Model F17 - Memoriul ştiinţific al studentului doctorand

MEMORIU ŞTIINŢIFIC
Drd. Ing. Dipl. BARBU G. Cătălin Alexandru

Studii de doctorat

Perioada: 2022-2026
Conducători ştiinţifici: Prof.univ.dr.ing.ec.mat. Augustin SEMENESCU - UNSTPB, si CS I Dr. Habil. chim. FIERASCU Irina, Universitatea de Ştiinţe Agronomice şi Medicină Veterinară din Bucureşti
Domeniu: Inginerie şi management
Titlul tezei de doctorat: *„Managementul inovării cu aplicaţii în realizarea produselor destinate protecţiei metalelor nobile"*

Activitate ştiinţifică

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

https://www.webofscience.com/wos/woscc/summary/54792f88-9365-4dbb-9f45-312c665a40e0-01b9d2c249/fa4b7e74-e936-4dba-b37c-36a2818c27bf-01b9d2b420/relevance/1

Publicarea în reviste ştiinţifice WOS ISI

1. ***Barbu Cătălin;*** Semenescu, A.; Fistos, T.; Ungureanu, E.; Cotrut, C. "*Synthesis and Electrochemical Behavior of Essential Oils Based Protective Coatings for Silver Cultural Heritage Objects*". U.P.B. Sci. Bull., Series B, Volume 86, Issue 3, Page 273-284,Published: 2024, Indexed: 2024-09-06, Document Type: Article, Accession Number:**WOS:001301114000022**, Language: English, ISSN: 1454-2331, IDS Number: E2B7G **Journal Impact Factor: 0.5**, **Category Quartile :Q4** (zona alba).
https://www.webofscience.com/wos/woscc/full-record/WOS:001301114000022

2. ***Barbu, CA (Barbu, Catalin Alexandru);*** Fierascu, I (Fierascu, Irina); Semenescu, A (Semenescu, Augustin); Cotrut, CM (Cotrut, Cosmin M.) "*Critical Review Regarding the Application of Plant Extracts as Eco-Friendly Corrosion Inhibitors-A Sustainable Interdisciplinary Approach*" , Source: MOLECULES, Volume 30, Issue 18, DOI10.3390/molecules30183722, Article Number 3722, Published SEP 12 2025, Indexed 2025-10-03, Document Type Review, Language English Accession Number **WOS:001580482900001**, PubMed ID 41011613, eISSN 1420-3049, IDS Number 7VG5V, **Journal Impact Factor - 0,82**, Category Quartile BIOCHEMISTRY & MOLECULAR BIOLOGY in SCIE edition: Q2; *CHEMISTRY, MULTIDISCIPLINARY in SCIE edition*: **Q2 (zona galbena).**
https://www.webofscience.com/wos/woscc/full-record/WOS:001580482900001

CITARI WOS-ISI

Barbu, CA (Barbu, Catalin Alexandru); Fierascu, I (Fierascu, Irina); Semenescu, A (Semenescu, Augustin); Cotrut, CM (Cotrut, Cosmin M.) "*Critical Review Regarding the Application of Plant Extracts as Eco-Friendly Corrosion Inhibitors-A Sustainable Interdisciplinary Approach*" , Source: MOLECULES, Volume 30, Issue 18, DOI10.3390/molecules30183722, Article Number 3722, Published SEP 12 2025, Indexed 2025-10-03, Document Type Review, Language English Accession Number **WOS:001580482900001**, PubMed ID 41011613, eISSN 1420-3049, IDS Number 7VG5V, **Journal**

Impact Factor - 0,82, Category Quartile BIOCHEMISTRY & MOLECULAR BIOLOGY in SCIE edition: Q2; *CHEMISTRY, MULTIDISCIPLINARY in SCIE edition*: **Q2 (zona galbena).**

1. "*Experimental and computational exploration of the corrosion inhibition potential of Prunus cerasus leaves aqueous extract on D16T aluminum alloy in 3.0% NaCl solution*", By Serikkaliyeva, A (Serikkaliyeva, Aida) [1] ; Vardanyan, R (Vardanyan, Ruben) [1] ; Asanova, D (Asanova, Dilyara) [1] ; Kozhevnikova, E (Kozhevnikova, Ekaterina) [1] ; Akatyev, N (Akatyev, Nikolay), Source:NEXT SUSTAINABILITY, Volume 7, DOI10.1016/j.nxsust.2026.100339, Article Number: 100339, Published: JUN 2026, Indexed: 2026-06-03 Document Type: Article, Language English, Accession Number: **WOS:001777787400001**, eISSN: 2949-8236, IDS Number: IQ3DV, Journal Impact Factor - 6.0, JCR Category: **Category Quartile : Q2 (zona galbena).**

2. "*Adsorption behaviour and corrosion inhibition mechanism of the major active molecules in Xanthii extract as green corrosion inhibitors: a quantum chemical and molecular dynamics study*", By Liu, X (Liu, Xiao); Ding, R (Ding, Rui); Bai, B (Bai, Bing); Zhang, YW (Zhang, Yi-we); Ding, XT (Ding, Xin-ting); Cao, HH (Cao, Hao-han); Li, JY (Li, Jin-ying); Liu, J (Liu, Jie), Source: MOLECULAR SIMULATION, DOI10.1080/08927022.2026.2679139, Early Access: MAY 2026, Indexed: 2026-05-30, Document Type: Article; Early Access, Language: English, Accession Number: **WOS:001773735200001**, ISSN 0892-7022, eISSN 1029-0435, IDS Number IK3MQ, Journal Impact Factor - 2.1, JCR Category: Category Quartile : Q3 (zona alba)"

3. "*Surface modification-driven mitigation of microbiologically influenced corrosion of mild steel by Lantana camara L. extract*", By: Ibrahim, S (Ibrahim, Suha); Pathak, AK (Pathak, Ashutosh Kumar); Ghanem, R (Ghanem, Rudina); Nancharaiah, YV (Nancharaiah, Y. V.) ; Sarkar, A (Sarkar, Angana), Source: INTERNATIONAL BIODETERIORATION & BIODEGRADATION,Volume 213, DOI10.1016/j.ibiod.2026.106371, Article Number: 106371, Published: JUL 2026, Early Access: MAY 2026, Indexed: 2026-06-07, Document Type: Article, Language: English, Accession Number: **WOS:001781828200001**, ISSN: 0964-8305, eISSN: 1879-0208, IDS Number: IW2SW, Journal Impact Factor - 4.4, JCR Category: **Category Quartile : Q2 (zona galbena)**

4. „*Internal Corrosion of Supercritical CO2 Pipelines: Integrated Influencing Factors, Mitigation Strategies, and Future Perspectives*", By: Hassan, A (Hassan, Adeel); Ismail, MC (Ismail, Mokhtar Che); Lah, NFC (Lah, Nuur Fahanis Che), Source: APPLIED SCIENCES-BASEL, Volume 16,Issue 10, DOI10.3390/app16104943, Article Number: 4943, Published: MAY 15 2026, Early Access: MAY 2026, Indexed: 2026-06-01, Document Type: Review, Language: English, Accession Number: **WOS:001776110300001**, eISSN: 2076-3417, IDS Number: IN8MX, Journal Impact Factor - 2.9, JCR Category: Category Quartile : Q3 (zona alba).

5. „*System-based evaluation of aqueous Piper guineense and Chrysophyllum albidum extracts as corrosion inhibitors for mild steel and aluminium in synthetic and bio-hybrid water-in-diesel emulsions*", By Nnadozie, CF (Nnadozie, Chukwuemeka Fortunatus); Onuoha, CP (Onuoha, Chiamaka Prisca); Obunaonye, CO (Obunaonye, Chijindu Ogechi) ; Uyo, CN (Uyo, Chijioke Ndukwe); Nwadike, EC (Nwadike, Emmanuel Chijioke), Source: CHEMICAL PAPERS, DOI10.1007/s11696-026-04917-z Early Access: APR 2026 Indexed 2026-05-02, Document Type: Article; Early Access, Language English, Accession Number: **WOS:001752008600001**, ISSN 0366-6352, eISSN 2585-7290, IDS Number HE3FA, Journal Impact Factor - 2.5, **Category Quartile Q2 (zona galbena).**

6. „*Flower-like Stearic Acid/Rosehip Oil Self-Assembled Layers for Copper Corrosion Protection*", By Fuchs-Godec, R (Fuchs-Godec, Regina), Source: CHEMENGINEERING, Volume 10, Issue 4, DOI10.3390/chemengineering10040053, Article Number 53, Published APR 21 2026, Early Access: APR 2026, Indexed: 2026-05-02, Document Type: Article, Language English, Accession Number: **WOS:001749362500001**, eISSN 2305-7084, IDS Number HA4DA, Journal Impact Factor - 3.4, **Category Quartile Q2 (zona galbena).**

7. „*Process Engineering Evaluation of Plant-Based Corrosion Inhibitors: Case Study of Citrus limon and Eucalyptus globulus*", By Bertouche, S (Bertouche, Sadjia) ; Kadem, S (Kadem, Souhila); Koribeche, S (Koribeche, Sabrina); Allaoui, K (Allaoui, Khalida); Aougabi, FZ (Aougabi, Fatima Zahra); Farah, L (Farah, Lilia); Laoufi, NE (Laoufi, Nour El Houda) ; Lezar, D (Lezar, Dounia; Sabba, N (Sabba, Nassila; Lebouachera, SE (Lebouachera, Seif El Islam), Source: PROCESSES, Volume 14, Issue 8, DOI10.3390/pr14081304, Article Number: 1304, Published: APR 19 2026, Early Access: APR 2026, Indexed: 2026-04-30, Document Type: Article, Language: English, Accession Number: **WOS:001749630700001**, eISSN: 2227-9717,IDS Number:HA8BT, Journal Impact Factor - 2.8, Category Quartile Q3 (zona alba).

8. „*Corrosion inhibition mechanism of Eupatorium capillifolium extract on mild steel: Insight from experimental and molecular dynamics simulations*", By Abeng, FE (Abeng, Fidelis E.) [1] ; Evo, SE (Evo, Solomon Ernest) [1] ; Mathias, GE (Mathias, Gideon E.) [2] ; Ikenyirimba, OJ (Ikenyirimba, Onyinye J.) [3] ; Thakur, A (Thakur, Abhinay) [4] ; Anadebe, VC (Anadebe, Valentine Chikaodili) [5] ; Mothudi, BM (Mothudi, Bakang M.) [5] , [6] ; Ebenso, EE (Ebenso, Eno E.), Source: RESULTS IN SURFACES AND INTERFACES, Volume 23, DOI10.1016/j.rsurfi.2026.100811, Article Number: 100811, Published MAY 2026, Early Access: APR 2026, Indexed: 2026-04-30, Document Type:Article, Language: English, Accession Number: **WOS:001748591400001**, eISSN: 2666-8459, IDS Number: GZ2TF, Journal Impact Factor - 4.4, **Category Quartile Q2 (zona galbena).**

9. "*Zataria multiflora essential oil as a green corrosion inhibitor for copper in HCl electrolyte*" By: Motlagh, ZJ (Motlagh, Z. Jafari); Karimi, M (Karimi, M.); Bozorg, M (Bozorg, M.); Rahimifard, M (Rahimifard, M.); Mahdavi, M (Mahdavi, M.), Source: MATERIALS TODAY COMMUNICATIONS, Volume: 2, DOI10.1016/j.mtcomm.2026.115067, Article Number: 115067, Published: MAR 2026, Early Access: APR 2026, Indexed: 2026-04-21, Document Type: Article, Language: English, Accession Number: **WOS:001742079800001**, eISSN: 2352-4928, IDS Number: GP6XK, Journal Impact Factor - 4.5, **Category Quartile Q2 (zona galbena).**

10. „*Comprehensive study of garlic peel extract coating against mild steel corrosion in saline medium*", By: Mangla, B (Mangla, Bindu); Ji, GP (Ji, Gopal); Kajal, K (Kajal, Kajal); Rawat, K (Rawat, Kanak); Kaushik, H (Kaushik, Harshita); Mittal, K (Mittal, Khushi); Sehrawat, R (Sehrawat, Rashmi); Vashishth, P (Vashishth, Priya); Bairagi, H (Bairagi, Himanshi); Sharma, DK (Sharma, D. K.); Source: DISCOVER CHEMICAL ENGINEERING, Volume 6, Issue 1, DOI10.1007/s43938-026-00110-6, Article Number: 13, Published: MAR 21 2026, Early Access: MAR 2026, Indexed: 2026-05-02, Document Type: Article, Language:English, Accession Number: **WOS:001752067000001**, eISSN: 2730-7700, IDS Number: HE4BM Current Publisher: SPRINGERNATURECAMPUS, 4 CRINAN ST, LONDON, N1 9XW, ENGLAND, Research Areas: Engineering, Web of Science Categories: Engineering, Chemical,

11. „*Extracts of sweet prayer leaf as corrosion inhibitors of mild steel in acidic medium: effects of extractants' properties*", By Adebayo, MA (Adebayo, Matthew A.); Aigbogun, JA (Aigbogun, Jane A.); Oluwafemi, KA (Oluwafemi, Kola A.); Oderemi, YO (Oderemi, Yekeen O.), Source: SCIENTIFIC REPORTS, Volume 16, Issue1, DOI10.1038/s41598-026-40232-z, Article Number: 8939, Published FEB 17 2026, Indexed 2026-03-19, Document Type: Article, Language English, Accession Number: **WOS:001714906700001**, PubMed ID 41699072, ISSN 2045-2322, IDS Number FB6SG, Citation Subset From MEDLINE®Index Medicus, Impact Factor:3.9, 5-Year Impact Factor: 4.3, **Category Quartile : Q1 (zona rosie).**

12. „*Organic Pyridinium Salts as Corrosion Inhibitors for Mild Steel in Acidic Wastewater: Experimental and DFT Study*", By Koufi, A (Koufi, Ayoub); Ziat, Y (Ziat, Younes); Belkhanchi, H (Belkhanchi, Hamza); Laghlimi, C (Laghlimi, Charaf), Source: COATINGS, Volume16, Issue 2, DOI10.3390/coatings16020148, Article Number 148, Published JAN 23 2026, Indexed 2026-03-07, Document Type: Article, Language: English, Accession Number: **WOS:001700961800001**, ISSN 2079-6412, IDS Number EH1LF, Impact Factor: 2.8, 5-Year Impact Factor (2024): 3.0 **Category Quartile: Q2(zona galbena),**

Publicarea în reviste științifice BDI

1. ***Barbu Cătălin***, Irina Fierascu, Augustin Semenescu,"*Plants' phytochemicals – a critical discussion on their potential to protect cultural heritage objects*", Current Trends in Natural Sciences, 2023, Vol. 12., Iss. 23, pp. 28-35, **DOI: 10.47068/ctns.2023.v12i23.003**, ISSN (online) 2284-953X, ISSN-L 2284-9521, Publisher University of Pitesti.
https://www.researchgate.net/publication/373729681_PLANTS'_PHYTOCHEMICALS_-_A_CRITICAL_DISCUSSION_ON_THEIR_POTENTIAL_TO_PROTECT_CULTURAL_HERITAGE_OBJECTS

B. Participări la conferințe/workshop-uri

Participarea la conferințe internaționale

1. ***Barbu Cătălin***, Irina Fierăscu, Alina Ortan, Augustin Semenescu, *Hybrid coatings for protecting metallic objects with cultural value*, Simpozionul Internațional - Prioritățile Chimiei pentru o Dezvoltare Durabilă, PRIOCHEM XVIII – 2022 (26-28.10.2022, București), Book of abstracts, 18/2022, p. 37
chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://icechim.ro/wp-content/uploads/summary2022-BoA-1.pdf

Participarea la conferințe naționale

1. *Exploring the role of silver in the Industry 4.0* - ***Cătălin A. Barbu***, Augustin Semenescu, ROMAT 2024, National University of Science and Technology Politehnica Bucharest, Romania, Conference program & BOOK OF ABSTRACTS, pag. 123/291
2. *Artificial intelligence - potential benefits for silver* - ***C.A. Barbu****, A. Semenescu, D.F. Marcu, B. Florea, ROMAT 2024, National University of Science and Technology Politehnica Bucharest, Romania, Conference program & BOOK OF ABSTRACTS, pag. 238/291
3. *Classical versus innovative methods used for artifact protection/cleaning*, by ***Catalin Alexandru BARBU***, Augustin Semenescu, Conferința Științifică de Toamnă a AOSR, 2024, Iași, 23-24 Septembrie 2024, Tema: Rolul Inteligenței Artificiale în Dezvoltarea Durabilă a României

4. *Natural Corrosion Inhibitors – an Interdisciplinary Solution for the Sustainable Conservation of Cultural Heritage, in the Context of the Connection Between Exact Sciences and Art*, by ***Catalin Alexandru BARBU***, Augustin SEMENESCU, Irina FIERASCU, Conferința Științifică Națională de Primăvară, 23 – 24 Mai 2025, București, Book Of Abstracts, Scientific Conference, Academy Of Romanian Scientists, Print ISSN 2601 - 5102, pag. 12 & 88.
5. *The Practical Implications of Science in Innovation Management* , by ***Catalin Alexandru BARBU***, Augustin SEMENESCU, Sorin Marius AVRAMESCU, Conferința Științifică Națională de Primăvară, 23 – 24 Mai 2025, București, Book Of Abstracts, Scientific Conference, Academy of Romanian Scientists, Print ISSN 2601 - 5102, pag. 13 & 89.

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