



PhD. Student Alexandru-Constantin Stoica

PhD student, research assistant

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▼ Education

2011-2015 - High school diploma - "Grigore Antipa" Theoretical High School, Botoșani, Science Profile, Specialty Natural Sciences

2015-2018 - Bachelor's Degree, Major in Technological Biochemistry, "Alexandru Ioan Cuza" University of Iași, Faculty of Chemistry
2018-2020 - Master's Degree, Major in Chemistry of Cosmetic and Pharmaceutical Products, "Alexandru Ioan Cuza" University in Iași, Faculty of Chemistry

2020-present - PhD Student at the School of Advanced Studies of the Romanian Academy, "Petru Poni" Institute of Macromolecular Chemistry. PhD thesis: 2D materials based on two-dimensional permethylated metal-organic networks.

▼ Experience

15.11.2018-30.04.2021 - research assistant, "Petru Poni" Institute of Macromolecular Chemistry, within the extra budgetary project: PN-III- P1-1.2-PCCDI-2017-0185, <http://www.3nanosae.org/ecotech-gmp/>: •Synthesis and characterization of silane and siloxane-containing ligands, and their complex combinations; •Recovery and re-utilization of platinum group metals from used automotive catalytic converters;

•The use of characterization techniques FTIR, UV-VIS, NMR, XRD and the interpretation of the results obtained; •Synthesis of platinum-based composites and their using in catalysis.

05.03.2021-31.12.2023 - research assistant, "Petru Poni" Institute of Macromolecular Chemistry, within the extrabudgetary project: PN-III- P4-ID-PCE-2020-2000, <https://www.2dpermosil.ro/>:

•Synthesis and characterization of two-dimensional metal-organic networks, with or without siloxane fragment; •Structural characterization of networks by single crystal X-ray diffraction (data acquisition and processing).

Research topics

I am PhD student at the School of Advanced Studies of the Romanian Academy (SCOSAAR) and I work at the "Petru Poni" Institute of Macromolecular Chemistry, Grigore Ghica Vodă Alley 41A, Iasi 700487, Romania, in the Department of Inorganic Polymers. My areas of interest are the synthesis and characterization of ligands with silane or siloxane skeleton, and their 0D-3D complex combinations with transition metals and platinum, preparation of platinum-based composites as catalysts, fine organic synthesis, synthesis of polymers and oligomers, with skills in structural analysis and elucidation of the structures by single crystal X-ray diffraction (XRD).

▼ Published Papers

1. Salen-type Schiff bases spaced by the highly flexible and hydrophobic tetramethyldisiloxane motif. Some synthetic, structural and behavioral particularities, *Journal of Molecular Liquids*, 316 (2020): 113852, doi: 10.1016/j.molliq.2020.113852, IF=6.165

2. Dual crystalline–amorphous salen–metal complexes behave like nematic droplets with AIEgens vistas, *Dalton Transactions*, 50 (2021): 13841-13858, doi: 10.1039/d1dt01980e IF=4.390

3. Two-dimensional coordination polymers containing permethylated motifs - promising candidates for 2D emerging materials. Structural, behavioral and functional particularities, *Reactive and Functional Polymers*, 168 (2021): 105039, 10.1016/j.reactfunctpolym.2021.105039, IF=3.975
4. One-pot reduction-hydrophobization of heterogenized platinum with 1,1,3,3-tetramethyldisiloxane, *Applied Organometallic Chemistry*, (2021): e6485, doi: 10.1002/aoc.6485, IF=4.105
5. Silanol-functionalized tetranuclear copper complex and its nanoscale-heterogenization by immobilization on glass surface from solution, *Journal of Molecular Liquids*, 344 (2021): 117742, doi: 10.1016/j.molliq.2021.117742, IF=6.165
6. Octakis(Carboxyalkyl-Thioethyl)Silsesquioxanes and Derived Metal Complexes: Synthesis, Characterization and Catalytic Activity Assessments, *Journal of Inorganic and Organometallic Polymers and Materials*, (2022), doi: 10.1007/s10904-022-02408-8, IF= 3.543
7. Fourteen-member silacycle built by cascade reactions induced by a platinum catalyst, *Journal of Molecular Structure*, 1269 (2022): 133760, doi: 10.1016/j.molstruc.2022.133760, IF=3.841
8. Some Theoretical and Experimental Evidence for Particularities of the Siloxane Bond, *Molecules*, 23 (2022): 8563, doi: 10.3390/molecules27238563, IF=4.927
9. Micellization Turned on Dual Fluorescence and Room Temperature Phosphorescence by Pseudo-ESIPT in Thiadiazole Derivatives, *Journal of Physical Chemistry C*, 127 (2022) 99-109, doi: 10.1021/acs.jpcc.2c07651, IF=4.177
10. A Manganese(II) 3D Metal–Organic Framework with Siloxane-Spaced Dicarboxylic Ligand: Synthesis, Structure, and Properties, *Inorganics*, 21 (2023), doi: 10.3390/inorganics11010021, IF= 3.149
11. Ferronematic Co(II) Complex: An Active Filler for Magnetically Actuated Soft Materials, *Small*, (2023): 2307006, 10.1002/sml.202307006, IF=13.3
12. Fully carboxy-functionalized polyhedral silsesquioxanes as polar fillers to enhance the performance of dielectric silicone elastomers, *Polymer*, 15 (2023): 126492, 10.1016/j.polymer.2023.126492, IF=4.6

Invention patents, no. A/00272/2020, title: Process of re-utilization of used catalysts from car exhaust; no. A/00664/2023 Process for obtaining a module of polymeric pressure sensors for detecting a mechanical impact.

Presentations: Fifteen oral communications and eleven posters at international conferences.

Awards and honors: Gold Medal Inventica 2020, Carmen Racleș, Maria Cazacu, Alexandru Stoica, Cornelia Diac, Process for reuse of exhausted catalytic converters; Best Young Scientist Poster Presentation for poster: Stoica A.-C., Dascalu M., Damoc M., Cazacu M. Some coordination polymers with pyridine-based ligands: synthesis and structural characterization. *Progress in Organic and Macromolecular Compounds*, 29th Edition, 4-6.10.2023, Iasi, Romania.

Participation in thematic schools: The international school on innovations in homogeneous and supported homogeneous catalysis, 25-28.04.2023, București, România; Thematic school vibrational and electronic spectroscopies applied to the study of reaction mechanisms - MECAREACT, 18-23.06.2023, Paris, France.

Research internships: Institute of Organic Synthesis at Taras Shevchenko National University of Ukraine, Kiev, 28.08-27.10.2021, Project- H2020-MSCA-RISE-2016, SPINSWITCH No. 734322; Rigaku, MINIFLEX TRAINING (EUROPE), Neu-Isenburg, Germania, 09-10 October 2023.

Visibility

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