

PERSONAL INFORMATION

Delia-Andrada DUCA



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JOB APPLIED FOR

PhD student – IOSUD University Politehnica Timisoara, Doctoral School of Engineering Studies, Chemical Engineering – under the scientific leadership of prof.univ.dr.ing Nicolae Vaszilcsin

WORK EXPERIENCE

September 2019 – present

Associate University Assistant – Electrochemistry, Corrosion and corrosion protection methods, Energy resources management, General chemistry

Politehnica University Timisoara, Department of Applied Chemistry and Engineering of Inorganic Compounds and Environment

V. Pärvan Blvd., no. 6, Timișoara, 300223, România

www.chim.upt.ro

Sector: Education, teaching

June 2018 – March 2020

Innovation student – Trend Antenna Timișoara, Trainee P ES – Electrification team

Continental Automotive România SRL - Continental Powertrain Engineering SRL - Vitesco Technologies Engineering

Siemens Str., no. 1, Timișoara, 300724; Buziașului Str., no. 11A, Timișoara, 307285, România

www.continental-corporation.com

Sector: Automotive, innovation, research and development

October 2015 – present

Research Assistant

Politehnica University Timisoara, Faculty of Industrial Chemistry and Environmental Engineering

Victory Square, no. 2, Timișoara, 300006, România

www.upt.ro

Sector: Education and research

EDUCATION AND TRAINING

October 2015 – present

PhD Studies

ISCED 6

Politehnica University Timisoara, Faculty of Industrial Chemistry and Environmental Engineering

▪ Chemical Engineering – Electrochemistry, Corrosion and Electrochemical Engineering

2013 – 2015

Master Degree – M. Eng

ISCED 5

Politehnica University Timisoara, Faculty of Industrial Chemistry and Environmental Engineering

▪ Environmental Engineering – Environmental Engineering and Management in Industry

2009 – 2013

Bachelor Degree – Chemical Engineer

ISCED 5

Politehnica University Timisoara, Faculty of Industrial Chemistry and Environmental Engineering

▪ Chemical Engineering – Engineering of Inorganic Substances and Environmental Protection

2005 – 2009 **Baccalaureate Certificate**
 “Ana Aslan” National College Timisoara
 ▪ Natural Sciences

ISCED 3

PERSONAL SKILLS

Mother tongue Romanian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Listening	Reading
English	C1	C1	C1	B2	B2
German	A2	A2	A1	A1	A1
French	A1	A1	A1	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
 Common European Framework of Reference for Languages

Job-related skills

- Laboratory work experience;
- University teaching;
- Interdisciplinary start-up approach;
- Experience in renewable energy production and storage, electrolysers and fuel cells;
- Knowledge in e-mobility field, electric vehicles and charging stations;
- Research experience in electrochemistry, corrosion and electrochemical engineering;
- Experience in metal electrodeposition and corrosion protection methods;
- People management;
- Description, analysis and use of the basic concepts and theories from engineering science field, chemistry and chemical engineering field;
- Interdisciplinary approach of engineering problems;
- Information and permanent documentation with the use of modern information and communication.

Social skills

- Team spirit and good communication skills gained through volunteering and teaching activities;
- Ability to adapt to new cultures, customs and habits from my Erasmus experience and participation to international training courses and conferences;
- Easy working in a flexible way with different kind of people;
- Ability to adapt to new situations and prioritize tasks.

Computer skills

- Microsoft Office™ (Word, Excel, PowerPoint, Publisher)
- Origin Pro
- CorelDraw
- Aspen Plus
- MATLAB
- Photoshop
- Wondershare Filmora X, DoodleMaker

Organisational / managerial skills

- Leadership and management developed through coordinating the activity of the NGO I've been volunteering at, Chemists Students League of Timisoara, occupying the positions of president and vice president;
- Experience in project management gained through coordinating several projects of local and national interest;
- Ability of working under stress, analytical thinking and good time management gained through participating to different projects and working experience.

- International experience**
- Erasmus Traineeship (March – September 2015)
Westphalian Energy Institute, Westphalian University of Applied Science, Gelsenkirchen, Germany
- [Electrochemistry and material science](#)
- Training Course – Electrochemical processing methodologies and corrosion protection for device and systems miniaturization
April 2016 – Schwäbisch Gmünd, Germany
April 2017 – Brno, Czech Republic
- [Electrochemistry](#)
- Participation to international conferences and workshops
- [Chemical engineering, electrochemistry, environmental engineering, material science](#)
- Research projects**
- Member in project – *Nou design modular al electrolizorului pentru tehnologia PEM de electroliză a apei la presiune ridicată cu o gamă largă de operare și cost redus*; PN-III-P3-3.6-H2020-2020-0049
 - Member in project – *Combinatorial Design of Novel Bipolar Plate Coatings for Proton Exchange Membrane Electrolyzers (CoDe-PEM)* EEA-0502-CTR. 2/2019
 - Member in project Horizon 2020 – *Novel modular stack design for high pressure PEM water electrolyzer technology with wide operation range and reduced cost (PRETZEL)*; 779478/2017/FCH2-JU
 - Member in Research projects for the stimulation of the funding of young independent research teams (TE) – *Valorificarea eco-eficientă a deșeurilor de la zincare termică sub formă de argile anionice aplicabile în eliminarea compușilor indezirabili din ape*; PN-II-RU-TE-2014-4-0771
- Volunteering**
- President (2011 – 2013), Vice President (2013 – 2014), Member (2011)
Chemists Students League of Timisoara (LSCT) www.lsct.ro
- Member (2011 – 2014)
National Alliance of Student Organization from Romania (ANOSR) www.anosr.ro
- Member of council (2011 – 2017) and senate (2011 – 2013)
Faculty of Industrial Chemistry and Environmental Engineering www.chim.upt.ro,
Politehnica University Timisoara www.upt.ro
- Other skills**
- TUV Karpat – **Auditor for ISO 14001** – Certificat registration: 2/12/22/703/793;
 - Google **Digital Marketing** certificate;
 - Workshop Wiley *How to publish your paper in international magazines*;
 - Workshop from Netzsch Group *Thermal analysis methods for materials characterization*;
 - I graduated the **psycho-pedagogical module for teaching** in middle and high-school (2014);
 - I gained different skills in the field of **leadership, public relations, marketing, sales** and others by participating at training modules and team-buildings.
- Driving licence**
- A, B (2009)

ADDITIONAL INFORMATION

- Published books**
- M.L. Dan, **D.A. Duca**, N. Vaszilcsin, *Introducere în Tehnologia Proceselor Electrochimice*, Editura Politehnica, 2017, ISBN 978-606-35-0196-8, 183 pag
- Patents**
- L. Coheci, L. Lupa, M. Gheju, **D.A. Duca**, P. Negrea, R. Pode, *Procedeu de preparare a hidroxizilor dubli stratificați, de tipul ZnAl-Co*, RO132138 (A0) - 2017-09-29, 2017
- ISI articles**
- A. Kellenberger, **D. Duca**, M.L. Dan, M. Medeleanu: *Recycling Unused Midazolam Drug as Efficient Corrosion Inhibitor for Copper in Nitric Acid Solution*, Materials, **2022**, 15, 2918, doi: 10.3390/ma15082918, **IF: 3.748**

- A. Kellenberger, N. Vaszilcsin, **D. Duca**, M.L. Dan, N. Duteanu, S. Stiber, T. Morawietz, I. Biswas, S.A. Ansar, P. Gazdzicki, F.J. Wirkert, J. Roth, U. Rost, M. Brodmann, A.S. Gago, K.A. Friedrich: *Towards Replacing Titanium with Copper in the Bipolar Plates for Proton Exchange Membrane Electrolysis*, *Materials* **2022**, 15(5), 1628, doi: 10.3390/ma15051628, **IF: 3.748**
- **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Recycling of Expired Cefotaxime Drug as Additive in the Copper and Nickel Electrodeposition from Acid Baths*, *International Journal of Environmental and Public Health*, **2021**, 18(18), 9476, doi: 10.3390/ijerph18189476, **IF: 4.614**
- A. Kellenberger, **D.A. Duca**, N. Vaszilcsin, C.M. Crăciunescu: *Electrochemical evaluation of Nb corrosion resistance in simulated anodic PEM electrolyzer environment*, *International Journal of Electrochemical Science*, **2020**, 15, 10664-10673, doi: 10.20964/2020.11.47, **IF: 1.765**
- N. Vaszilcsin, **D.A. Duca**, A. Flueraș, M.L. Dan: *Expired Drugs as Inhibitors in Electrochemical Processes – a mini-review*, *Studia Chemia*, **2019**, 64(3), 17-32, doi:10.24193/subbchem.2019.3.02, **IF: 0.558**
- **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Reuse of Expired Cefotaxime Drug in Nickel Electrodeposition From Watts Bath*, *Chemistry Journal of Moldova*, **2017**, 12(1), 87-94, dx.doi.org/10.19261/cjm.2017.402

ISI Proceedings articles

- M-A. Lăboșel, M.L. Dan, G-D. Dima, D.A. Duca: *Anodic Sulphite Oxidation on Lead Electrode in a Neutral Environment*, *Materials Today Proceedings*, **2022**, corrected proof
- M-A. Lăboșel, **D.A. Duca**, N. Vaszilcsin, M.L. Dan: *Electrochemical oxidation of sulphite in neutral media on graphite*, *Materials Today Proceedings*, **2021**, 45(5), 4233-4236, doi: 10.1016/j.matpr.2020.12.196
- **D.A. Duca**, N. Vaszilcsin, M.L. Dan: *Recycling of Expired Midazolam as Levelling Agent in a Watts Electroplating Bath*, *SGEM Proceedings*, **2016**, 4(2), 105-112, doi: 10.5593/SGEM2016/B42/S18.014
- **D.A. Duca**, L. Lupa, L. Coșeci, R. Poșe: *Reclaiming of Zinc Ash as Zincite and Layered Double Hydroxide*, *SGEM Proceedings*, **2016**, 4(2), 97-104, doi: 10.5593/SGEM2016/B42/S18.013

BDI articles

- **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Expired Domestic Drug - Paracetamol - as Corrosion Inhibitor for Carbon Steel in Acid Media*, *IOP Conference Series Materials Science and Engineering*, **2018**, 416, 012043, doi:10.1088/1757-899X/416/1/012043.
- **D.A. Duca**, M.L. Dan, A.Z. Vidinaru, R. Muntean, N. Vaszilcsin: *Enhancement of Hydrogen Evolution Reaction on Pt-Co Layer Deposited on Copper*, *IOP Conference Series Materials Science and Engineering*, **2018**, 416, 012033, doi:10.1088/1757-899X/416/1/012033.
- **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Ceftriaxone as Corrosion Inhibitor for Nickel in Acid Solutions*, *Advances in Engineering and Management*, **2018**, 27, 74-85.
- V.D. Craia-Joldes, M.L. Dan, **D.A. Duca**, N. Vaszilcsin: *Calcium-doped Y114 Layered Cobalt Perovskite, a Promising Anodic Material for Direct Methanol Fuel Cell*, *Advances in Engineering and Management*, **2018**, 27, 63-74.
- **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Voltammetric Studies of Methanol Electrooxidation in Alkaline Solutions on Skeletal Nickel Based 6 Layers Platinum Nanoparticles Electrode*, *Bulletin of the Georgian Academy of Sciences*, **2016**, 43(3), 350-354.
- M.L. Dan, **D.A. Duca**, N. Vaszilcsin: *Voltammetric Studies of Ca Doped Y-114 Layered Cobalt Perovskite with Catalytic Effect for Ethanol Electrooxidation in Alkaline Solutions*, *Bulletin of the Georgian Academy of Sciences*, **2016**, 43(3), 340-344.
- C.G. Vaszilcsin, M.L. Dan, **D.A. Duca**: *Inhibitory Effect of Resveratrol on Aluminum Corrosion in Alcoholic Solutions*, *Bulletin of the Georgian Academy of Sciences*, **2016**, 43(3), 355-359.
- **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Reuse of Expired Cefotaxime Drug in Copper Electrodeposition from Acid Bath*, *University of Oradea – Environmental protection*, **2016**, 27, 229-236.
- M.L. Dan, **D.A. Duca**, N. Vaszilcsin: *Voltammetric Studies of Ethanol Electrooxidation in Alkaline Media on Skeletal Nickel Electrode*, *University of Oradea – Environmental protection*, **2016**, 27, 221-228.
- M.L. Dan, N. Vaszilcsin, **D.A. Duca**, V.D. Craia-Joldes: *Ca Doped Y-114 Layered Cobalt Perovskite Electrodes with Catalytic Effect for Methanol Electrooxidation in Alkaline Solutions. I. Voltammetric studies*, *Chemical Bulletin of Politehnica University of Timisoara*, **2016**, 61(75) (1), 17-22
- **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Studies on the Possibility of Using Caffeine as Additive in a Watts Nickel Electroplating Bath*, *University of Oradea – Environmental protection*, **2015**, 25, 177-184.

Conference papers

- *8th Regional Symposium on Electrochemistry S – E Europe*, July **2022**, Graz, Austria
 - A. Kellenberger, **D.A. Duca**, M.L. Dan, M. Medeleanu: *Recycling Unused Midazolam Drug as Efficient Corrosion Inhibitor for Copper in Nitric Acid Solution*

- *12th International Conference on Materials Science and Engineering – BraMat*, March **2022**, Brasov, Romania
 - D.N. Avram, C.M. Davidescu, M.L. Dan, **D.A. Duca**, J.C. Mirza Rosca, E.M. Stanciu, A. Pascu: *Corrosion resistance of NiCr(Ti) coatings for metallic bipolar plates*
- *7th Regional Symposium on Electrochemistry S – E Europe*, May **2019**, Split, Croatia:
 - A. Kellenberger, N. Vaszilcsin, **D.A. Duca**, M.L. Dan, N. Duteanu, S. Stiber, P. Assmann, A.S. Gago, K.A. Friedrich: *Corrosion resistance of niobium coatings on copper bipolar plates for proton exchange membrane electrolyzers*
- *10th Romanian International Conference on Chemistry and Chemical Engineering*, September **2017**, Poiana Brasov, Romania:
 - **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Recycling of Domestic Drug – Paracetamol – as Additive in Nickel and Copper Electrodeposition Baths*
- *10th Edition of symposium with international participation – New trends and strategies on the chemistry of advanced materials with relevance in biological systems, technique and environmental protection*, June, **2017**, Timisoara, Romania:
 - M.A. Labosel, C.G. Vaszilcsin, **D.A. Duca**, M.L. Dan: *Stainless Steel Corrosion in Ethanol Solutions in the Presence of Sulfite Ions - A Permanent Problem in the Wine Industry*
 - A. Păcurariu, **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Corrosion of Aluminum in Alcoholic Solution – A Permanent Challenge in Food and Drinks*
- *International U.A.B. – B.EN.A. Conference Environmental Engineering and Sustainable Development*, May **2017**, Alba-Iulia:
 - **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Expired Ceftrimoxil as Additive in Copper and Nickel Electrodeposition from Acid Baths*
 - C.G. Vaszilcsin, **D.A. Duca**, M.A. Labosel, M. Dan: *Myricetin as Corrosion Inhibitor for Metals in Wine Industry*
- *6th International Conference Ecological and Environmental Chemistry*, March **2017**, Chisinau, Republic of Moldova
 - **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Reuse of Expired Cefotriaxone Drug in Nickel Electrodeposition from Watts Bath*
 - V.D. Craia-Joldes, M.L. Dan, **D.A. Duca**, N. Vaszilcsin: *Calcium Doped Y-114 Layered Cobalt Perovskite, a New Electrocatalytic Material for Ethanol Oxidation in Alkaline Media*
- *22nd International Symposium on Analytical and Environmental Problems*, October **2016**, Szeged, Hungary:
 - **D.A. Duca**, N. Vaszilcsin, M.L. Dan: *Studies on the Possibility of Using Expired Ceftriaxone Drug as Additive in Acid Electroplating Baths*
 - **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Skeletal Nickel Electrode with Catalytic Effect for Ethanol Electrooxidation in Alkaline Media*
 - M.L. Dan, **D.A. Duca**, N. Vaszilcsin: *Skeletal Nickel Based 6 Layers Platinum Nanoparticles Electrode with Catalytic Effect for Ethanol Electrooxidation in Alkaline Media*
 - M.L. Dan, **D.A. Duca**, N. Vaszilcsin, N.M. Dragomir: *Comparative Studies for 2-Propanol Electrooxidation on Platinum and Nickel Electrodes in Alkaline Media*
 - V.D. Craia-Joldes, M.L. Dan, **D.A. Duca**, N. Vaszilcsin: *Y_{0.5}Ca_{0.5}BaCo₄O₇ Perovskite Electrodes with Catalytic Effect for Methanol and Ethanol Electrooxidation in Alkaline Media*
 - C.G. Vaszilcsin, M.L. Dan, **D.A. Duca**, M. Labosel: *Resveratrol as Corrosion Inhibitor for Metals in Wine and Food Industries*
- *9th Edition of symposium with international participation – New trends and strategies on the chemistry of advanced materials with relevance in biological systems, technique and environmental protection*, June **2016**, Timisoara, Romania:
 - **D.A. Duca**, M.L. Dan, N. Vaszilcsin: *Reuse of Expired Ceftriaxone Drug as Additive in a Watts Nickel Electroplating Bath*
 - C.G. Vaszilcsin, M.L. Dan, **D.A. Duca**, M.A. Labosel, Z. Urmosi: *Inhibitory Effect of Resveratrol for Carbon Steel Corrosion in Alcoholic Solutions*
 - V.D. Craia-Joldes, M.L. Dan, **D.A. Duca**, N. Vaszilcsin: *114 Layered Cobalt Perovskite Electrodes with Catalytic Effect for Ethanol Electrooxidation in Alkaline Solutions*
- *21st International Symposium on Analytical and Environmental Problems*, September **2015**, Szeged, Hungary:
 - **D.A. Duca**, N. Vaszilcsin, M.L. Dan: *Recycling of Expired Drugs as Additive in a Watts Nickel Electroplating Bath*

- *5th Regional Symposium on Electrochemistry S – E Europe*, June **2015**, Pravets, Bulgaria:
 - N. Vaszilcsin, M. Dan, **D. Duca**, L. Bunduc, *Expired Streptomycin as Additive in a Watts Nickel Electroplating Bath*
- *8th Edition of symposium with international participation – New trends and strategies on the chemistry of advanced materials with relevance in biological systems, technique and environmental protection*, June **2015**, Timisoara, Romania:
 - **D.A. Duca**, M.L. Dan, N. Vaszilcsin, *Expired Midazolam as Additive in a Watts Nickel Electroplating Bath*

Academically references

Faculty of Industrial Chemistry and Environmental Engineering, Politehnica University Timisoara

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Applied Chemistry and Engineering of Inorganic Compounds and Environment, Politehnica University Timisoara

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