MEMORIU ŞTIINŢIFIC

Drd. Andra Mihaela Onaş

Studii de doctorat

Perioada: 2021 - 2026

Conducător ştiinţific: Prof. Dr. Ing. Horia Iovu

Domeniu: Inginerie Chimică

Titlul tezei de doctorat: Advanced Electrochemical Biosensors for Low-Molecular Weight Analytes: Integrated Tailorable Strategies for Sensitive and Selective Detection

Activitate ştiinţifică

A. Lista de lucrări ştiinţifice (articole în reviste sau volume)

1. Andra Mihaela Onaş, Elena Olaret, Andreea Madalina Pandele, Matei Raicopol, Luisa Pilan, Horia Iovu, *"A Comparative Study On The Preparation Of Glassy Carbon Electrodes Modified With Electrochemically Reduced Graphene Oxide"*, U.P.B. Sci. Bull., Series B, Vol. 86, Iss. 1, 2024.
2. Andra Mihaela Onaş, Andreea Mădălina Pandele, Anamaria Hanganu, Ciprian Victor Florea, George Marton, Horia Iovu, Matei D. Raicopol, Luisa Pilan, *"Controlled Surface Functionalization using Aryldiazonium Salts with Bulky Protecting Groups for the Development of DNA-Based Sensing Platforms",* Surfaces and Interfaces, Volume 46, 103855, https://doi.org/10.1016/j.surfin.2024.103855, 2024.
3. Andra Mihaela Onaş, Andreea Mădălina Pandele, Anamaria Hanganu, Ciprian Victor Florea, Horia Iovu, Matei D. Raicopol, Luisa Pilan, *"Facile preparation of bifunctional monolayers through diazonium grafting and "click" postfunctionalization: A first step towards efficient aptasensing interfaces"*, Bioelectrochemistry, Volume 163, 108904, https://doi.org/10.1016/j.bioelechem.2025.108904, 2025.
4. Andra Mihaela Onaş, Louis Groignet, Sorin Marius Avramescu, Horia Iovu, Julien De Winter, *"Rational Design of Helical Peptoids for Tetracycline Conjugation: Insights into Molecular Complexation Mechanisms"*, Bioconjugate Chemistry, Volume 37, 779 – 789, https://doi.org/10.1021/acs.bioconjchem.6c00033, 2026.
5. Ciprian V. Florea, George O. Buică, Mădălina A. Pandele, Andra M. Onaş, Manuela-Elena Voicu, Anamaria Hanganu, Victoriţa Tecuceanu, Gabriela-Geanina Vasile, Cristian Devan, Raluca Stan, Matei D. Raicopol, *"Dual-function sensing platform for Hg(II) based on a redox-active thiosemicarbazone receptor"*, Journal of Electroanalytical Chemistry, Volume 961, 118251, https://doi.org/10.1016/j.jelechem.2024.118251, 2024.
6. Elena Olaret, Brindusa Balanuca, Andra Mihaela Onaş, Andrada Serafim, *"Screening of carboxylated nanodiamonds interactions with porcine gastric mucin and its methacryloyl derivative"*, Materials Letters, Volume 337, 134012, https://doi.org/10.1016/j.matlet.2023.134012, 2023.
7. Andra Mihaela Onaş, Constanţa Dascălu, Matei D. Raicopol, and Luisa Pilan, *"Critical Design Factors for Electrochemical Aptasensors Based on Target-Induced Conformational Changes: The Case of Small-Molecule Targets"*, Biosensors, Volume 12, 816. https://doi.org/10.3390/bios12100816, 2022.

B. Cărţi şi manuale

1. Andra Mihaela Onaş, Ciprian Victor Florea, Matei D. Raicopol, Andreea Madalina Pandele, *„Chapter 13 - Carbon nanotube fibres and yarns – synthesis, structure, and applications"*, Technical Organic and Inorganic Fibres from Natural Resources, Elsevier Science Ltd (ISBN 9780443154591), 2025, 379-402, https://doi.org/10.1016/B978-0-443-15459-1.00007-3.

C. Participări la conferinţe/workshop-uri

1. Andra Mihaela Onas, Andreea Madalina Pandele, Cristian Devan, Ciprian Victor Florea, Matei Raicopol, Luisa Pilan, Improved Aptasensing Platform for Tetracycline Detection through Aryl Diazonium Electrochemistry, Regional Meeting of the International Society of Electrochemistry, 15-19 August 2022 (Prague, CZECH REPUBLIC)
2. Andra Mihaela Onas, Andreea Madalina Pandele, Cristian Devan, Ciprian Victor Florea, Matei Raicopol, Luisa Pilan, Designing Functional Surfaces with Controllable Properties by Electrografting of Protected Aryldiazonium Salts, Regional Meeting of the International Society of Electrochemistry, 15-19 August 2022 (Prague, CZECH REPUBLIC)
3. Andra Mihaela Onaş, Andreea Madalina Pandele, Horia Iovu, Ciprian Victor Florea, Matei Raicopol, Luisa Pilan, Electrografting of Protected Aryldiazonium Salts for the Controllable Design of Functional Surfaces,

22nd Romanian International Conference on Chemistry and Chemical Engineering, September 7 – 9, 2022 (Sinaia, ROMANIA)

4. Ciprian Victor Florea, Andra Mihaela Onaş Andreea Madalina Pandele, Matei Raicopol, Luisa Pilan, The Use of Aryl Diazonium Electrochemistry for The Development of Tetracycline Aptasensing Devices, 22nd Romanian International Conference on Chemistry and Chemical Engineering, September 7 – 9, 2022 (Sinaia, ROMANIA)
5. Andra Mihaela Onaş, Andreea Madalina Pandele, Horia Iovu, Ciprian Victor Florea, Matei Raicopol and Luisa Pilan, Electrografting Protected Aryldiazonium Salts: Strategy for Controllable Design of Aptasensing Platforms, SRC Young Chemists' Day, May 22nd, 2023 (Mons, BELGIUM)
6. Andra Mihaela Onaş, Andreea Madalina Pandele, Ciprian Victor Florea, Matei Raicopol, Luisa Pilan, Development of Aptasensing Platforms by Controlled Grafting of Aryldiazonium Salts, 17th International Conference of Physical Chemistry – ROMPHYSCHEM, September 25-27, 2023 (Bucharest, ROMANIA)
7. Andra Mihaela ONAŞ, Julien De Winter, Horia Iovu, Rational design of peptoid molecules with antibiotic complexation properties, Transnational Multiplier Event – October 18-19, 2023 – (Bucharest, ROMANIA)
8. Luisa Pilan, Matei Raicopol, Andra Mihaela Onas, Madalina Pandele, Ciprian Florea, Optimized low-fouling aptasensing surfaces by electrografting of aryldiazonium salts, Biosensors 2023, 33rd Anniversary World Congress on Biosensors, 5-8 June 2023 (Busan, SOUTH KOREA)
9. Ciprian Victor Florea, Andra Mihaela Onas, Andreea Madalina Pandele, Matei Raicopol, Luisa Pilan, Controlled Surface Functionalization Using Aryldiazonium Salts for the Development of Aptasensing Platforms, 244th ECS Meeting, October 8-12, 2023 (Gothenburg, SWEDEN)
10. Andra Mihaela Onas, Andreea Madalina Pandele, Ciprian Victor Florea, Matei Raicopol, Luisa Pilan, Controlled Design of Aptasensing Platforms for Food Contaminants Detection through Aryl Diazonium Electrochemistry, Sensors Technologies International conference - Sensors 2023, October 25-27, 2023 (Albufeira, PORTUGAL)
11. Andra Mihaela Onas, Julien De Winter, Horia Iovu, Design and synthesis of peptoid molecules with antibiotic complexation properties for biotechnological applications, 23rd Romanian International Conference on Chemistry and Chemical Engineering, September 4 – 7, 2024 (Constanţa - Mamaia, ROMANIA)
12. Andra Mihaela Onas, Ciprian Victor Florea, Matei D. Raicopol, Horia Iovu, Luisa Pilan, ssDNA-based electrochemical biosensors for aminoglycoside antibiotics detection, 23rd Romanian International Conference on Chemistry and Chemical Engineering, September 4 – 7, 2024 (Constanţa - Mamaia, ROMANIA)
13. Andra Mihaela Onas, Sorin Marius Avramescu, Julien De Winter, and Horia Iovu, Peptoid molecules with antibiotic complexation properties: rational design, purification and structural characterization, 4th International Conference on Bioengineering and Polymer Science - June 2-5, 2025 (Brasov, ROMANIA)
14. Andra Mihaela ONAŞ, Oana Mihaela CIOACĂ, Dragoş CONDURACHE, Matei RAICOPOL, Luisa PILAN, Aminoglycoside Antibiotic Detection Using a Diazonium-Electrografted Aptasensing Platform, 14th Scientific Conference of Doctoral Schools SCDC-UDJG, Workshop NOMARES, June 2026 (ROMANIA)

D. Brevete

1. Pilan Luisa, Raicopol Matei, Onas Andra Mihaela, Pandele Andreea Madalina, Florea Victor Ciprian, "PROCEDEU ELECTROCHIMIC PENTRU OBŢINEREA DE SUPRAFEŢE BIFUNCŢIONALE CU GRAD DE FUNCŢIONALIZARE CONTROLAT ŞI IMPEDANŢĂ SCĂZUTĂ CU APLICAŢII ÎN OBŢINEREA DE BIOSENZORI", Numar de aplicare A/00352/2023/03.07.2023 (Cerere in curs de analiza).

E. Proiecte de cercetare ştiinţifică

1. Aptasenzori de inalta performanta pe baza de grafena obtinuti prin chimia diazoniului pentru detectia de contaminanti ai alimentelor, GRAPTADIAZONICS, PN-III-P4-ID-PCE-2020-2474;
2. Dezvoltarea unor platforme senzoristice avansate pentru monitorizarea poluarii cu metale grele, MetalSens, PN-III-P1-1.1-TE-2021-1163;
3. Materiale biomimetice avansate cu proprietăţi de complexare ale moleculelor antibiotice pentru dezvoltarea de aplicaţii biotehnologice, BioMimAntiCx, PN-IV-P8-8.3-PM-RO-BE-2024-0010;
4. Pansamente de tip hidrogel pe suport de celuloză bacteriană pentru terapia rănilor, PANHICEL, ARUT 104/11.10.2023;

5. Vectori non-virali pe baza de nanoparticule polimerice pentru terapie genica in managementul cancerului, NANOVEC, PN-III-P4-ID-PCE-2020-1448.

F. Stagii de perfecţionare

1. Polymer characterization by Mass Spectrometry for macromolecular engineering purposes, ERASMUS+ Traineeship Programme, March 2023 – July 2023, University of Mons (Mons, Belgium)

G. Cursuri de perfecţionare

1. Reseracher Connect Online Programme, Britsh Council, 13-23 November 2023
2. Eelisa Winter School of Bioengineering, Universitatea Politehnica din Bucuresti – Centrul de Materiale Polimerice Avansate (APMG), 25-28 ianuarie 2023

H. Membru în comitete de organizare sau comitete ştiinţifice ale conferinţelor/colective de redacţie ale unor reviste

1. Membru Comitet de organizare - 2nd Bucharest Polymer Conference - June 9-11, 2021

Student-doctorand

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