CURRICULUM VITAE

Name: Raluca-Nicoleta, **Surname**: Darie-Niță
Date and place of birth: December 03, 1976, Iași, Romania
Nationality: Romanian, **Sex**: female
Permanent job address: Laboratory of Physical Chemistry of Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Romanian Academy, 41A Grigore Ghica Vodă Alley, 700487 Iaşi, Romania; Tel.: +40-232-217454, Fax: +40-232-211299, E-mail: darier@icmpp.ro

Educational background:
1. **Ph.D. degree** – April, 2009: "P. Poni" Institute of Macromolecular Chemistry, Iaşi, Romanian Academy, Romania. Ph.D. thesis title: "*Combined solutions for complex polymeric systems compatibilization and polymeric waste valorisation*", co-supervisors: Dr. C. Vasile, "P. Poni" Institute of Macromolecular Chemistry, Iaşi, Romania and Prof. M. Kozlowski, Wroclaw University of Technology, Wroclaw, Poland.
2. **M.Sc. degree** – July 2001: Faculty of Chemistry, "Al. I. Cuza" University, Iaşi, Romania. Speciality: ""Physical - Organic Chemistry", M.Sc. project title: "*Functionalization of Polyolefins*", supervised by Dr. C. Vasile.
3. **B.Sc. degree** – July 1999: Faculty of Chemistry, "Al. I. Cuza" University, Iaşi, Romania. Speciality: "Chemistry and Physics", B.Sc. project title: "*Photostabilisers for Macromolecular Compounds* ", supervised by prof. V. Sunel.

Languages knowledge: Romanian – mother tongue; English – excellent; French – satisfactory

Job experience:
1. 1999 – present: Researcher (2020: CS II; 2015: CS III; 2010: CS; 1999: AC), Laboratory of Physical Chemistry of Polymers, "Petru Poni" Institute of Macromolecular Chemistry, Iaşi, Romania.
2. April 2010 – March 2013: post-doctoral fellow "Cristofor I. Simionescu" (POSDRU/89/1.5/S/55216), "Petru Poni" Institute of Macromolecular Chemistry, Iasi, research theme "*Recovery of synthetic polymer waste and products derived from plant biomass in order to obtain new biodegradable materials*/ *Valorificarea deşeurilor de polimeri sintetici şi a unor produse derivate din biomasa vegetală în vederea obţinerii unor noi materiale biodegradabile";*
3. July 2016, September 2015, June – July 2014, October 2013, June-August 2012, July 2011, October 2010; November 2009; November 2008; October –November 2007, October 2006, June and October – December 2005, Academic Exchange Program – collaboration between Romanian Academy and Polish Academy of Science and foreign visitor researcher at Materials Recycling Centre of Excellence, Department of Environmental Engineering, Wroclaw University of Technology, Wroclaw, Poland, Prof. Dr. Marek Kozlowski; themes of research: *"Compatibilization of complex systems and valorization of polymer waste", "Obtaining and characterization of composites containing recycled materials and biomass derivatives*" and *"Mechanical behaviour of polymeric materials to accelerated weathering*";
4. February – March 2012 and February – March 2011, postdoctoral research fellowships financed by European Social Fund – „Cristofor I. Simionescu" Postdoctoral Fellowship Programme (ID POSDRU/89/1.5/S/55216), at Centre de Mise en Forme des Matériaux

(CEMEF), Sophia-Antipolis, France, dr. Tania Budtova; theme of research: *"Rheo-optical studies of materials containing biomass derivatives*";

5. March – April 2007 and March – May 2006, research fellowship at Utrecht University, Copernicus Institute for Sustainable Development and Innovation, Department of Science, Technology and Society, Utrecht, The Netherlands, prof. Martin K. Patel, theme of research: "*Life Cycle Assessment (LCA) of recycled polymer materials for structural applications*";
6. November 2000 – January 2001, and October - December 2001, fellowship EC-CEEPUS, Network PL 105 on Polymer Engineering and Recycling at Institute of Materials Science and Applied Mechanics, Technical University of Wroclaw, Poland, Prof. Assoc. Dr. Marek Kozlowski; theme of research: *"Utilization of functionalized polyolefins as compatibilizers in polymer mixtures*".

Main scientific interests: melt functionalization of polyolefins; melt processing of multifunctional composite materials (virgin and waste/recycled); reactive compatibilization of complex polymer systems (natural and synthetic); physico-chemical characterization of polymers and composites; development of materials for food packaging and structural applications; durability testing of plastic materials (accelerated weathering, external factors influence), characterization of hydrogels from synthetic and natural polymers for controlled release of drugs or packaging applications; preliminary studies on life cycle assessment (LCA) of recycled polymer materials for structural applications

Experience in analysis and experimental techniques: reactive processing of polymers (internal mixer, single and twin-screw extruder); mechanical tests (tensile, impact – Charpy and Izod, hardness, abrasion); rheological tests of polymeric melts or hydrogels (shear, oscillatory flows, rheo-optic, DMTA); thermal analysis methods (TG-DTG, DSC); FTIR spectroscopy, optical and electronic microscopy (SEM); surface testing (contact angle, AFM, gas permeability); LCA - preliminary studies.

Scientific results: 1 book, 8 chapters in books, 63 articles in journals (53 ISI), 26 papers in symposium books, 4 conferences, 55 oral communications, 103 posters in national and international conferences, more than 30 paper reviews, total citations over 700; h-index – Web of Science: 17 (Darie R – author and Poni – address, or Darie-Nita R – author and Poni – address, or Darie Nita R – author and Poni – address); research projects: 20 national (2 as director), 11 international, 3 patents (1 international).

Research Grants - Selection:

1. (2014-2017) EEA Grants Romania – Norway 1SEE/30.06.2014 "Improving Food Safety through the Development and Implementation of Active and Biodegradable Food Packaging Systems" – ACTIBIOSAFE – 900 000 EUR total, 165 000 EUR PPIMC (project coordinator), www.actibiosafe.ro; – responsible of project administration;
2. (2014-2017) Project Erasmus + TLIRMP 2014-1-PL01-KA203-003611 „Joint innovative training and teaching/learning program in enhancing development and transfer knowledge of application of ionizing radiation in materials processing", 336 190 EUR total (PPIMC: 44 416 EUR) – team member;

3. (2010-2012) EUREKA E! 4952 – „New technologies for bioactive packaging obtaining" BIOPACKAGING, 0.66 M EUR total (PPIMC: 135 000 RON ~ 40 000 EUR) - team member;
4. (2009-2013) FP7-NMP-2008-LARGE2-228589 "Forest biorefineries: Added-value from chemicals and polymers by new integrated separation, fractionation and upgrading technologies" – AFORE; 10 746 919 EUR total, (PPIMC: 244 080 EUR), https://cordis.europa.eu/project/rcn/94657/factsheet/en; – team member;
5. (2006-2009) EUREKA E! 3523 47/20.12.2006 – "Plastics recycling technology using the re-melting and re-stabilization method" / "Valorisation of polyethyleneterephtalate and some other secondary polymers in composites and nanocomposites with medium and long lifetime", REC-PLASTICS ; 75.000 lei (~20 000 euro)- team member;
6. (2007-2008) Grant CNCSIS TD-546 219/1.10.2007 – "Combined Solutions for Compatibilization of Complex Systems and Polymeric Waste Valorification" , 14 540 lei – *project director*;
7. (2003-2004) Grant CNCSIS AT 33527/01.07.2003 - theme 3 Cod 404, – „Reactive compatibilization of some complex polymer systems"; 90.600 mii lei - *project director.*

List of Scientific Results

Book:
1. **R. Darie**, C. Vasile, M. Kozlowski, Compatibilization of complex polymeric systems, LAP Lambert Academic Publishing, Germany, 292 p., ISBN 978-3-8443-1225-6 (2011).

Book chapters:
1. **R.N. Darie-Niță,** C. Vasile, Chap. 16: Halloysite containing composites for food packaging applications In: *Composite materials for food packaging*, Eds. Giuseppe Cirillo, M.A. Kozlowski, U. Gianfranco Spizzirri, Wiley-VCH Verlag GmbH & Co. KGaA, ©2018 Scrivener Publishing LLC, https://doi.org/10.1002/9781119160243.ch2, Print ISBN:9781119160205 |Online ISBN:9781119160243 p.73-122 (2018);
2. D.E. Ciolacu, **R.N. Darie**, Chap. 11: Nanocomposites Based on Cellulose, Hemicelluloses, and Lignin, In *Nanomaterials and Nanocomposites: Zero- to Three-Dimensional Materials and Their Composites*, Eds. Visakh P.M.**,** Maria José Martínez Morlanes, DOI: 10.1002/9783527683772.ch11, Wiley-VCH Verlag GmbH & Co. KGaA, p. 391-434 (2016);
3. C. Vasile, **R.N. Darie-Nita**, E. Parparita, Chap.10: Performance of biomass filled polyolefin composites, In *Biocomposites: Design and Mechanical Performance*, 1st Edition, Eds. Manjusri Misra, Jitendra Pandey, Amar Mohanty, Elsevier Woodhead Publishing, ISBN: 978-1-78242-373-7, 524 pages, p. 257-302 (2015);
4. I. Spiridon, C.A. Teaca, **R.N. Darie**, R. Bodirlau, A.M. Resmerita, Chap. 10: Biocomposites based on Cellulose Material (Poplar Seed Floss) and High Density Polyethylene: Accelerated Weathering Behaviour, In *Biomass-based Biocomposites*, Eds. Vijay Kumar Thakur and Amar Singh Singha, Smithers Rapra Technology Ltd, Shawbury, Shrewsbury, Shropshire, SY4 4NR, UK, 193-228 (2013);
5. C. Vasile, G. Cazacu, R. P. Dumitriu, **R. Darie**, I. E. Răschip, Chap 7: Some Aspects Concerning The Nanomaterials From Renewable Resources Use In Food Packaging, In: *Ecosustainable Polymer Nanomaterials For Food Packaging. Innovative Solutions,*

Characterization Needs, Safety And Environmental Issues, Eds. C. Silvestre and S. Cimmino, CRC Press – 404 pages, p. 169-193 (2013);
6. **R.N. Darie**, Cap III Active packaging based on polyolefins, in „New polymeric packages for food" (Noi ambalaje polimerice pentru alimente), eds. C. Vasile, C.N. Cheaburu, 71-95, Ed. PIM, Iasi ISBN-978-606-13-0009-9 (2010);
7. **R.N. Darie**, G. Constantinescu, G. Cazacu, C. Vasile, Cap I (Part II) Compatibilization of polymeric blends (Compatibilizarea amestecurilor polimere), in *«Binders, composites and other applications based on lignins* (*Adezivi, materiale compozite şi alte aplicaţii pe bază de lignină)*», eds. M. Totolin, G. Cazacu, p. 90-126, Ed. PIM, Iasi, ISBN 606-520-740-3 (2010) ;
8. D. Ciolacu, **R.N. Darie**, G. Cazacu, Cap IV (Part II) Polymeric systems based on lignin – poly(vinyl alcohol) (Sisteme polimerice pe baza de lignină-alcool poli(vinilic)), in *«Binders, composites and other applications based on lignins* (*Adezivi, materiale compozite şi alte aplicaţii pe bază de lignină)»*, eds. M. Totolin, G. Cazacu, p. 170-194, Ed. PIM, Iasi, ISBN 606-520-740-3 (2010) ;

Papers in Journals (ISI):

1. I. Spiridon, N. C. Anghel, **R. N. Darie-Niţă,** A. Iwańczuk, R. G. Ursu, I. A. Spiridon New composites based on starch/Ecoflex®/biomass wastes: Mechanical, thermal, morphological and antimicrobial properties, *International Journal of Biological Macromolecules* xxx (xxxx) 1–10, DOI: 10.1016/j.ijbiomac.2019.11.185 (2019);
2. M. Rapa, L.M. Stefan, P. Preda, **R.N. Darie-Nita**, A. Gaspar-Pintiliescu, A.M. Seciu, C. Vasile, E. Matei, A.M. Predescu; Effect of hydrolyzed collagen on thermal, mechanical and biological properties of poly(lactic acid) bionanocomposites, *Iranian Polymer Journal* 28(4), 271-282, https://doi.org/10.1007/s13726-019-00694-7 (2019);
3. E. Butnaru , E. Stoleru, M.A. Brebu, **R.N. Darie-Nita**, A. Bargan, C. Vasile; Chitosan-Based Bionanocomposite Films Prepared by Emulsion Technique for Food Preservation; *Materials* 12(3), 373-390; doi:10.3390/ma12030373 (2019)
4. M. Rapa, **R.N. Darie-Nita**, P. Preda, V. Coroiu, R. Tatia, C. Vasile, E. Matei, A.M. Predescu, M.-E. Maxim PLA/collagen hydrolysate/silver nanoparticles bionanocomposites for potential antimicrobial urinary drains; *Polymer-Plastics Technology and Materials*, DOI: 10.1080/25740881.2019.1603999 (2019);
5. C. Vasile, E. Stoleru, **R.N. Darie-Niţa**, R.P. Dumitriu, D. Pamfil, L. Tarţau; Biocompatible Materials Based on Plasticized Poly(lactic acid), Chitosan and Rosemary Ethanolic Extract I. Effect of Chitosan on the Properties of Plasticized Poly(lactic acid) Materials; *Polymers* 11(6), 941-969 (2019)
6. **R. N. Darie-Niţă,** C. Vasile, E. Stoleru, R.-P. Dumitriu, T. Zaharescu, L. Tarţău, T. Niţă, D. Pamfil, M.A. Brebu, G. M. Pricope, K. Leluk, Evaluation of the Rosemary Extract Effect on the Properties of the Poly Lactic Acid-Based Materials, *Materials* 11, 1825-1858 (2018);
7. C. Vasile, D. Pamfil, M. Râpă, **R. N. Darie-Niţă,** A. C. Mitelut, E. E. Popa, P. A. Popescu, M. C. Draghici, M. E. Popa, Study of the soil burial degradation of some PLA/CS biocomposites, *Composites Part B: Engineering* 142, 251-262 (2018);
8. A.-M. Resmeriță, A. Coroaba, **R. Darie**, F. Doroftei, I. Spiridon, B. C. Simionescu, P. Navard, Erosion as a possible mechanism for the decrease of size of plastic pieces floating in oceans, *Marine Pollution Bulletin* 127, 387–395; (2018);

9. I. Spiridon, **R. N. Darie-Nita**, A. Bele, New opportunities to valorize biomass wastes into green materials. II. Behaviour to accelerated weathering, *Journal of Cleaner Production* 172, 2567-2575 (2018);
10. G. Cazacu, **R.N. Darie-Niţă,** O. Chirila, M. Totolin, M. Asandulesa, D.E. Ciolacu, J. Ludwiczak, C. Vasile, Environmentally Friendly Polylactic Acid/Modified Lignosulfonate Biocomposites, *Journal of Polymers and the Environment* 25, 884-902 (2017);
11. C. Vasile, M. Rapa, M. Stefan, M. Stan, S. Macavei, **R.N. Darie-Niţă,** L. Barbu-Tudoran, D.C. Vodnar, E.E. Popa, R. Stefan, G. Borodi, M. Brebu, New PLA/ZnO:Cu/Ag bionanocomposites for food packaging; Express Polymer Letters 11(7), 531-544 (2017);
12. I.M. Pelin, V. Maier, D.M. Suflet, I. Popescu, **R.N. Darie-Niţă,** M. Aflori, M. Butnaru, Formation and characterization of calcium orthophosphates in the presence of two different acidic macromolecules; *Journal of Crystal Growth* 475, 266-273 (2017);
13. M. Rapa, **R.N. Darie-Niţă,** C. Vasile, Influence of Plasticizers Over Some Physico-chemical Properties of PLA; *Materiale Plastice* 54(1), 73-78 (2017);
14. I. Spiridon, **R. N. Darie-Nita**, Influence of different fillers on the behaviour of LDPE-based composites to accelerated weathering, *Cellulose Chemistry and Technoology*, 51 (9-10), 831-838 (2017);
15. M. Rapa, **R.N. Darie-Nita**, A.M. Irimia, M. Sivertsvik, J.T. Rosnes, A. R. Trifoi, C.Vasile, E. E. Tanase, T. Gherman, M.E. Popa, A. C. Mitelut, Comparative Analysis of Two Bioplasticizers Used to Modulate the Properties of PLA Biocomposites, *Materiale Plastice* 54, No. 4 (2017) 610-615
16. I. Spiridon, **R.N. Darie-Niţă**, G.E. Hitruc, J. Ludwiczak, I.A. Cianga Spiridon, M. Niculaua, New opportunities to valorize biomass wastes into green materials, *Journal of Cleaner Production* 133, 235-242 (2016);
17. M. Rapa, A.C. Mitelut, E.E. Tanase, E. Grosu, P. Popescu, M.E. Popa, J.T. Rosnes, M. Sivertsvik, **R.N. Darie-Niţă**, C. Vasile, Influence of chitosan on mechanical, thermal, barrier and antimicrobial properties of PLA-biocomposites for food packaging, *Composites Part B Engineering*, 102, 112-121 (2016)
18. E. Butnaru, **R.N. Darie-Niţă,** T. Zaharescu, T. Balaeș, C. Tănase, G. Hitruc, F. Doroftei, C. Vasile, Gamma irradiation assisted fungal degradation of the polypropylene/biomass composites, *Radiation Physics and Chemistry* 125, 134–144 (2016);
19. I. Spiridon, **R.N. Darie**, H. Kangas, Influence of fiber modifications on PLA/fiber composites. Behavior to accelerated weathering, *Composites Part B Engineering* 92, 19-27 (2016);
20. I. Spiridon, **R.N. Darie-Niţă,** M. Kozlowski, A. Nechita, R.G. Ursu, Influence of accelerated weathering on the performance of polylactic acid based materials, *Cellulose Chemistry and Technology* 50 (5-6), 629-635 (2016);
21. R. Lipsa, N. Tudorachi, **R.N Darie-Niţă,** L.Oprică, C. Vasile, A. Chiriac, Biodegradation of poly(lactic acid) and some of its based systems with *Trichoderma viride, International Journal of Biological Macromolecules* 88, 515–526 (2016);
22. **R.N. Darie-Niţă**, B.S. Munteanu, N. Tudorachi, R. Lipşa, E. Stoleru, I. Spiridon, C. Vasile, Complex Poly(Lactic Acid)-Based Biomaterial for Urinary Catheters. I. Influence of Silver Nanoparticles Concentration On the Mechanical and Thermal Properties, *Bioinspired, Biomimetic and Nanobiomaterials*, 5(4), 132-151, DOI: 10.1680/jbibn.15.00011 (2016);
23. E. Stoleru, B.S. Munteanu, **R.N. Darie-Niţă**, G.M. Pricope, M. Lungu, A. Irimia, M. Râpă, Rodica D. Lipşa, C. Vasile, Complex poly(lactic acid)-based biomaterial for urinary

catheters: II. Biocompatibility, *Bioinspired, Biomimetic and Nanobiomaterials*, 5(4), 152-166, DOI: 10.1680/jbibn.15.00012 (2016);
24. **R.N. Darie-Niţă**, C. Vasile, A. Irimia, R. Lipşa, M. Râpă, Evaluation of some eco-friendly plasticizers for PLA films processing, *Journal of Applied Polymer Science* 133 (13), 43223 (2016);
25. **R.N. Darie**, S. Vlad, N. Anghel, F. Doroftei, T. Tamminen, I. Spiridon, New PP/PLA/cellulose composites: Effect of cellulose functionalization on accelerated weathering behavior, *Polymers for Advanced Technologies* 26(8), 941-952 (2015);
26. M. Râpă, **R.N. Darie- Nita**, **E.** Grosu**, E.E.**Tănase**, A.R.** Trifoi**, T.** Pap**, C.** Vasile, Effect of plasticizers on melt processability and properties of PHB, *Journal of Optoelectronics and Advanced Materials*, 17 (11-12), 1778 – 1784 (2015);
27. E. Parparita, T. Zaharescu, **R.N. Darie**, C. Vasile, Biomass Effect on γ-Irradiation Behavior of Some Polypropylene Biocomposites, *Industrial and Engineering Chemistry Research* 54, 2404−2413 (2015)
28. Iuliana Spiridon, Karol Leluk, Ana Maria Resmerita, **Raluca Nicoleta Darie**, Evaluation of PLA–lignin bioplastics properties before and after accelerated weathering, *Composites: Part B* 69 342–349 (2015);
29. **R.N. Darie,** E. Pâslaru, A. Sdrobiş, G.M. Pricope, G.E. Hitruc, A. Poiata, A. Baklavaridis, C. Vasile, Effect of nanoclay hydrophilicity on the poly(lactic acid)/clay nanocomposites properties, *Industrial and Engineering Chemistry Research*, 53(19):7877-7890 (2014);
30. M. Bercea, S. Morariu, L.E. Nita, **R.N. Darie**, Investigation of Poly(vinyl alcohol)/Pluronic F127 Physical Gels, *Polymer-Plastics Technology and Engineering* 53(13): 1354–1361 (2014);
31. **R.N. Darie**, E. Lack, F. Lang, Jr., M. Sova, A. Nistor, I. Spiridon, Wastes from Wood Extraction Used in Composite Materials: Behavior after Accelerated Weathering, *International Journal of Polymer Analysis and Characterization*, 19: 453–467 (2014);
32. C. Vasile, **R.N. Darie,** A. Sdrobiş, E. Pâslaru, G. Pricope, A. Baklavaridis, S.B. Munteanu, I. Zuburtikudis, Effectiveness of chitosan as antimicrobial agent in LDPE/CS composite films as minced poultry meat packaging materials**,** *Cellulose Chemistry and Technology*, 48 (3-4):325-336 (2014);
33. E. Parparita**, R.N. Darie,** C.M. Popescu, A. Uddin, C. Vasile, Structure-morphology-mechanical properties relationship of some polypropylene/lignocellulosic composites, *Materials and Design* 56: 763-772 (2014);
34. S. Aradoaei, R.C. Ciobanu, **R. Darie**, T. Zaharescu, A. Caramitu, Green Materials Derived from Renewable Resource for Electrical Applications, *Materiale Plastice* 50(4):310-313 (2013);
35. I. Spiridon, O.M. Paduraru, M.F. Zaltariov, **R.N. Darie,** Influence of Keratin on Polylactic Acid/Chitosan Composite Properties. Behavior upon Accelerated Weathering, *Industrial and Engineering Chemistry Research*, 52 (29), 9822–9833 (2013);
36. C. Vasile, **R.N. Darie**, C.N. Cheaburu-Yilmaz, G.M. Pricope, M. Bračič, D. Pamfil, G.E. Hitruc, D. Duraccio, Low density polyethylene – Chitosan composites, *Composites Part B Engineering* 55:314-323 (2013);
37. **R.N. Darie**, R. Bodirlau, C.A. Teaca, J. Macyszyn, M. Kozlowski, I. Spiridon, Influence of Accelerated Weathering on the Properties of Polypropylene/Polylactic Acid/Eucalyptus Wood Composites**,** *International Journal of Polymer Analysis and Characterization* 18: 315–327 (2013);

38. M. Bercea, **R.N. Darie,** S. Morariu, Rheological investigation of xanthan/Pluronic F127 hydrogels, *Revue Roumaine de Chimie 58*(2-3), 189-196(2013)
39. A. Moldovan, S. Patachia, C. Vasile, **R. Darie**, E. Manaila, M. Tierean, Natural Fibres/Polyolefins Composites (I) UV and Electron Beam Irradiation, *Journal of Biobased Materials and Bioenergy* 7, 58-79, DOI: http://dx.doi.org/10.1166/jbmb.2013.1273 (2013);
40. I. Spiridon, **R.N. Darie**, R. Bodırlau, CA. Teaca, F. Doroftei, Polypropylene-based composites reinforced by toluene diisocyanate modified wood, *Journal of Composite Materials*, 47(27), 3451-3464 DOI: 10.1177/0021998312466906 (2013);
41. O.M. Păduraru, D. Ciolacu, **R.N. Darie**, C. Vasile, Synthesis and characterization of polyvinyl alcohol/cellulose cryogels and their testing as carriers for a bioactive component, *Materials Science and Engineering C* 32, 2508–2515 (2012);
42. A. Sdrobis, **R.N. Darie**, M.Totolin, G. Cazacu, C. Vasile, Low density polyethylene composites containing cellulose pulp fibers, *Composites: Part B Engineering* 43, 1873–1880 (2012);
43. I. Spiridon, O.M. Paduraru, M. Rudowski, M. Kozlowski, **R.N. Darie**, Assessment of Changes Due to Accelerated Weathering of Low-Density Polyethylene/Feather Composites, *Industrial & Engineering Chemistry Research* 51, 7279−7286 (2012);
44. M. Bercea, **R.N**. **Darie**, L.E. Nita, S. Morariu, Temperature responsive gels based on Pluronic F127 and poly(vinyl alcohol), *Industrial & Engineering Chemistry Research*, 50, 4199-4206 (2011)*;*
45. **R.N. Darie**, M. Bercea, M. Kozlowski, I. Spiridon, Evaluation of properties of LDPE/Oak wood composites exposed to artificial ageing, *Cellulose Chemistry and Technology*, 45 (1), 127-135 (2011);
46. S. Aradoaei**, R. Darie**, G. Constantinescu, M. Olariu, R. Ciobanu, Modified lignin effectiveness as compatibilizer for PET/LDPE blends containing secondary materials, *Journal of Non-Crystalline Solids* 356 (11-17), 768-771 (2010);
47. D. Dimonie, I. Kelnar, R. Socoteanu, **R.N. Darie**, F.S. Pop, C. Zaharia, C. Petrea, M. Nemteanu, R. M. Coserea, The Influence of Miscibility and Micro – structure on the Surface Defects of Some Starch Bio – Hybrides, *Materiale Plastice* 47 (4), 486-491 (2010);
48. D. Dimonie, R. Coserea, Gh. Singurel, C. Zaharia, **R.N. Darie,** S. Pop, Rheological Properties of Polyvinyl Chloride-Thermoplastic Polyurethane Blends, *Materiale Plastice* 46 (3), 321-326 (2009);
49. **R.N. Darie**, M. Zanoaga, C. Vasile, Physical characterization of some copolyamide/ethylene propylene diene rubber (EPDM) blends, *Journal of Optoelectronics and Advanced Materials*, 9 (4), 1038 – 1043 (2007);
50. **R.N. Darie,** C. Vasile. M. Kozlowski, The effect of compatibilization in the reactive processing of the low density polyethylene/polyamide 6/EPDM blends, *Polimery*, 51 (9), 656-661 (2006);
51. in wood waste management: composites based on a novel copolyamide as matrix, *Environmental Engineering and Management Journal*, 3 (3), 415-424 (2004);
52. **R.N. Darie**, M. Brebu, C. Vasile, M. Kozlowski, On the compatibility of the IPP/PA6/EPDM blends with and without functionalized IPP. I. Thermo-oxidative behaviour, *Polymer Degradation and Stability*, 80, 551-566 (2003);
53. C. Vasile, M. Brebu, **R. Darie**, H. Darie, Md. A. Uddin, Y. Sakata: Thermal and Catalytic Decomposition of Mixed Plastics. III. PVC-containing Mixed Plastics, *Revue Roumaine de Chimie*, 47 (10-11) 1185-1191 (2002);

Patents

International:

1. M. Rapa, C. Vasile, E. Grosu, A. R. Trifoi, **R. N. Darie-Nita,** E. Butnaru, R. P. Dumitriu, M. Sivertsvik, J. T. Rosnes, A.C. Mitelut, E. E. Popa, M.E. Popa, B. Munteanu, L. Moldovan, "PLA – based active and degradable biocomposites for food packaging", publication WO/2018/117885/ 28.06.2018, international application no. PCT/RO2016/000028/27.12.2016 (beneficiar: S.C. I.C.P.E. Bistrita S.A., Romania);

National:

1. R.N. Darie, R. Lipsa, N. Tudorachi, E. Stoleru, C. Vasile, B.S. Munteanu, „Procedeu și compoziție pentru obținerea de noi bionanocompozite polimerice biocompatibile, cu proprietăți antimicrobiene și antioxidante, pentru uz medical", brevet de inventie OSIM nr 130668 din 28.02.2018 (beneficiar: Institutul de Chimie Macromoleculara „Petru Poni" Iasi);

2. R.N. Darie, C. Cheaburu, G. Pricope, D. Constantinescu, C. Vasile, „Procedeu si compozitie pentru obtinerea de noi materiale polietilenice cu proprietati antimicrobiene si antioxidante pentru ambalarea alimentelor", brevet de inventie OSIM nr 128630 din 30.08.2017 (beneficiar: Institutul de Chimie Macromoleculara „Petru Poni" Iasi).