

PUBLICAȚII ȘI PROIECTE DE CERCETARE

Listă lucrări reprezentative

- [1] A. Diacon, E. Rusen, A. Mocanu, P. Hudhomme and C. Cincu - Fluorescence Properties of Photonic Crystals Doped with Peryleneimide, *Langmuir*, ISSN 0743-7463,27 (12),p. 7464-7470, 2011, WOS:000291500700020.
- [2] A. Diacon, E. Rusen, A. Mocanu and L. C. Nistor - Polymer photonic crystal band-gap modulation using PbS quantum dots, *Journal of Materials Chemistry C*, ISSN 2050-7526,1 (28),p. 4350-4357, 2013, WOS:000321015700007.
- [3] A. Diacon, L. Derue, C. Lecourtier, O. Dautel, G. Wantz and P. Hudhomme - Cross-linkable azido C-60 fullerene derivatives for efficient thermal stabilization of polymer bulk-heterojunction solar cells, *Journal of Materials Chemistry C*, ISSN 2050-7526,2 (35),p. 7163-7167, 2014, WOS:000341280000002.
- [4] E. Rusen, A. Mocanu, L. C. Nistor, A. Dinescu, L. Calinescu, G. Mustatea, S. I. Voicu, C. Andronescu and A. Diacon - Design of Antimicrobial Membrane Based on Polymer Colloids/Multiwall Carbon Nanotubes Hybrid Material with Silver Nanoparticles, *ACS Applied Materials & Interfaces*, ISSN 1944-8244,6 (20),p. 17384-17393, 2014, WOS:000343684200008.
- [5] A. Diacon, E. Rusen, A. Mocanu and L. C. Nistor - Supported Cu-0 nanoparticles catalyst for controlled radical polymerization reaction and block-copolymer synthesis, *Scientific reports*, ISSN 2045-2322,7 10, 2017, WOS:000408997700044.
- [6] E. Rusen, A. Diacon, A. Mocanu, D. C. Cuița, A. Dinescu and T. Zecheru - "A real" emulsion polymerization using simple ATRP reaction in the presence of an oligo-initiator with a dual activity of emulsifier and initiator, *Colloids and Surfaces a-Physicochemical and Engineering Aspects*, ISSN 0927-7757,555 1-7, 2018, WOS:000443153100001.
- [7] A. Diacon, A. Mocanu, C. E. Raducanu, C. Busuioac, R. Somoghi, B. Trica, A. Dinescu and E. Rusen - New carbon/ZnO/Li₂O nanocomposites with enhanced photocatalytic activity, *Scientific reports*, ISSN 2045-2322,9 14, 2019, WOS:000496416000050.
- [8] P. Chipurici, A. Vlaicu, I. Calinescu, M. Vinatoru, C. Busuioac, A. Dinescu, A. Ghebauc, E. Rusen, G. Voicu, M. Ignat and A. Diacon - Magnetic silica particles functionalized with guanidine derivatives for microwave-assisted transesterification of waste oil, *Scientific reports*, ISSN 2045-2322,11 (1),p. 13, 2021, WOS:000692507200058.
- [9] A. Diacon, I. Calinescu, M. Vinatoru, P. Chipurici, A. Vlaicu, A. C. Boscomea and T. J. Mason - Fatty Acid Ethyl Esters (FAEE): A New, Green and Renewable Solvent for the Extraction of Carotenoids from Tomato Waste Products, *Molecules*, ISSN 26 (14),p. 9, 2021, WOS:000676454700001.
- [10] A. Diacon, E. Rusen, F. Rizea, A. Ghebauc, D. Berger, R. Somoghi, A. Matei, P. Palade and O. Tutunaru - One-pot strategy for obtaining magnetic PMMA particles through ATRP using Fe(CO)₅ as co-initiator, *European Polymer Journal*, ISSN 0014-3057,152 11, 2021, WOS:000652831600001.

Teza de doctorat

„Polymers functionalized with chromophores for applications in photovoltaics, photonics and medicine” – „Polimeri funcționalizați cu cromofori având utilizări în fotovoltaică, fonică și medicină” (susținută 30 Septembrie 2011 – București) teză în cotutelă cu Universit  d’Angers, France



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Publicații ISI

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Naționale

1. CĂLINESCU IOAN; ISTRATE MARCEL; SCARLAT NICOLAE; VÎNĂTORU MIRCEA; DIACON AUREL; MASCĂ FACIALĂ DE UZ MEDICAL CU PROPRIETĂȚI BIOCIDE (ANTIVIRALE, ANTIMICROBIENE ȘI ANTIFUNGICE) ȘI CAPACITATE DE AUTOSTERILIZARE; RO202000069 (U1) — 2022-04-29

Brevete

2. CHIPURICI PETRE; CĂLINESCU IOAN; VINĂTORU MIRCEA; DIACON AUREL; IGNAT NICOLETA DANIELA; *PROCEDEU PENTRU OBTINEREA ESTERILOR METILICI AI ACIZILOR GRAȘI DIN BIOMASĂ ALGALĂ UMEDĂ*; RO134128 (A0) — 2020-05-29
3. CĂLINESCU IOAN; VINĂTORU MIRCEA; DIACON AUREL; CHIPURICI PETRE; *SOLVENT BIODEGRADABIL ȘI NETOXIC PENTRU EXTRAȚIA PRINCIPILOR NATURALE LIPOSOLUBILE*; RO133507 (A0) — 2019-07-30
4. RUSEN EDINA ANA-MARIA; DIACON AUREL; MOCANU ALEXANDRA; BACALUM ELENA; CHEREGI MIHAELA; DAVID VICTOR; BUCUR BOGDAN; BUCUR PETRUȚA MĂDĂLINA; RADU GABRIEL LUCIAN; *POLIMER IMPRENTAT MOLECULAR, OBTINUT PRIN POLIMERIZARE ÎN MASĂ PENTRU NITROFURANTOINĂ PENTRU REALIZAREA DE COLOANE DE EXTRACTIVE ÎN FAZA SOLIDĂ ȘI SENZORI ELECTROCHIMICI*; RO133210 (A2) — 2019-03-29
5. RUSEN EDINA ANA-MARIA; DIACON AUREL; MOCANU ALEXANDRA; DRĂGOESCU MARIUS FLORIN; *SINTEZA POLIESTERILOR NESATURAȚI UTILIZÂND DEȘEURI DE PET*; RO131874 (A2) — 2017-05-30

Internaționale

1. DAUTEL OLIVIER; DERUE LIONEL; DIACON AUREL; HUDHOMME PIETRICK; PAVAGEAU BERTRAND; WANTZ GUILLAUME; *Method for Preparing a Photovoltaic Thin Film Having a Heterojunction*; US2015179947 (A1) — 2015-06-25
 2. DAUTEL OLIVIER; DERUE LIONEL; DIACON AUREL; HUDHOMME PIETRICK; WANTZ GUILLAUME; PAVAGEAU BERTRAND; *Preparing photovoltaic thin film having heterojunction, comprises preparing mixture including electron-donor semiconductor and electron-acceptor semiconductor and crosslinking agents with azide groups, and disposing mixture on substrate*; FR2996062 (A1) — 2014-03-28
1. 2017 - *Invited Speaker* – "Novel facile method for obtaining CdSe/polyaniline/C60 composite material" - AdvPhotoCat-E 2017 – *Advances on Photocatalysis, International Workshop 2nd Edition, 14-16 July 2017, Crete, Greece* (<http://www.photocatalysis-workshop.com/invited-speakers/>)

Participări la conferințe internaționale ca invitat

Selecție participări:

1. Gabriela Toader, Traian Rotariu, Adrian Rotariu, Sorin Esanu, Aurel Diacon, Edina Rusen - *New polyurea nanocomposites designed for ballistic protection, Greener and safer energetic and ballistic systems Conference, ENSTA Bretagne, 8-9 noiembrie 2018, Brest, France*
2. Gabriela Toader, Traian Rotariu, Daniela Pulpea, Andreea Moldovan, Alice Podaru, Ana Mihaela Gavrilă, Mioara Alexandru, Aurel Diacon, Raluca Ginghina, Ovidiu Iorga, Ciprian Sau, *POLYMERIC BLENDS DESIGNED FOR SURFACE DECONTAMINATION, 8th International Conference on Materials Science and Technologies* – RoMat 2020, Bucharest, Romania, November 26-27th, 2020
3. Gabriela Toader, Daniela Pulpea, Traian Rotariu, Aurel Diacon, Andreea Moldovan, Alice Podaru, Ciprian Sau, Florentina Alexe, Raluca Ginghina, Mihai Ungureanu, Florin Dirloman, *Evaluation of alginate-based formulations suitable for the removal of radionuclides and heavy metals from the contaminated surfaces, Bucharest Polymer Conference 2nd Edition University POLITEHNICA of Bucharest, Romania, 10 - 11 June 2021*
4. Alice PODARU, Gabriela TOADER, Daniela PULPEA, Traian ROTARIU, Aurel DIACON, Edina RUSEN, Andreea MOLDOVAN, Raluca GINGHINĂ, Florentina ALEXE, Sorina BAJENARU, Ovidiu IORGA, Mihai UNGUREANU, Florin DIRLOMAN, Bogdan PULPEA, Lucia LEONAT, *Film-forming polymeric blends designed for the removal of heavy metals and radionuclides from contaminated surfaces, The International Symposium PRIOrities of CHEMistry for a sustainable development, XVIIIth Edition, ICECHIM - Bucharest – ROMANIA October 27 - 29, 2021*
5. Alexandra Mocanu, Edina Rusen, Aurel Diacon, Gabriela Isopencu, Gabriel Mustățea, Raluca Șomoghi, Adrian Dinescu – *"Antimicrobial properties of polysulfone membranes modified with carbon nanofibers and silver nanoparticles"* – Poster, 24-25 October 2019, World Congress on Chemistry, Valencia, Spain
6. Aurel Diacon, Alexandra Mocanu, Cristian Eugen Raducanu, Edina Rusen, Cristina Busuioc, Raluca Șomoghi, Bogdan Trica, Adrian Dinescu, *"Synthesis and characterization of new carbon/ZnO/Li2O nanocomposites with enhanced photocatalytic activity"* – Poster, 4-7 September 2019, Romanian International Conference on Chemistry and Chemical Engineering - RICCCE XXI, Constanța, Romania
7. Aurel Diacon, Edina Rusen, Leona Cristina Nistor, Alexandra Mocanu, *"Supported CuO nanoparticles catalyst for controlled radical polymerization reaction and block-copolymer synthesis"* – Oral presentation, 16-17 April, 2018, ICPST 2018: International Conference on Polymer Science and Technology, Lisbon, Portugal
8. Diacon Aurel, Rusen Edina, Mocanu Alexandra, Nistor Leona-Cristina, *"Supported CuO nanoparticles catalyst for controlled radical polymerization reaction and block-copolymer synthesis"* – Poster presentation, 17-19 May International Symposium Frontiers in Polymer Science, Sevilla, Spain
9. Rusen Edina, Mocanu Alexandra, Diacon Aurel, Nistor Leona-Cristina, Gavrilă Raluca - *"CdSe*

Cărți/capitole de
carte

 Proiecte de
cercetare-
dezvoltare
(director/responsabil
de proiect)

 Proiecte de
cercetare-
dezvoltare
(membru în colectivul
de cercetare)

- (quantum dots)-graphene oxide system for thiophene polymerization: A new strategy, a new material" – Oral presentation, 13-16 June 2016 - IUPAC - sponsored 16th International Conference Polymers and Organic Chemistry POC -16, Crete, Greece
10. Gabriela Toader, Edina Rusen, Mircea Teodorescu, Aurel Diacon, Paul Stanescu, Traian Rotariu, Adrian Rotariu - New types of polyurea nanocomposites with enhanced mechanical properties (prezentare orală), Greener and safer energetic and ballistic systems (GSEBS 2016), 26-27 mai 2016, București, România
 11. Gabriela Toader, Edina Rusen, Mircea Teodorescu, Aurel Diacon, Paul Stanescu, Traian Rotariu, Adrian Rotariu - Novel polyurea polymers with enhanced mechanical properties (prezentare orală), Polymers and Organic Chemistry (POC 2016), 3-6 iunie 2016, Hersonissos, Greece
1. Cincu, C.; Iovu, H.; Zaharia, C.; Diacon, A., Biomateriale polimerice și aplicații medicale. Politehnica Press, 2009, ISBN 978-065-515-068-3.
 2. Cincu, C.; Diacon, A., Hybrid Solar Cells: Materials and Technology. In *Advanced Solar Cell Materials, Technology, Modelling and Simulation*, IGI Global: 2013, pp 79-100.
1. 2020 – prezent - **Director de proiect** din partea Universității Politehnica din București – "Polimeri inteligenți obținuți prin strategii noi de polimerizare foto-ATRP și imprimare 3D (SMARTPHOTO-ATRP)" - PN-III-P1-1.1-TE-2019-1387, nr. contract TE 141/2020.
 1. 2021 – prezent – **Cercetător** din partea Universității Politehnica din București – "O noua tehnologie hibrida pentru biorafinării: Microunde si Ultrasunete într-un singur aparat" -PN-III-P4-ID-PCE-2020-1286, nr. contract PCE 12/2021.
 2. 2021 – prezent - **Cercetător** din partea Universității Politehnica din București – „Biopolioli obținuți printr-o tehnologie neconvențională de recuperare a deșeurilor vegetale” Cod MySMIS: 122990 Number contract: 365/390041 / 27.09.2021
 3. 2021 – prezent - **Cercetător** din partea Universității Politehnica din București – "Centrul Suport POLITEHNICA Orizont activități și cheltuieli Export XLSX Componenta 12020", acronim UPB4H, MySMIS 108792, în baza contractului de finanțare nr. 250 /11.05.2020 încheiat cu Ministerul Educației și Cercetării în calitate de Organism Intermediar (OI), în numele și pentru Ministerul Fondurilor Europene (MFE) în calitate de Autoritate de Management (AM) pentru Programul Operațional Competitivitate (POC).
 4. 2020 – prezent - **Cercetător** din partea Universității Politehnica din București – Membru (Supleant) al Comitetului de Management – reprezentant al României al Proiectului COST CERTBOND „Reliable roadmap for certification of bonded primary structures” (CERTBOND) CA18120; Coordinating institution: COST Association – European Cooperation for Science and Technology
 5. 2018 – 2020 – **Cercetător** din partea Universității Politehnica din București – "Contingenta Hazardurilor CBRN și Îmbunătățirea Mijloacelor de Securitate Națională SECURE-NET" -PN III – Programul 1 - Dezvoltarea sistemului național de cercetare-dezvoltare, Denumirea Subprogramului: Subprogramul 1.2 - Performanță instituțională, Tip proiect: Proiecte Complexe realizate în consorții CDI, COD: PN-III-P1-1.2-PCCDI-2017-0395, Nr. Contract de Cercetare 70PCCDI/2018. Proiectul 5: Coordonator: Institutul Național de Cercetare-Dezvoltare pentru Chimie și Petrochimie - ICECHIM București.
 6. 2016 – 2020 – **Cercetător** din partea Universității Politehnica din București - "Ultrasonic/Microwave Nonconventional Techniques as new tools for nonchemical and chemical processes" (ULTRAMINT), contract: 47/05.09.2016 POC/PI1.1/OS1.2/ Acțiunea 1.1.4: Atragerea de personal cu competențe avansate din străinătate pentru consolidarea capacității CD, Coordonator proiect: Universitatea Politehnica București, director de proiect: Mircea Vinătoru.
 7. 2016 – 2018 – **Cercetător** din partea Universității Politehnica din București - "Sistem cumulativ diedric flexibil pentru tăierea sub apă a structurilor metalice" - PN-III-P2-2.1-PED-2016-0545 –

- FlexMetCut, no. 43PED/2016, Coordonator proiect: Centrul de Cercetare Științifică pentru Apărare CBRN și Ecologie*
8. 2014 – 2016 – **Cercetător** din partea Universității Politehnica din București - *Sistem de protecție antiexplozie pentru echiparea vehiculelor - (CREWPROTECT) PN-II-PT-PCCA-2013-4-1511, No. 278/2014*, Coordonator proiect: Academia Militară din București
 9. 2014 - 2015 – **Cercetător post-doctoral** – at Universității Politehnica din București In cadrul proiectului POSDRU/159/1.5/S/132 – InnoResearch – având tematica de cercetare *"Investigation and use of optoelectronic phenomena involving fluorescent chromophores, polymers and quantum dots nanoparticles"*.
 10. 2014 – 2016 - **Cercetător** din partea Universității Politehnica din București - NITRO-MIP- PN-II-PT-PCCA-2013-4-0203, - *Noi polimeri imprantați molecular dezvoltati pentru analiza sensibila si rapida a antibioticelor din clasa nitrofuranilor*, Nr. 197/2014, Coordonator proiect: Universitatea din București;
 11. 2012 – 2016 – **Cercetător** - *Beneficii economice si de protecție a mediului prin reciclarea PET utilizand metode neconventionale -RPETUM* PN-II-PT-PCCA-2011-3.2-0042, No. 57/2012; Coordonator proiect: Universitatea Politehnica din București
 12. 2013 - 2014 – **Cercetător** din partea Universității Politehnica din București - *POS-CCE section 2.3.3- Revalorization of PET waste for polyurethane adhesives, no. 520/31.07.2013, code SM/S 47534*.
 13. 2011 – 2012 – **Cercetător post-doctoral** din partea Universității din Angers, Franța - *ANR-HABISOL, Cellules PHOTOVOLTAÏQUES Organiques à Couche active Stabilisée, CEPHORCAS, France*.
 14. 2013 – 2014 – **Cercetător** din partea Universității Politehnica din București - *Synthesis of ethylbenzene from bioethanol and benzene, SPIN-OFF, nr. 839, Contract nr. 281/26.11.2010*.
 15. 2008 – 2010 – **Cercetător** din partea Universității Politehnica din București, *Research on the cultivation and energy recovery of fast growing poplar clones in short production cycles, CNMP Nr. 22 092/ 01.10.2008*.