




Curriculum Vitae



Surname/First name	Cazacu Maria Scientific researcher gr. I, "Petru Poni" Institute of Macromolecular Chemistry Iași, head of the Department of Inorganic Polymers, PhD supervisor in the field of chemistry at the Doctoral School of Chemical Sciences, School of Advanced Studies of the Romanian Academy - SCOSAAR.
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Professional Experience	<ul style="list-style-type: none">• 1997-present: Institute of Macromolecular Chemistry "Petru Poni" Iași, Inorganic Polymers Laboratory (1989-1990 – engineer; 1990-1997 – scientific researcher; 1997-2001 – scientific researcher grade III; 2001-2007 – scientific researcher grade II; 2007-present – scientific researcher grade I), PhD supervisor in chemistry since 2010 (ten PhD theses completed, two of which were co-supervised, one PhD student currently in progress);• 1981-1989: "FIRMELEBO" Spinning Mill - Botosani, Romania: Probationer Engineer, Team Leader, Quality Technologist.
Education	Ph.D. (April 1996), Romanian Academy, "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania; topic: Synthesis of the siloxane polymers and copolymers by heterogeneous catalysis. B.S. (July 1981), Department of Macromolecular Compounds Technology, Faculty of Industrial Chemistry, "Gh. Asachi", Polytechnic Institute of Iasi, Romania.
Publications	274 scientific articles in journals with impact factor (WoS database), author of one book, editor for two books, author/co-author of 11 book chapters and 13 patents, including one international patent (8 granted and 5 under review).
Scientometric indicators	3430 citations (2477 without self-citations), h-index=28 (<i>Web of Science</i>); 3754 citations, h-index=29 (<i>ResearchGate</i>); 4233 citations, h-index=32, i10-index=143 (Google Scholar).
Awards, membership of professional organizations	<ul style="list-style-type: none">• The Romanian Academy Prize for Chemistry, "C. D. Nenitescu", 1996;• Gold Medal at International Exhibition of Inventions Scientific Research and New Technologies, Inventika 2009, 13th edition, October 2009, Bucuresti, Romania for the Patent "Polymer-based microactuator";• Gold Medal at Innovation National Exhibition CHIM-INVENT, 20-22 October, 2005, Iasi, Romania;• Diploma and Medal "Petru Poni" at National Salon of Inventions CHIMINVENT 2013, Iasi, Romania;• Diploma and Medal "CHIMINVENT" Salon of Inventions National CHIMINVENT

	<p>2013, Iasi, Romania;</p> <ul style="list-style-type: none"> • Gold Medal at the 22nd International Exhibition of Invention "INVENTICA 2018", Iasi, June 27-29, 2018; <p>"Petru Poni" Medal and the Diploma of Honor for outstanding contributions to the promotion of chemistry awarded by the Romanian Chemistry Society, July 2019;</p> <ul style="list-style-type: none"> • 2000 - present, member of the Romanian Chemical Society; • from 2023 – corresponding member of the Romanian Academy.
Areas of interest	<ul style="list-style-type: none"> • <i>Monomers, polymers, and silicone materials</i>: optimization of controlled synthesis methods and their use, either as-is or as platforms for the development of new compounds and materials through appropriate chemical modification and processing. These compounds and materials are designed to retain their signature characteristics and are of interest for targeted applications, ranging from medicine to high-performance applications; • <i>Stimuli-responsive, self-healing, and recyclable, organic-inorganic polymers and materials</i>, responsive to various stimuli (electrical, mechanical, optical, thermal, environmental polarity, pH); • <i>Synthesis of ligands on amorphous silicon substrates and assembly of highly ordered coordination structures</i> with dimensionality from 0 to 3D, with various metals; identification of the unique features induced by the presence of the silicon structural motif in such compounds and their exploitation; • <i>Interdisciplinary collaborations</i>, including polymer chemistry and physics, medicine, electrochemistry, catalysis, magnetism, environmental protection, biology, electronics, construction, energy, etc., to identify the potential applications of silicon compounds and derived materials.
Professional skills	<ul style="list-style-type: none"> • Silicon heterocycles: synthesis and their chemical handling to obtain derived compounds and materials; • Synthesis of silicone oligomers, polymers and copolymers by various procedures; • Polymerization techniques (ionic, radicalic, ring-opening polymerization, polycondensation); • Chemical modification and processing of silicone polymers in the form of rubbers, oils, adhesives; • Design and preparation of polymeric materials for target applications (eg, energy, dentistry, prosthetic, construction, textiles, electronic, etc.); • Preparation of organic-inorganic copolymers; segmented and graft copolymers having various internal functions (ester, ether, amide, imide, anhydride, azomethine, azo) able to develop specific properties (biphasic morphology, photochemical, surface, liquid crystalline, controlled degradability, etc.); • Preparation of organic/inorganic hybrid materials (composites, networks, hybrids); • Synthesis of ligands with silicone spacers or tails and metal coordination structures with different dimensionalities (0D, 1D, 2D or 3D).
Language	Mother tongue: Romanian; Other languages: English, Russian.
Organisational skills and competences	Project management: Coordination of the scientific activities for a research team (8-14 members) in the period 2000-present; Head of Department of Inorganic Polymers since 2015 (30-40 members).

Involvement in research projects	<p>45 projects:</p> <p>13 projects as project coordinator (one of the projects was funded by the European Regional Development Fund);</p> <p>12 projects as leader of the partner team (one FP7 European project and one COST project - national leader, management committee member for COST Action MP1003 European Scientific Network for Artificial Muscle, ESNAM);</p> <p>20 projects as team member;</p> <p>Seven applied research works (team member).</p> <p>Main research projects:</p> <ul style="list-style-type: none"> •2D Emergent Materials Based on Two-Dimensional Permethyated Metal-Organic Networks, 2D-PerMONSiL, Research Project: PN-III-P4-ID-PCE-2020-2000/ (207/2021, 2021-2023); •Soft Electromechanical Transducers Based on 3D Printed Silicones, 3DETSi, Demonstrative Experimental Project, PN-III-P2-2.1-PED-2019-3652 (320PED/2020, 2020-2022); •Metal-Organic Frameworks with Finely Tuned Hydrophobicity Using Silicon Chemistry, SiMOF, Research Project: PN-III-P4-ID-PCE-2016-0642 (114/2017, 2017-2019); •Silicon-Based Conversion Units Obtained through "Green" Chemistry, GrEENergy, Demonstrative Experimental Project, PN-III-P2-2.1-PED-2016-0188 (68PED/2017, 2017-2018); •New Coordination Networks Containing Flexible Polyfunctional Bridges, Exploratory Research Projects - PN-II-ID-PCE-2012-4, Contract 53/2013, 2013-2016; New Mechanisms and Concepts for Exploiting Electroactive Polymers for Wave Energy Conversion, PolyWEC, FP7 Collaboration Project - Energy-2012-1-2STAGE, GA 309139 (2012-2016); •Synthesis and Study of Polymeric Metallosiloxanes – New Materials of Interest for Catalysis and Nanoscience (POLISILMET), SOP IEC-A2-O2.1.2-2009-2, ID 570 (2010-2013); •Multifunctional Nanostructured Siloxane Materials (NANOSIMAT), CEEX-MATNANTECH Contract 52/2006 (2006-2008).
Other activities	<p>Peer-review activity for national (UEFISCDI) and international (INTAS, ERA.NET RUS, National Science Centre - Poland, Czech Science Foundation) programs/projects;</p> <p>Peer-review activity for scientific journals (more than 170 articles reviewed in the last 10 years);</p> <p>Member of the Examination Board for 16 doctoral and three habilitation theses;</p> <ul style="list-style-type: none"> •Member of the editorial board of Revue Roumaine de Chimie and Revista de Chimie; •Member of promotion committees for higher positions (CSI, CSII, Professor); •Member of the Academic Advisory Committee for the North-East Regional Development Agency; •Member of CNATDCU: 2016-2020; 2020-present, vice president of the chemistry section; •Member of CSUD-SCOSAAR. 

Publicaions (selective)

1. Cazacu, M., Marcu, M., Vlad, A., Caraiman, D., & Racles, C. (1999). Synthesis of functional telechelic polydimethylsiloxanes by ion-exchangers catalysis. *European Polymer Journal* 35(9), 1629–1635.
2. Cazacu, M., Marcu, M., Vlad, A., Rusu, G. I., & Avadanei, M. (2004). Chelate polymers. VI. New copolymers of the some siloxane containing bis(2,4-dihydroxybenzaldehyd-imine)Me₂⁺ with bis(p-carboxyphenyl)diphenylsilane. *Journal of Organometallic Chemistry*, 689(19), 3005–3011.
3. Cazacu, M., Vlad, A., Marcu, M., Racles, C., Airinei, A., & Munteanu, G. (2006). New Organometallic Polymers by Polycondensation of Ferrocene and Siloxane Derivatives. *Macromolecules*, 39(11), 3786–3793
4. Soroceanu, A., Cazacu, M., Shova, S., Turta, C., Kožíšek, J., Gall, M., Breza, M., Rapta, P., Mac Leod, TCO., Pombeiro, AJL., Telser, J., Dobrov, AA., Arion, V. B. (2013). Copper(II) Complexes with Schiff Bases Containing a Disiloxane Unit: Synthesis, Structure, Bonding Features and Catalytic Activity for Aerobic Oxidation of Benzyl Alcohol. *European Journal of Inorganic Chemistry* 2013(9), 1458–1474.
5. Cazacu, M., Shova, S., Soroceanu, A., Machata, P., Bucinsky, L., Breza, M., Rapta, P., Telser, J., Krystek, J., Arion, V. B. (2015). Charge and Spin States in Schiff Base Metal Complexes with a Disiloxane Unit Exhibiting a Strong Noninnocent Ligand Character: Synthesis, Structure, Spectroelectrochemistry, and Theoretical Calculations. *Inorganic Chemistry* 54(12), 5691–5706.
6. Bele, A., Cazacu, M., Stiubianu, G., Vlad, S., & Ignat, M. (2015). Polydimethylsiloxane–barium titanate composites: Preparation and evaluation of the morphology, moisture, thermal, mechanical and dielectric behavior. *Composites Part B: Engineering*, 68, 237–245.
7. Tugui, C., Vlad, S., Iacob, M., Varganici, C. D., Pricop, L., & Cazacu, M. (2016). Interpenetrating poly(urethane-urea)–polydimethylsiloxane networks designed as active elements in electromechanical transducers. *Polymer Chemistry*, 7(15), 2709–2719.
8. Shova, S., Vlad, A., Krzystek, J. Cazacu, M., Ozarowski, A., Malcek, M., Bucinsky, L., Rapta, P., Cano, J., Telser, J., Arion, V.B. (2019). Dinuclear manganese(III) complexes with bioinspired coordination and variable linkers showing weak exchange effects: a synthetic, structural, spectroscopic and computation study. *Dalton Transactions*, 48(18), 5909-5922.
9. Tugui, C., Tiron, V., Dascalu, M., Sacarescu, L., & Cazacu, M. (2019). From ultra-high molecular weight polydimethylsiloxane to super-soft elastomer. *Eur. Polym. J.*, 109243.
10. Tugui, C., Serbulea, M.-S., & Cazacu, M. (2019). Preparation and characterisation of stacked planar actuators. *Chemical Engineering Journal* 364, 217-225.
11. Shova, S., Tiron, V., Vlad, A., Novitchi, G., Dumitrescu, D. G., Damoc, M., Zaltariov, M. F., Cazacu, M. (2020). Permethylated dinuclear Mn(III) coordination nanostructure with stripe-ordered magnetic domains. *Appl. Organomet. Chem.* 2020:e5957, doi:10.1002/aoc.5957.
12. Zaltariov, M.-F., & Cazacu, M. (2020). Coordination compounds with siloxane/silane-containing ligands capable of self-assembly at nano/micro scale in solid state and in solution. *Advances in Inorganic Chemistry* 76, 155-196
13. Stoica, A.C., Dămoc, M., Zaltariov, M.F., Racleş, C., Cazacu, M. (2021). Two-dimensional coordination polymers containing permethylated motifs - promising candidates for 2D emerging materials. Structural, behavioral and functional particularities. *Reactive and Functional Polymers* 168, 105039.
14. Cazacu, M., Racles, C., Zaltariov, M.-F., Dascalu, M., Bele, A., Tugui, C., Bargan, A., Stiubianu, G. (2021). From Amorphous Silicones to Si-Containing Highly Ordered Polymers: Some Romanian Contributions in the Field. *Polymers*, 13(10), 1605.
15. M. Cazacu, M. Dascalu, G.T. Stiubianu, A. Bele, C. Tugui, C. Racles (2022), From passive to emerging smart silicones, *Review in Chemical Engineering* 39 (6), 941-1003.
16. Damoc, M., Tigoianu, R.I., Stoica, A.-C., Măcsim, A.-M., Dascalu, M., Shova, S., Cazacu, M. (2023). Micellization Turned on Dual Fluorescence and Room Temperature Phosphorescence by Pseudo-ESIPT in Thiadiazole Derivatives, *J. Phys. Chem. C* 127 (1), 99-109.
17. Damoc, M., Tiron, V., Tugui, C., Varganici, C.D., Stoica, A.-C., Novitchi, G., Dascalu, M., Cazacu, M. (2023). Ferronematic Co(II) complex: an active filler for magnetically actuated soft materials, *Small* 20(15) e2307006.
18. Stoica, A.C., Damoc, M., Bele, A., Dascalu, A., Măcsim, A.M., Shova, S., Dascalu, M., Cazacu, M. (2024). A 3D coordination polymer of Cd(II) with conformationally flexible mixed ligands as an active filler for silicone elastomers, *Reactive and Functional Polymers* 197, 105876

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