701582700001

12. Gorshkova, Y.; Barbinta-Patrascu, M.-E.; Bokuchava, G.; **Badea, N.**; Ungureanu, C.; Lazea-Stoyanova, A.; Raileanu, M.; Bacalum, M.; Turchenko, V.; Zhigunov, A.; et al. Biological Performances of Plasmonic Biohybrids Based on Phyto-Silver/Silver Chloride Nanoparticles. *Nanomaterials* 2021, 11, 1811;
13. Barbinta-Patrascu, M.-E.; Gorshkova, Y.; Ungureanu, C.; **Badea, N.**; Bokuchava, G.; Lazea-Stoyanova, A.; Bacalum, M.; Zhigunov, A.; Petrović, S. Characterization and Antitumoral Activity of Biohybrids Based on Turmeric and Silver/Silver Chloride Nanoparticles. *Materials* 2021, 14, 4726.
14. Iordache T.-A, Coc L.M.C., Mihai A. L., **Badea N.**, Lacatusu I., Meghea A, The influence of vegetable oil and self-organizing agents composition on obtaining stable nanostructured lipid carriers, in *UPB Sci. Bull. B: Chem. Mater. Sci.*, acceptat, ID 11896;
15. Coc, LMC, Lacatusu, I, **Badea N.** Barbinta-Patrascu, ME, Effective lipid nanocarriers based on linseed oil for delivery of natural polyphenolic active, *Journal of Nanomaterials*, 2021, 8853941, WOS:000621082400001;
16. Barbinta-Patrascu, ME, Nichita, C, **Badea N.**, Ungureanu, C, Bacalum, M, Zgura, I, Iosif, L, Antohe, S, Biophysical aspects of bio-nanosilver generated from urtica dioica leaves and vitis vinifera fruits' extracts, *Romanian Reports in Physics*, 73(1), 601, 2021, WOS:000631705400011;
17. Lacatusu, I. D. Istrati, N. Bordei, M. Popescu, A.M. Seciu, L.M. Panteli, **Badea N.***, Synergism of plant extract and vegetable oils-based lipid nanocarriers: Emerging trends in development of advanced cosmetic prototype products, *Mat. Sci. Eng. C*, 108, 2020, 2020, 110412 (15 pp); WOS: 000510956400041;
18. Arsenie, L.V, Lacatusu, I. Oprea, O. ,Bordei, N. , Bacalum, M., **Badea N.**, Azelaic acid-willow bark extract-panthenol – Loaded lipid nanocarriers improve the hydration effect and antioxidant action of cosmetic formulations, *Ind. Crop. Prod.*, 154, 2020, Article no. 112658, (13 pp); WOS:000554526900045;
19. Barbinta-Patrascu M.E., Badea N., Ungureanu C., Besliu D., Antohe S., Bioactive phyto-nanosilver particles “green” synthesized from clary sage, burdock, southernwood and asparagus, (2020) *Romanian Reports in Physics*, 72 (3) , art. no. 606 , pp. 1-13. ISI:1.940
20. Barbinta-Patrascu, M.E., Ungureanu, C., **Badea, N.**, Bacalum, M. Lazea-Stoyanova, A. Zgura, I. Negrila, C, Enculescu, M., Burnei, C., Novel ecogenic plasmonic biohybrids as multifunctional bioactive coatings, *Coatings*, 10(7), 2020, 659 (23pp);
21. Bratu, A., Ott, C., Balanuca, B., **Badea, N.**, Lacatusu, I., The association effect of cocoa butter with vegetable oils on the obtaining of lipid nanocarriers loaded with antidepressant and antipsychotic drugs, *Revue Roumaine de Chimie* 65(1), 2020, 57-67;
22. Barbinta-Patrascu, ME, **Badea N.**, Bacalum, M , Antohe, S, Novel bio-friendly nanomaterials based on artificial cell membranes, chitosan and silver nanoparticles phytogenerated from *Eugenia Caryophyllata* buds: eco-synthesis, characterization and evaluation of bioactivities, *Romanian Reports in Physics*, 2020, 72 (1), 601, WOS:000519541700014
23. Lacatusu I., Istrati D., Bordei N., Popescu M, Seciu A.M., Panteli L.M., Badea N*., Synergism of plant extract and vegetable oils-based lipid nanocarriers: Emerging trends in development of advanced cosmetic prototype products, *Mat. Sci. Eng. C*, 108, 2020, 110412; WOS: 00051095640004
24. **N. Badea**, M. M. Craciun, A. S. Dragomir, M. Balas, A. Dinischiotu, C. Nistor, C. Gavan, D. Ionita:Systems based on carbon nanotubes with potential in cancer therapy, *Mat Chem. Phys.* 2020, 241,122435;
25. I. Lacatusu, D. Istrati, N. Bordei, M. Popescu, A.M. Seciu, L.M. Panteli, N. Badea, Synergism of plant extract and vegetable oils-based lipid nanocarriers: Emerging trends in development of advanced cosmetic prototype products, *Mat. Sci. Eng. C*, 108, 2020, 2020, 110412;
26. Besliu D., Barbinta-Patrascu M. E., Badea N., Rau I., Meghea A Lipo-nanosilver composites biogenerated using *Artemisia abrotanum* L. aqueous extract, *Molecular Crystals and Liquid Crystals*, 2020, 10.1080/15421406.2020.1723895
27. Lacatusu I., **Badea N.**, Badea G, Mihaila M, Ott C, Stan R., Meghe A., Advanced bioactive lipid nanocarriers loaded with natural and synthetic anti-inflammatory actives, *Chem. Eng. Sci.*, 200, 113-126; WOS:000461418000011;
28. Barbinta-Patrascu, M.E. **Badea, N.**, Bacalum, M., Ungureanu, C., Bunghez-Suica R.I., Iordache S.M., Zgura Irina, Maraloiu V.A, 3D hybrid structures based on biomimetic membranes and *Caryophyllus aromaticus* - “green” synthesized nano-silver with improved bioperformances, *Mat. Sci. Eng. C*, 101, 120-137, 2019;
29. Lacatusu I., **Badea N.**, Udeanu D., Coc L., Pop A, Cioates Negut C., Tanase C.,Stan R., Meghe A., Improved anti-obesity effect of herbal active and endogenous lipids co-loaded lipid nanocarriers: preparation, in vitro and in vivo evaluation, *Material Science and Engineering C*, 2019, 99, 12-24.
30. Barbinta-Patrascu ME, **Badea N**, Constantin M, Ungureanu, C., Nichita C., Iordache, Vlad A., Antohe S., Bio-activity of organic/inorganic phyto-generated composites in bio-inspired systems, *Romanian Journal of Physics*, 63 (5-6), 702, 2018, WOS:000440033800008;
31. Lacatusu I., Arsene LV, Badea G., Popa O., Oprea O., **Badea N.**, New cosmetic formulations with broad photoprotective and antioxidative activities designed by amaranth and pumpkin seed oils nanocarriers, *Industrial Crops and Products*, 123, 424-433,2018, WOS:000447103900048;
32. Lacatusu I., Badea G., Popescu M., Bordei N., Istrati D., Moldovan L., Seciu A.M., Pandeli M.I., Rasit I., **Badea N.**, Marigold extract, azelaic acid and black caraway oil into lipid nanocarriers provides a strong anti-inflammatory effect *in vivo*, *Industrial Crops and Products*, 2017, 109, 141-150, ISSN 09266690, WOS:000413880300018.
33. Barbinta-Patrascu, M.E. **Badea, N.** , Ungureanu, C. , Pirvu, C. , Iftimie, V , Antohe, S. Photophysical studies on biocomposites based on carbon nanotubes and chlorophyll-loaded biomimetic membranes, *Romanian Reports in Physics*,69, 1, 2017, 604; WOS:000401305200018

34. Barbinta-Patrascu, M.E., **Badea, N.**, Ungureanu, C., Iordache, S.M., Constantin, M., Purcar, V. Rau, I. Pirvu, C. , Ecobiophysical aspects on nanosilver biogenerated from citrus reticulata peels, as potential biopesticide for controlling pathogens and wetland plants in aquatic media, *Journal of Nanomaterials*, 2017, article no 4214017; WOS:000405149800001;
35. Badea G., **Badea N.**, Brasoveanu L. I., Mihaila M., Stan R., Istrati D., Balaci T., Lacatusu I., Naringenin improves the sunscreen performance of hydrogel formulations based on vegetable nanocarriers, *New Chem. J.*, 2017,41, 480- 492, WOS:000393887200011;
36. Lacatusu, I. Badea, N., Badea, G. , Brasoveanu, L., Stan, R., Ott, C, Oprea, O, Meghea, A. Ivy leaves extract based - Lipid nanocarriers and their bioefficacy on antioxidant and antitumor activities, *RSC Advances* 6 (81), 2016, 77243-77255, WOS:000382482200015;
37. Barbinta Patrascu, M.E. ,**Badea, N.**, Ungureanu, C., Bunghez Raluca, I., Rau, I. Gold and silver geranium biocomposites, *Molecular Crystals and Liquid Crystals*, 627, 1, 190-197, 2016, WOS:000378124600024;
38. Barbinta-Patrascu, M.E.: **Badea, N***: Ungureanu, C, Constantin, M, Pirvu, C., Rau, I. Silver-based biohybrids "green" synthesized from Chelidonium majus L., *Optical Materials*, 56, 94-99, 2016, WOS:000375517200018
39. Istrati D., Lacatusu I., Bordei N., Badea G., Oprea O., Stefan L.M., Stan R., **Badea N. ***, Meghea A., Phyto-mediated nanostructured vehicles based on dual vegetable actives involved in the prevention of cellular damage, *Material Science and Engineering C*, 64, 249-259, ISSN 0928-4931; WOS:000376547700030.
40. Barbinta-Patrascu, M.E. **Badea, N.*** , Pirvu, C.: Bacalum, M., Ungureanu, C., Nadejde, P.L., Ion, C.: Rau, I.: Multifunctional soft hybrid bio-platforms based on nano-silver and natural compounds, *Materials Science and Engineering: C*, 69, 922-932, 2016, WOS:000383930900106.
41. **M. E. Barbinta-Patrascu**, S. M. Iordache, A. M. Iordache, N. Badea, C. Ungureanu. Nanobioarchitectures based on chlorophyll photopigment, artificial lipid bilayers and carbon nanotubes, *Beilstein J. Nanotechnol.*, 5, 2316-2325, 2014; doi:10.3762/bjnano.5.240 , WOS:000346612600002
42. C. Ott, I. Lacatusu, G. Badea, I. A. Grafu, D. Istrati, N. Babeanu, R. Stan,, Badea N., A. Meghea, Exploitation of amaranth oil fractions enriched in squalene for dual delivery of hydrophilic and lipophilic actives, *Industrial Crops and Products*, 77, 342–352, 2015, WOS:000366065200041.
43. Lacatusu, I., Badea, N., Badea, G., Oprea, O., Mihaila, M.A., Kaya, D.A., Stan, R., Meghea, A. Lipid nanocarriers based on natural oils with high activity against oxygen free radicals and tumor cell proliferation, *Materials Science and Engineering C*, 56, 2015, 88-94, ISSN: 0928-4931, WOS:000359873900011;
44. Badea, G., Lacatusu, I., Ott, C., **Badea, N.**, Grafu, I., Meghea, A. Integrative approach in prevention and therapy of basal cellular carcinoma by association of three actives loaded into lipid nanocarriers, *Journal of Photochemistry and Photobiology B: Biology*, 147, 2015, 1-8., ISSN: 1011-1344, WOS:000354156000001;
45. E. Mitrea, I. Lacatusu, **N. Badea**, C. Ott, O Oprea, A. Meghea , New approach to prepare willow bark extract – lipid based nanosystems with enhanced antioxidant activity, *J. Nanosci. Nanotechnol.*, 15 (6) 2015, 4080-4089, ISSN: 1533-4880, WOS:000347435300009.
46. G. Badea, I. Lacatusu, **N. Badea**, C. Ott, A. Meghea, Use of various vegetable oils in designing photoprotective nanostructured formulations for UV protection and antioxidant activity, *Industrial Crops and Products* 67 (2015) 18–24, WOS:000352039600004;
47. M. E. Barbinta-Patrascu, C. Ungureanu, S. M. Iordache, , I. R. Bunghez, N. Badea, I. Rau, "Green silver nanobioarchitectures with amplified antioxidant and antimicrobial properties" *Journal of Materials Chemistry B*. 2 (21), pp. 3221-3231, ISSN 2050-750X, WOS:000336072400007.
48. I. Lacatusu, N. Badea, G. Niculae, N. Bordei, R. Stan, A. Meghea, Lipid nanocarriers based on natural compounds: an evolving role in further plant extracts delivery, *Eur. J. Lipid Sci. Tehnol*, 116, 2014, 116, 1708–1717, ISSN: 1438-9312, WOS:000346068700013.
49. M. E. Barbinta-Patrascu, C. Ungureanu, S. M. Iordache, A. M. Iordache, I. R. Bunghez, Marius Ghiurea, N. Badea, R. C. Fierascu, I. Stamatin, Eco-designed biohybrids based on liposomes, mint-nanosilver and carbon nanotubes for antioxidant and antimicrobial coating, *Materials Science and Engineering: C*, 39, 2014, Pages 177–185, ISSN: 0928-4931, WOS:000343949200025.
50. I. Lacatusu, G. Niculae, N. Badea, R. Stan, A. Meghea , Influence of vegetable oil on the synthesis of bioactive nanocarriers with broad spectrum photoprotection, *Central European Journal of Chemistry*, DOI 10.2478/s11532-014-0503-9, ISSN 1895-1066, WOS:000335552400004.
51. I. Lacatusu, G. Niculae, N. Badea, R. Stan, O. Popa, O. Oprea, A. Meghea, Design of soft lipid nanocarriers based on bioactive vegetable oils with multiple health beneficiaries, *Chemical Engineering Journal*, 246C (2014), pp. 311-321, DOI information: 10.1016/j.cej.2014.02.041, ISSN: 1385-8947, WOS:000335275000035.
52. G. Niculae, I. Lacatusu, N. Badea, R. Stan, B. S. Vasile, A. Meghea , Rice bran and raspberry seed oil-based nanocarriers with self-antioxidative properties as safe photoprotective formulations, *Photochem. Photobiol. Sci.*, 2014, 13 (4), 703 - 716, ISSN 1474-9092, WOS: 000333093000009;
53. Lacatusu I., Mitrea, E., **Badea N***, Stan R., Oprea O., Meghea A., Lipid nanoparticles based on omega-3 fatty acids as effective carriers for lutein delivery. Preparation and *in vitro* characterization studies, *Journal of Functional Foods*, 5, 1 2 6 0 –1 2 6 9, 2013, ISSN 1756-4646, WOS: 000322691600027.
54. Niculae G., **Badea N.**, Meghea A., Oprea O., Lacatusu I., Co-encapsulation of butyl-methoxydibenzoylmethane and octocrylene into lipid nanocarriers: UV performance, photostability and *in Vitro* release, *Photochemistry and Photobiology*, 89, 5, 2013,1085-1094, DOI: 10.1111/php.12117, 2013, ISSN 1751-1097, WOS:000324033900011. Barbinta-Patrascu M.E., Bunghez I.R., Iordache S. M., **Badea N.***, Fierascu R.C. ., Ion R. M., Antioxidant properties of biohybrids based on liposomes and sage silver nanoparticles, *J. Nanosci. Nanotechnol.* 13, 2051-2060, 2013, ISSN: 1533-4880, WOS: 000319027300081.

55. I. Lacatusu, **N. Badea**, O. Oprea, D. Bojin, A. Meghea, Antioxidant activity of solid lipid nanoparticles loaded with umbelliferone, *Soft materials*, 11 (1), 75 - 84, 2013, ISSN 1539-445X, WOS:000312440900011.
56. Barbanța Patrascu M. E., **Badea N.***, MEGHEA A., Oxidative stress studies on plant DNA exposed to ozone, *J of optoelectronics and advanced materials*, 15, 5-6, 2013, 589 – 594, ISSN 1454-4164, WOS:000322288200036.
57. Feraru D.L., Meghea A., **Badea N.***, Forensic discrimination of ballpoint pen inks based on correlation of data obtained by optical and spectral methods, *REV. CHIM*, 64 (1) 74 -80, 2013, ISSN 0034-7752, WOS:000315934900013;
58. Lacatusu I., **Badea N.***, Oprea O., Bojin D., Meghea A., Highly antioxidant carotene-lipid nanocarriers: synthesis and antibacterial activity, *J Nanopart Res.*, 14, 902 - 915, 2012, ISSN:1388-0764 , WOS:000305328900035;
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114. **Papadopoulos, K., Triantis, T., Tsagaraki, K., Dimotikali, D., Iftimie (Badea) N., Meghea, A.**, “Studies on the photostorage chemiluminescence of aromatic ketones with reactive oxygen species. Prospects for analytical application”, *J. Photochemistry and Photobiology A, Chemistry*, **152** (1-3) 11-16, 2002, ISSN 1010-6030, WOS:000178202600002.

Projects Research (2007 -2020)

1. PN-III-P2-2.1-PED-2016-1337, Enhancing immobilization enzymatic biotechnology of alkaline phosphatase in achievement some implantable materials performance, 2017-2018, researcher;
2. PCE_PN-II-ID-PCE-2012-4-0111, Bio-active lipid nanocarriers for co-encapsulation of selective vegetal extracts with enhanced pharmaco-cosmetic performance, 2014-2016, researcher;
3. PN-II-PT- PCCA-2013-4-1761, Safe bio-cosmeceuticals based on vegetable oils and phytochemicals for acne treatment, 2014-2017, researcher;
4. PN-II-PT-PCCA 132/2012, Innovative drugs with high therapeutic potential from vegetable resources”, SQMEDI, 2012 – 2015, researcher.
5. POSDRU/86/1.2/S/56711-Calitatea și expertiza în elaborarea și implementarea metodologiei de obținere și testare de produse competitive prin formarea profesională în cadrul unor noi programe de master cu impact major pe piața muncii, 2010 -2013, Asistent manager proiect.
6. Bilateral Project Romania – Moldova Republic 429/2010, Obtaining and exploiting new products for dermatological use based on natural extracts with enhanced therapeutic properties, 2010-2012, Project Manager
7. CNCSIS Project no 433/01.10.2007 - A new class of nanobiomaterials obtained by self-assembling of some organo-siloxanes containing interstitial embedded lipid nanocapsules (LNC) with multifunctional proprieties, 2007 – 2010, researcher.

8. PNI - 61014/14.09.07, Flavonoid bioproducts as modulators in oxidative stress proteomic, with profilactic and therapeutic activities, 2007-2010, Responsible project UPB.
9. PN I - 91-009/2007- Complex system by imagistic techniques by investigation/diagnostic/restoration multilayer structures by historical monuments, 2007-2010, Responsible project UPB.
10. CEEX, ET 130, Fluorescent nanostructures based on DNA bonded complex compounds for optoelectronic devices, 2006-2007; Project Manager
11. MCT Program CEEX 05-D8-14/04.10.2006, Multidisciplinary research and monitoring of some under restoration monuments from Romania, 2005 – 2007;
12. CNCISIS AT, cod 50, The testing of the capacity of some composition and products based on natural plants extracts to protect against UV radiation., 2003 – 2005, Project Manager

Other information

- **Patent**

B1. Meghea A., Lăcătușu I., **Badea N.**, Niță R., Iosub I. „*Proceeding by immobilization of orange peel extract in silica-silsesquioxane matrix*””, no RO 123252/29.04.2011

B2. Nichita, C., Neagu, G., Vulturescu, V.C., Albulescu, R.N., Nita, S., Bazdoaca C.M., Codorean, E., Albulescu, L., Meghea, A., **Badea, N.M.**, Popescu, I.D., Tanase, C., Raducan, E., *Plant-based flavonoidic bioproduct proflav and process for preparing the same*”, no. RO127270/ 30.05.2013, Derwent Primary Accession Number: 2012-G25388 [39]

B3. Negreanu-Pirjol, B.S., Negreanu-Pirjol, T., Meghea, A., Nastac, M., Paraschiv, G.M., Bratu, M.M., Sirbu, R., Roncea, F.N., Bucur, L.A., **Badea, N.**, Meghea, I., Baltă, A.G., Gheorghiu, A.K., Zuliang, L., Are Pedersen, „*Environmental friendly biocomposite fertilizer and procedure for its obtaining*”, no RO126038/ 30.05.2013-A0,-B1, Derwent Primary Accession Number: 2011-C27487 [39]

B4. **Badea N.**, Bratu M M, Bucur L A, Calinescu M, Calinescu O, Coroiu V, Dumitru F, Gorun E, Guran C, Meghea A, Moldovan L, Negreanu-Pirjol B S, Negreanu-Pirjol T, Nitu B F, Oancea A, Stoicescu M R, Stoicescu R, Bratu M, Bucur L, Negreanu-Pirjol B, Stoicescu M, *Metal chlorhexidine complexes with disinfecting effect and process for preparing the same*, no. RO127465/29.11.2013; Derwent Primary Accession Number: 2012-H46158 [81]

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B7. Negreanu-Pirjol T, Negreanu-Pirjol B S, Guran C, Calinescu M, Oancea A, Gorun E, Roncea F N, Dumitru F, Meghea A, Badea N, Taralunga G, Sirbu R, Moldovan L, Negreanu-Pirjol B, Roncea F, *Pharmaceutical bioadhesive gel-type preparations based on chlorhexidine metal complexes and process for preparing the same*, no: RO127726/ 29.11.2013; Derwent Primary Accession Number: 2012-P88070 [81]

B8. Negreanu-Pirjol T, Negreanu-Pirjol B S, Guran C, Calinescu M, Oancea A, Gorun E, Roncea F N, Dumitru F, Meghea A, Badea N, Taralunga G, Sirbu R, Moldovan L, Mirea M, Negreanu-Pirjol B, Roncea F, *Pharmaceutical cream-type preparations based on metal complexes of chlorhexidine and process for preparing the same*, no RO127721/ 29.11. 2013 Derwent Primary Accession Number: 2012-P88132 [81]

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B10. Badea G., Lacatusu I., **Badea N.**, Stan R., Meghea A., Lipid Nanocarriers based on vegetal oils with photoprotective and antioxidant properties, RO130098, Publ. date 29.11.2018.

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- **Scientific Reviewer** for: *Pharmaceutics, Nanomaterials. Colloids and Surfaces B: Biointerfaces. Colloids and Surfaces A, Arabian Journal of Chemistry, Materials Science and Engineering C, Industrial Crops and Products, Innovative Food Science and Emerging Technologies, Trends in Food Science and Technology, Journal of Applied Polymer Science, BioEnergy Research, Journal of Nanoparticle Research*
- **Hirsch Index: 25** (Scopus); **958 citations**; (without self-citations – Scopus 10.03.2023);
- **Expert evaluator** for **National Program PN I**
- **Membre in organizing committee** for 7th International Conference on Polymers and Advanced Materials (ICFPAM), Emerging and Transferring New Technologies, Bucharest, 10 – 15 June 2003;
- **Guest Editor**, Proceedings of International Symposium „The Environment and Industry”, 28-30 October 2009, Bucuresti, Workshop European Industry – Academia Partnership, ISBN: 9780606 - 507;
- **Guest Editor**, Proceedings of RICCCCE XVI, 9-12 Sept 2009, Sinaia, Romania, Workshop: „Development of strategic academia – industry partnership for knowledge management in environmental friendly technologies”, ISSN: 2066-8341

- **Guest Editor** – *Special Issue "Novel Green Nanotechnologies Applied in Environmental Protection and Health"*, *Materials* (MDPI, Basel), 2022-2023, https://www.mdpi.com/journal/materials/special_issues/greentech_environmental_health;
- **Guest Editor** – *Special Issue: Green Design of Bio-Multifunctional Materials*, *Journal of Nanomaterials* (<https://www.hindawi.com/journals/jnm/si/163672/>)

Honors and Awards - Invention

2017: **Gold Medal**, PRO INVENT, Cluj Napoca.

2014: **Gold Medal**, EUROINVENT, Iasi.

2012: **Silver Medal and Glory Medal** at the International Saloon *Ideas - Inventions - New Products* - iENA 2012, Nuremberg, Germany