

Name:	Prof. Dr. Vladimir A. Azov	
Born:	March 23, 1974	
Marital status:	Married, one child	
Current Affiliation:	Professor of Organic Chemistry Department of Chemistry, University of the Free State (UFS) PO Box 339, Bloemfontein 9300, South Africa	
Telephone:	+27-51-401 2079	
E-mail:	AzovV@ufs.ac.za, vlazov@gmail.com	
Scientific Vita:	2018-	Professor of Organic Chemistry, UFS, South Africa
	2015-2017	Privatdozent, Universität Bremen, Germany
	2014-2015	Interim Professor of Organic Chemistry, Universität Bremen, Germany
	2011-2014	Privatdozent, Universität Bremen, Germany
	2005-2011	Habilitand, Universität Bremen, Germany
	2005	Postdoctoral Scholar (Prof. T. Carell), Ludwig-Maximilians-Universität München, Germany
	2002-2005	Postdoctoral Scholar (Prof. F. Diederich) ETH Zürich, Switzerland
	1997-2001	Graduate Research & Teaching Assistant (Prof. F. M. Menger), Emory University, Atlanta, Georgia USA
	1993-1997	Research Assistant (Prof. N. K. Kochetkov), Institute of Organic Chemistry, Russian Academy of Sciences, Moscow, Russia
Studies and Degrees:	2005-2011	Habilitation (<i>venia legendi</i>) in Organic Chemistry Universität Bremen, Bremen, Germany
	1997-2001	PhD in Organic Chemistry Emory University, Atlanta, GA, USA
	1991-1996	Master of Science in Chemistry Higher Chemical College, Russian Academy of Sciences, Moscow, Russia
Awards:	2000	Osborn R. Quayle Award, Emory University
	1997-2001	Graduate Scholarship/Fellowship, Emory University
	1995	International Soros Science Education Program Scholarship
	1991	Bronze medal, XXIII International Chemistry Olympiad
Publications and Professional Activities:	<ul style="list-style-type: none"> • 60 publications in refereed journals and 4 contributions to books • h-index 24, ca. 1800 citations (Scopus) • Editorial board member of <i>Scientific Reports</i>, reviewer for several chemistry journals • Member of the German Chemical Society and South African Chemical Institute • Consulting for the R&D analytical division of Thermo Fisher Scientific 2016-2018 	
Research Interests:	<ul style="list-style-type: none"> • Design and synthesis of molecular receptors, devices and soft materials • Molecular recognition and self-organization • Synthesis of unnatural amino acids • Mass-spectrometry in the study of weak interactions and reactivity in the gas phase • Quantifying intermolecular interactions in molecular crystals • Concept transfer between the supramolecular chemistry and nanoscience 	

Publications

1. A. R. Mashweu, V. A. Azov, "Nanotechnology in drug delivery: anatomy and molecular insight into the self-assembly of peptide-based hydrogels", *Molecules* **2024**, *29*, 5654.
2. V. A. Azov, J. Warneke, Z. Warneke, M. Zeller, L. Twigge, "Calix[4]arene with a stiff upper rim bridge: spontaneous macrocyclization, structure, and dynamic behaviour", *New J. Chem.* **2024**, *48*, 12246–12253.
3. F. J. De Beer, F. J. F. Jacobs, A. Ntsila, D. V. Kama, V. A. Azov, "Analysis of short contacts in crystals of halogenated amino acids: atom–atom interactions vs. energy frameworks", *CrystEngComm* **2024**, *26*, 604–619.
4. F. Yang, R. D. Urban, J. Lorenz, J. Griebel, N. Koohbor, M. Rohdenburg, H. Knorke, D. Fuhrmann, A. Charvat, B. Abel, V. A. Azov, J. Warneke, "Control of Intermediates and Products by Combining Droplet Reactions and Ion Soft-Landing" *Angew. Chemie Int. Ed.* **2024**, *63*, e202314784.
5. V. A. Azov, F. J. De Beer, "Redox-Responsive Macrocyclic Hosts Based on Calix[4]arene and Calix[4]resorcinarene Scaffolds" *Isr. J. Chem.* **2024**, *64*, e202300075.
6. F. De Beer, V. Azov, D. Kama, F. Jacobs, "Die sintese en kristalstrukture van verskeie beskermde jodo-alanienaminosure / The synthesis and crystal structures of various protected iodo-alanine amino acids" *Suid-Afrikaans Tydskr. vir Natuurwetenskap en Tegnol. / South African J. Sci. Technol.* **2022**, *41*, 117–118.
7. X. Ma, M. Rohdenburg, H. Knorke, S. Kawa, J. K.-Y. Liu, E. Aprà, K. R. Asmis, V. A. Azov, J. Laskin, C. Jenne, H. I. Kenttämäa, J. Warneke, "Binding of saturated and unsaturated C₆-hydrocarbons to the electrophilic anion [B₁₂Br₁₁]⁻: a systematic mechanistic study" *Phys. Chem. Chem. Phys.* **2022**, *24*, 21759-21772.
8. V. A. Azov, L. Mueller, A. A. Makarov, "Laser ionization mass spectrometry at 55: Quo Vadis?" *Mass Spectrom. Rev.* **2022**, *41*, 100-151.
9. D. Schlüter, K. R. Korsching, V. A. Azov, "Lower-Rim-Modified Calix[4]arene-Pyrrolotetraphiafulvalene Molecular Tweezers" *Eur. J. Org. Chem.* **2021**, 4469–4476.
10. M. Rohdenburg, V. A. Azov, J. Warneke, "New Perspectives in the Noble Gas Chemistry Opened by Electrophilic Anions" *Front Chem.* **2020**, *8*, 580295.
11. J. Warneke, M. Mayer, M. Rohdenburg, X. Ma, J. K. Y. Liu, M. Grellmann, S. Debnath, V. A. Azov, E. Apra, R. P. Young, C. Jenne, G. E. Johnson, H. I. Kenttämäa, K. R. Asmis, J. Laskin, "Direct functionalization of C–H bonds by electrophilic anions" *Proc. Natl. Acad. Sci. U.S.A.* **2020**, *117*, 23374-23379.
12. R.-Z. Li, Q. Yuan, Z. Yang, E. Aprà, Z. Li, V. A. Azov, K. Kirakci, J. Warneke, X.-B. Wang, "Photoelectron spectroscopy of [Mo₆X₁₄]²⁻ dianions (X = Cl–I)" *J. Chem. Phys.* **2019**, *151*, 194310.
13. A. Šulce, N. Mitschke, V. A. Azov, S. Kunz, "Molecular Insights into the Ligand-Reactant Interactions of Pt Nanoparticles Functionalized with α-Amino Acids as Asymmetric Catalysts for β-Keto Esters" *ChemCatChem* **2019**, *11*, 2732-2742.
14. M. Mayer, V. van Lessen, M. Rohdenburg, G.-L. Hou, Z. Yang, R. M. Exner, E. Aprà, V. A. Azov, S. Grabowsky, S. S. Xantheas, K. R. Asmis, X.-B. Wang, C. Jenne, J. Warneke, "Rational design of an argon-binding superelectrophilic anion" *Proc. Natl. Acad. Sci. U.S.A.* **2019**, *116*, 8167-8172.
15. C. M. L. Vande Velde, M. Zeller, V. A. Azov, "Comparison of computationally cheap methods for providing insight into the crystal packing of highly bromomethylated azobenzenes" *Acta Cryst. C*, **2018**, *74*, 1692–1702.
16. A. Šulce, J. Backenköhler, I. Schrader, M. Delle Piane, C. Müller, A. Wark, L. Colombi Ciacchi, V. Azov, S. Kunz, "Ligand-Functionalized Pt Nanoparticles as Asymmetric Heterogeneous Catalysts: Molecular Reaction Control by Ligand-Reactant Interactions" *Catal. Sci. Technol.* **2018**, *8*, 6062–6075.
17. V. A. Azov, K. S. Egorova, M. M. Seitkalieva, A. S. Kashin, V. P. Ananikov, "Solvent-in-salt" systems for design of new materials in chemistry, biology and energy research" *Chem. Soc. Rev.* **2018**, *47*, 1250-1284 (review paper).

18. M. Rohdenburg, M. Mayer, M. Grellmann, C. Jenne, T. Borrmann, F. Kleemiss, V. A. Azov, K. R. Asmis, S. Grabowsky, J. Warneke, "Superelectrophilic Behavior of an Anion Demonstrated by Spontaneous Binding of [B₁₂Cl₁₁]⁻ with Noble Gases" *Angew. Chem, Int. Ed.* **2017**, *56*, 7980–7985, and cover page 7681.
19. I. Schrader, S. Neumann, A. Šulce, F. Schmidt, V. A. Azov, S. Kunz, "Asymmetric Heterogeneous Catalysis – Transfer of Molecular Principles to Nanoparticles by Ligand Functionalization" *ACS Catal.* **2017**, *7*, 3979–3987.
20. V. A. Azov, "Functional molecular architectures based on tetrathiafulvalene building blocks" *Phosphorus, Sulfur, Silicon Relat. Elem.* **2017**, *192*, 175–179.
21. V. A. Azov "Recent advances in molecular recognition with tetrathiafulvalene-based receptors" *Tetrahedron Lett.* **2016**, *57*, 5416–5425 (invited review).
22. J. Warneke, C. Jenne, J. Bernarding, V. A. Azov, M. Plaumann, "Evidence for an intrinsic binding force between dodecaborate dianions and receptors with hydrophobic binding pockets" *Chem. Commun.* **2016**, *52*, 6300–6303.
23. K. R. Korsching, H. Schäfer, J. Schönborn, A. Nimthong-Roldán, M. Zeller, V. A. Azov, "Substituent effects on monopyrrolo-tetrathiafulvalenes in calixaren-based molecular receptors" *RSC Advances* **2015**, *5*, 82699–82703.
24. C. M. L. Vande Velde, M. Zeller, V. A. Azov, "Thermodynamic parameters of the pedal motion in the crystal structures of two bromomethylated azobenzenes" *CrystEngComm.* **2015**, *17*, 5751–5756.
25. V. A. Azov, D. Janott, D. Schlüter, M. Zeller, "Tuning of tetrathiafulvalene properties: versatile synthesis of *N*-arylated monopyrrolo-tetrathiafulvalenes via Ullmann-type coupling reactions" *Beilstein J. Org. Chem.* **2015**, *11*, 860–868.
26. J. Warneke, M. Plaumann, Z. Wang, E. Böhler, D. Kemken, S. Kelm, D. Leibfritz, V. A. Azov, "New insights into the old reaction between pyridine and acryloyl chloride" *Tetrahedron Lett.* **2015**, *56*, 1124–1127.
27. U. Kauscher, K. Bartels, I. Schrader, V. A. Azov, B. J. Ravoo, "Metastable oxidation states of tetrathiafulvalenes on the surface of liposomes" *J Mater Chem. B* **2015**, *3*, 475–480.
28. V. A. Azov, J. Cordes, D. Schlüter, T. Dülcks, M. Böckmann, N. L. Doltsinis, "Light-controlled macrocyclization of tetrathiafulvalene with azobenzene: designing an opto-electronic molecular switch" *J. Org. Chem.* **2014**, *79*, 11714–11721.
29. M. Zeller, J. Warneke, V. Azov, "Relative substituent orientation in the structure of *cis*-3-chloro-1,3-dimethyl-*N*-(4-nitrophenyl)-2-oxocyclopentane-1-carboxamide" *Acta Cryst. E* **2014**, *70*, 121–123.
30. J. Warneke, Z. Wang, M. Zeller, D. Leibfritz, M. Plaumann, V. A. Azov, "Methacryloyl chloride dimers: from structure elucidation to a manifold of chemical transformations" *Tetrahedron* **2014**, *70*, 6515–6521.
31. A. Wichmann, G. Schnurpfeil, J. Backenköhler, L. Kolke, V. A. Azov, D. Wöhrle, M. Bäumer, A. Wittstock, "A versatile synthetic strategy for nanoporous gold-organic hybrid materials for electrochemistry and photocatalysis" *Tetrahedron* **2014**, *70*, 6127–6133.
32. M. H. Düker, F. Kutter, T. Dülcks, V. A. Azov, "Calix[4]arenes with 1,2- and 1,3-upper rim tetrathiafulvalene bridges" *Supramol. Chem.* **2014**, *26*, 552–560.
33. M.-L. L. Watat, T. Dülcks, D. Kemken, V. A. Azov, "Tripodal Pyrrolotetrathiafulvalene Receptors for Recognition of Electron-Deficient Molecular Guests" *Tetrahedron Lett.* **2014**, *55*, 741–744.
34. M. Zeller, V. A. Azov, "2-(1,3-Dithiol-2-ylidene)-1,3-dithiole-4-carbaldehyde" *Acta Cryst. E* **2013**, *69*, o1157.
35. M. H. Düker, H. Schäfer, M. Zeller, V. A. Azov, "Rationally Designed Calix[4]arene-Pyrrolotetrathiafulvalene Receptors for Electron-Deficient Neutral Guests" *J. Org. Chem.* **2013**, *78*, 4905–4912.

36. M. L. Vande Velde, M. Zeller, V. A. Azov, "Secondary interactions in the crystal structures of three 1,2,4,5-tetrakis(bromomethyl)-3,6-bis(2-alkoxy)benzenes" *J. Mol. Struct.* **2012**, 1016, 109–117.
37. V. A. Azov, M. Zeller, M.-L. L. Watat, Y. Xin, "Thione vs Ketone: The influence of the chalcogenide on weak intermolecular interactions in crystal packing of 4,5-bis(bromomethyl)-1,3-dithiole-2-thione and 4,5-bis(bromomethyl)-1,3-dithiol-2-one" *J. Mol. Struct.* **2011**, 1004, 296–302.
38. V. A. Azov, F. Diederich, "Switching Processes in Cavitands, Containers, and Capsules" *Molecular Switches, 2nd Edition*; B. L. Feringa, W. R. Browne, eds.; Wiley-VCH, Weinheim, **2011**.
39. A. Denhof, J. Cordes, V. A. Azov, "Synthesis of Novel Highly Soluble *N*-(3,5-Di-*tert*-butylbenzyl)-monopyrrolotetrathiafulvalene Derivatives" *Phosphorus, Sulfur, Silicon Relat. Elem.* **2011**, 186, 1278–1283.
40. M. H. Düker, R. Gómez, C. M. L. Vande Velde, V. A. Azov, "Upper rim tetrathiafulvalene-bridged calix[4]arenes" *Tetrahedron Lett.* **2011**, 52, 2881–2884.
41. F. Kutter, M. H. Düker, M. Zeller, V. A. Azov, "5,11,17,23-Tetrakis(chloromethyl)-25,26,27,28-tetrapropoxycalix[4]arene" *Acta Cryst. E* **2011**, 67, o728–o729.
42. G. Gamez, L. Zhu, A. Disko, H. Chen, V. Azov, K. Chingjin, G. Krämer, R. Zenobi, "Real-time, *in vivo* monitoring and pharmacokinetics of valproic acid via a novel biomarker in exhaled breath" *Chem. Commun.* **2011**, 47, 4884–4886.
43. M. Skibiński, V. A. Azov, P. G. Jones, "2,3,6,7-Tetrakis(bromomethyl)naphthalene" *Acta Cryst. E* **2010**, 66, o1846–o1847.
44. M. Skibiński, R. Gómez, E. Lork, V. A. Azov, "Redox responsive molecular tweezers with tetrathiafulvalene units: synthesis, electrochemistry, and binding properties" *Tetrahedron* **2009**, 65, 10348–10354.
45. V. A. Azov, "Resolution of Chiral Amines" *Science of Synthesis*, vol. 40, 419–434; Georg Thieme Verlag, Stuttgart, New York, **2009**.
46. F.-P. Montforts, M. Osmer, V. A. Azov, "Synthesis of amines by substitution of Carbon Functionalities via Solvolysis" *Science of Synthesis*, vol. 40, 203–232; Georg Thieme Verlag, Stuttgart, New York, **2009**.
47. V. A. Azov, R. Gómez, J. Stelten, "Synthesis of electrochemically responsive TTF-based molecular tweezers: evidence of tight intramolecular TTF pairing in solution" *Tetrahedron* **2008**, 64, 1909–1917.
48. M. Hammond, A. Manetto, J. Gierlich, V. A. Azov, P. M. E. Gramlich, G. A. Burley, M. Maul, T. Carell, "DNA Photography: An Ultrasensitive DNA-Detection Method Based on Photographic Techniques" *Angew. Chem. Int. Ed.* **2007**, 46, 4184–4187.
49. V. A. Azov, A. Schlegel, F. Diederich, "Functionalized Resorcine[4]arene Cavitands: Versatile Platforms for the Modular Construction of Extended Molecular Switches" *Bull. Chem. Soc. Jpn.* **2006**, 79, 1926–1940.
50. P. Roncucci, L. Pirondini, G. Paderni, C. Massera, E. Dalcanale, V. A. Azov, F. Diederich, "Conformational Behavior of Pyrazine-Bridged and Mixed-Bridged Cavitands: A General Model for Solvent Effects on Thermal Vase-Kite Switching" *Chem. Eur. J.* **2006**, 12, 4775–4784.
51. V. A. Azov, A. Beeby, M. Cacciarini, A. G. Cheetham, F. Diederich, M. Frei, J. K. Gimzewski, V. Gramlich, B. Hecht, B. Jaun, T. Lатычевская, A. Lieb, Y. Lill, F. Marotti, A. Schlegel, R. R. Schlittler, P. J. Skinner, P. Seiler, Y. Yamakoshi, "Resorcine[4]arene Cavitand-Based Molecular Switches" *Adv. Funct. Mat.* **2006**, 16, 147–156.
52. M. Cacciarini, V. A. Azov, P. Seiler, H. Künzer, F. Diederich, "Selective steroid recognition by a partially bridged resorcine[4]arene cavitand" *Chem. Commun.* **2005**, 5269–5271.
53. V. A. Azov, A. Schlegel, F. Diederich, "Geometrically Precisely Defined Multinanometer Extension/Contraction Motions in a Resorcine[4]arene Cavitand-Based Molecular Switch Observed by FRET" *Angew. Chem. Int. Ed.* **2005**, 44, 4635–4638.

54. M. Dashtiev, V. A. Azov, V. Frankevich, L. Scharfenberg, R. Zenobi, "Clear Evidence of Fluorescence Resonance Energy Transfer in Gas-Phase Ions" *J. Am. Soc. Mass Spectrom.* **2005**, *16*, 1481–1487.
55. C. Thilgen, V. A. Azov, "Cyclophanes: Definition and Scope" *Encyclopedia of Supramolecular Chemistry*, 414–423; J. Steed and J. Atwood, eds.; Marcel Dekker, Inc., NY, **2004**.
56. V. A. Azov, B. Jaun, F. Diederich, "NMR Investigations into the Vase-kite Conformational Switching of Resorcin[4]arene Cavitands" *Helv. Chim. Acta* **2004**, *87*, 449–462.
57. V. A. Azov, P. J. Skinner, Y. Yamakoshi, P. Seiler, V. Gramlich, F. Diederich, "Functionalized and Partially or Differentially Bridged Resorcin[4]arene Cavitands: Synthesis and Solid-state Structures" *Helv. Chim. Acta* **2003**, *86*, 3648–3670.
58. V. A. Azov, F. Diederich, Y. Lill, B. Hecht, "Synthesis and Conformational Switching of Partially and Differentially Bridged Resorcin[4]arenes Bearing Fluorescent Dye Labels" *Helv. Chim. Acta* **2003**, *86*, 2149–2155.
59. M. Menger, V. A. Azov, "Synthesis and Properties Water-Soluble Asterisk Molecules" *J. Am. Chem. Soc.* **2002**, *124*, 11159–11166.
60. M. Menger, J. Bian, V. A. Azov, "A 1,3,5-Triaxial-Triamino-Cyclohexane: The Triamine Corresponding to Kemp's Triacid" *Angew. Chem. Int. Ed.* **2002**, *41*, 2581–2584.
61. A. Yaroslavov, O. Yu. Udalykh, N. S. Melik-Nubarov, V. A. Kabanov, Y. A. Ermakov, V. A. Azov, F. M. Menger, "Conventional and Gemini Surfactants Embedded within Bilayer Membranes: Contrasting Behavior" *Chem. Eur. J.* **2001**, *7*, 4835–4843.
62. M. Menger, V. A. Azov, "Cytomimetic Modeling in Which One Phospholipid Liposome Chemically Attacks Another" *J. Am. Chem. Soc.* **2000**, *122*, 6492–6493.
63. F. M. Menger, J. S. Keiper, V. Azov, "Gemini Surfactants with Acetylenic Spacers" *Langmuir* **2000**, *16*, 2062–2067.
64. V. S. Borodkin, N. A. Shpiro, V. A. Azov, N. K. Kochetkov, "Substrate Dependent Intramolecular Pauson-Khand Reaction of Carbohydrate exo-Methylene Derivatives. Unexpected formation of fused "[4.1.0] bicycloheptene – pyranose" tricyclic product" *Tetrahedron Lett.* **1996**, *37*, 1489–1492.

Online Profiles

ORCID: [0000-0002-2340-2198](https://orcid.org/0000-0002-2340-2198)

Web of Science ResearcherID: [A-6562-2011](https://orcid.org/A-6562-2011)

Google Scholar: <https://scholar.google.de/citations?user=-1OVqakAAAAJ&hl=en>

ResearchGate: <https://www.researchgate.net/profile/Vladimir-Azov>