

LIST
of scientific works

A. DOCTORAL THESIS

T 1 „Surface modified electrodes with self-assembled nanotube-type structures, nanofibers and conducting polymers”

C. ARTICLES / STUDIES IN EXTENSO

ISI journals:

1. Cristina Dumitriu, Cristian Pîrvu* - Electrochemical studies on TiO₂ nanotubes modified ti electrodes, UPB Scientific Bulletin, Series B, 74 (3), 93-106, 2012, ISSN 1454-2331, WOS:000440235500010
2. **Cristina Dumitriu**, Cristian Pirvu, Ioana Demetrescu - The electrochemical formation and shielding mechanism of TiO₂ nanotubes in organic electrolytes with different viscosity, Journal of the Electrochemical Society, 160 (2), G55-G60, 2013, ISSN: 0013-4651, WOS:000313581600066, DOI: 10.1149/2.035302jes
3. **Cristina Dumitriu**, Marian Popescu, Georgeta Voicu, Ioana Demetrescu - Influence of Anodizing Potential on Titanium Dioxide Nanotubes Morphology, Revista de Chimie, 64 (6), 599-602, 2013, ISSN: 0034-7752, WOS:000321025000008
4. **Cristina Dumitriu**, Zekra Mousavi, Rose-Marie Latonen, Johan Bobacka, Ioana Demetrescu - Electrochemical synthesis and characterization of poly(3,4-ethylenedioxythiophene) doped with sulfonated calixarenes and sulfonated calixarene fullerene complexes, Electrochimica Acta, 107, 178-186, 2013, ISSN: 0013-4686, WOS:000326661200023, DOI: 10.1016/j.electacta.2013.05.140
5. **Cristina Dumitriu**, Andrei Bogdan Stoian, Irina Titorencu, Vasile Pruna, Victor V. Jinga, Rose-Marie Latonen, Johan Bobacka, Ioana Demetrescu - Electrospun TiO₂ nanofibers decorated Ti substrate for biomedical application, Materials Science and Engineering C, 45, 56-63, 2014, ISSN: 0928-4931, WOS:000347582600008, DOI: 10.1016/j.msec.2014.08.055
6. Raluca Ion, Andrei Bogdan Stoian, **Cristina Dumitriu**, Sabina Grigorescu, Anca Mazare, Anisoara Cimpean, Ioana Demetrescu, Patrik Schmuki - Nanochannels formed on TiZr alloy improve biological response, Acta Biomaterialia, 24, 370-377, 2015, ISSN: 1742-7061, WOS:000360867700035, DOI: 10.1016/j.actbio.2015.06.016
7. **Cristina Dumitriu**, Marian Popescu, Camelia Ungureanu, Cristian Pîrvu - Antibacterial efficiencies of TiO₂ nanostructured layers prepared in organic viscous electrolytes, Applied Surface Science, 341, 157-165, 2015, ISSN: 0169-4332, WOS:000352214700021, DOI: 10.1016/j.apsusc.2015.02.183
8. **Cristina Dumitriu**, Camelia Ungureanu, Simona Popescu, Vlad Tofan, Marian Popescu, Cristian Pîrvu* - Ti surface modification with a natural antioxidant and antimicrobial agent, Surface and Coatings Technology, 276, 175-185, 2015, ISSN: 0257-8972, WOS:00360594600022, DOI: 10.1016/j.surfcoat.2015.06.063
9. Camelia Ungureanu, **Cristina Dumitriu**, Simona Popescu, Monica Enculescu, Vlad Tofan,

- Marian Popescu, Cristian Pirvu - Enhancing antimicrobial activity of TiO₂/Ti by torularhodin bioinspired surface modification, *Bioelectrochemistry*, 107, 14-24, 2016, ISSN: 1567-5394, WOS:000365363600003, DOI: 10.1016/j.bioelechem.2015.09.001
10. Luiza Ichim, Beatrice Gabriela Sbarcea, Delia Patroi, **Cristina Dumitriu*** - Hybrid bionic coating on Ti with TiO₂ nanotubes, hydroxyapatite and iron, *Revista de Chimie (Bucharest)*, 67 (11), 2198-2201, 2016, ISSN: 0034-7752, WOS:000388361900014
 11. Luiza Ichim, Mariana Prodana, **Cristina Dumitriu*** - The elaboration and characterization of a hybrid bionic coating on ti based on hydroxyapatite and nanotubes, *UPB Scientific Bulletin, Series B*, 78 (1), 161-172, 2016, ISSN 1454-2331, WOS:000417051900016
 12. George-Octavian Buica, Ioana-Georgiana Lazar, Eric Saint-Aman, Victorita Tecuceanu, **Cristina Dumitriu**, Ivanov Alexandru Anton, Andrei Bogdan Stoian, Eleonora-Mihaela Ungureanu - Ultrasensitive modified electrode based on poly(1H-pyrrole-1-hexanoic acid) for Pb(II) detection, *Sensors and Actuators B: Chemical*, 246, 434-443, 2017, ISSN: 0925-4005, WOS:000400803700056, DOI: 10.1016/j.snb.2017.02.112
 13. **Cristina Dumitriu**, Stefan Ioan Voicu, Alexandru Muhulet, Gheorghe Nechifor, Simona Popescu, Camelia Ungureanu, Andrea Carja, Florin Miculescu, Roxana Trusca, Cristian Pirvu - Production and characterization of cellulose acetate – titanium dioxide nanotubes membrane fraxiparinized through polydopamine for clinical applications, *Carbohydrate Polymers*, 181, 215-223, 2018, ISSN: 0144-8617, WOS:000418661000027, DOI: 10.1016/j.carbpol.2017.10.082
 14. Ioana Demetrescu, **Cristina Dumitriu**, Georgeta Totea, Cristina I. Nica, Anca Dinischiotu, Daniela Ionita - Zwitterionic Cysteine Drug Coating Influence in functionalization of Implantable Ti50Zr Alloy for antibacterial, biocompatibility and stability properties, *Pharmaceutics*, 10(4), E220, 2018, ISSN: 1999-4923, WOS:000455853800058, DOI: 10.3390/pharmaceutics10040220
 15. Raluca Ion, Anca Mazare, **Cristina Dumitriu**, Cristian Pirvu, Patrick Schmuki, Anisoara Cimpean - Nanochannelar topography positively modulates osteoblast differentiation and inhibits osteoclastogenesis, *Coatings*, 8(9), 294, 2018, ISSN: 2079-6412, WOS:000447978200002, DOI: 10.3390/coatings8090294
 16. Georgeta Voicu, Andreea C. Didilescu, Andrei B. Stoian, **Cristina Dumitriu**, Maria Greabu, Mihai Andrei - Mineralogical and microstructural characteristics of two dental pulp capping materials, *Materials*, 12(11), 1772, 2019, ISSN: 1996-1944, WOS:000472638600046, DOI: 10.3390/ma12111772
 17. Laura Eugenia Barbulescu, **Cristina Dumitriu**, Dumitru Valentin Dragut, Adrian Nicoara, Alina Badanoiu, Cristian Pirvu - Residual titanium flakes as a novel material for retention and recovery of rare earth and relatively rare earth elements, *Environmental Science and Pollution Research*, 27(4), 4450-4459, 2020, ISSN: 0944-1344, WOS:000519703100078, DOI: 10.1007/s11356-019-06839-8
 18. Simona Popescu, Maria-Elena Zarif, **Cristina Dumitriu**, Camelia Ungureanu, Cristian Pirvu - Silk Fibroin-Based Hybrid Nanostructured Coatings for Titanium Implantable Surfaces Modification, *Coatings*, 10(6), 518, 2020, ISSN: 2079-6412, WOS:000553473800001, DOI: 10.3390/coatings10060518
 19. **Cristina Dumitriu**, Alexandra Constantinescu, Cristian Pirvu - Functionalized TiO₂ nanotube platform for gliadin electroanalysis, *Crystals*, 11(1), pp. 1–11, 22, 2021, ISSN 2073-4352, WOS:000611021100001, DOI: 10.3390/cryst11010022

20. Camelia Ungureanu, Laura Barbulescu, **Cristina Dumitriu**, Claudiu Manole, Cristian Pirvu* - Titanium industrial residues surface modification towards its reuse as antimicrobial surfaces, *Environmental Science and Pollution Research*, 2021, ISSN: 0944-1344, WOS:000629942900020, DOI: 10.1007/s11356-021-13359-x
21. Cristiana Alexandra Danes, **Cristina Dumitriu**, Sorin Vizireanu, Bogdan Bitu, Ioana-Maria Nicola, Gheorghe Dinescu, Cristian Pirvu - Influence of carbon nanowalls on copper deposition for electrostatic conductive coatings, *Coatings*, 11(11), 1395, 2021, eISSN2079-6412, WOS:000724109200001, DOI: 10.3390/coatings11111395
22. Angela Gabriela Olaru, Valeria Butculescu, **Cristina Dumitriu**, Nicoleta Badea, Simona Popescu, Camelia Ungureanu, Cristian Pirvu - Biopolymers as intermediate layers for amoxicillin grafting on antibacterial surface, *Surfaces and Interfaces*, 33, article number 102224, 2022, ISSN 2468-0230, WOS:000838331800002, DOI: 10.1016/j.surfin.2022.102224
23. **Cristina Dumitriu**, Alexandra Constantinescu, Alina Dumitru, Cristian Pirvu* - Modified Electrode with ZnO Nanostructures Obtained from Silk Fibroin for Amoxicillin Detection, *Crystals*, 12(11), 1511, 2022, eISSN2073-4352, WOS:000883929800001, DOI10.3390/cryst12111511
24. Angela Gabriela Păun, **Cristina Dumitriu**, Camelia Ungureanu, Simona Popescu - Silk Fibroin/ZnO Coated TiO₂ Nanotubes for Improved Antimicrobial Effect of Ti Dental Implant, *Materials*, 16(17), 5855, 2023, eISSN1996-1944, WOS:001064130500001, DOI10.3390/ma16175855
25. Angela Gabriela Păun, Valeria Petrina, Nicoleta Badea, Camelia Ungureanu, Simona Popescu, **Dumitriu Cristina*** - Y-Branched Titanium Dioxide Nanotubes as a Potential Antimicrobial Coating for Implants, *Crystals*, 13(12), 1695, 2023, eISSN2073-4352, WOS:001130940200001, DOI: 10.3390/cryst13121695
26. Angela Gabriela Păun, **Cristina Dumitriu**, Nicoleta Badea, Simona Popescu - TiO₂ nanostructured surface coatings for tetracycline release, *UPB Scientific Bulletin, Series B: Chemistry and Materials Science*, 86(2), pp. 19–34, 2024, ISSN: 1454-2331, WOS:001247485400003
27. **Cristina Dumitriu**, Andreea Madalina Pandeale, Mihaela Vasilica Mindroiu, Lazar, Oana-Andreea Lazar, Alina Popp, Marius Enachescu, George-Octavian Buica - Electrochemical detection of anti-tissue transglutaminase antibody using quantum dots-doped polypyrrole-modified electrode, *Microchimica Acta*, 191(9), article number 543, 2024, ISSN: 0026-3672, WOS:001292884400001, DOI: 10.1007/s00604-024-06620-w
28. Angela Gabriela Păun, **Cristina Dumitriu**, Nicoleta Badea, Cristian Pirvu - Bioinspired Coatings Based on Lipid nanocarriers for Targeted Drug Delivery, *U.P.B. Scientific Bulletin, Series B: Chemistry and Materials Science*,

BDI journals

29. Luiza Ichim, **Cristina Dumitriu**, Alina Surugiu, Georgeta Totea, Ioana Demetrescu* - Elaboration and characterization of a complex coating on ti with TiO₂ nanotubes, functionalized single carbon nanotubes, hydroxyapatite and iron, *Annals of the Academy of Romanian Scientists on Physics and Chemistry Sciences*, 2 (2), 2017, ISSN 2537 – 4761
30. Radu-Florian Ene, **Cristina Dumitriu**, Radu Dorin Andrei, Catalin Jianu, Alin Chitu, Adnana Alina Spinu-Zaulet, Elena Carcadea, Mihaela Ramona Buga, Cristian Pirvu - Titanium dioxide –

based fiber anodes and their potential use in Cr2032 coin cell lithium batteries, Progress of Cryogenics and Isotopes Separation, 22(2), 31-42, 2019, ISSN 1582-2575

31. **Cristina Dumitriu**, Alexandra Constantinescu, Cristian Pirvu* - Electrochemical platform based on modified Ti electrodes to test a food allergen presence, Revista de Chimie, 71 (5), 427-433, 2020, ISSN 0034-7752

III. PATENTS/ INNOVATIONS E

- E 1. RO133346-A2, RO133346-B1: autori: Pîrvu Cristian, Popescu Simona Andreia, **Dumitriu Cristina**, Ungureanu Camelia, Mindroiu Vasilica Mihaela, Process for enhancing antibacterial activity of surface made of titanium alloy used for medical material, involves anodizing alloy surface, immersing anodized alloy in polydopamine solution, fixing cerium oxide nanoparticles, Derwent Primary Accession Number: 2019-49655M
- E 2. RO137718 (A0): autori: Mîndroiu Vasilica Mihaela; **Dumitriu Cristina**; Irodia Roberta, Procedeu de fabricare a unui nou electrod pseudocapacitive catodic pe bază de nanocompozit de tip WO₃_nanofibre/TiO₂_reduse electrochimic pe substrat de fto cu activități electrocromice îmbunătățite:
- E 3. A/00332 (17.06.2024) autori: Popescu Simona, **Dumitriu Cristina**, Păun Angela, Procedeu de modificare a suprafeței electrodului cu film de polipirol și quantum dots din fibroină pentru depistarea rapidă a anticorpilor de boală celiacă

IV. CONTRACTS AND SCIENTIFIC REPORTS (P, F)

P – RESEARCH PROJECTS - INNOVATION OBTAINED THROUGH COMPETITION

- P 1. “Synthesis of new fluorescent heterocycles with applications in biochemistry and electronics”, Code: 41, Nr. CH 380412 - student, team member
- P 2. “New multifunctional nanostructured coatings for orthopedic implants”, Acronym: NanoCoat, Code: PN-II-PT-PCCA 253/2014 - team member
- P 3. “Innovative surface design to extend the life and safety of dental and orthopedic implants”, Acronym: NovSurf , Code: PN-III-P2-2.1-PED-2016-0910 – team member
- P 4. “Enhancement of bone defect repair by mussel-inspired tio₂-based nanostructures functionalized with bioactive phytomolecules”, Acronym: DAPHYTBONE, Code: PN-III-P2-2.1-PED-2016-1372 – team member
- P 5. “Chemically modified electrodes with complexing polymeric films for heavy metal ions electroanalysis”, Acronym: CHEMPOLANAL, Code: PN-II-RU-TE2014-4-0594 – team member
- P 6. “New modified electrodes for gluten detection from aliments”, Acronym: TiO₂ Gluten, Code: PN-III-P1-1.1-PD-2016-2185 - project director

