

# Roman Boulatov

## List of Publications by Year in descending order

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78  
papers

4,205  
citations

117453

34  
h-index

114278

63  
g-index

92  
all docs

92  
docs citations

92  
times ranked

3379  
citing authors

#	ARTICLE	IF	CITATIONS
1	Functional Analogues of Cytochrome Oxidase, Myoglobin, and Hemoglobin. <i>Chemical Reviews</i> , 2004, 104, 561-588.	23.0	635
2	Chemical solutions for the closed-cycle storage of solar energy. <i>Energy and Environmental Science</i> , 2011, 4, 4449.	15.6	242
3	Mechanochromism and Mechanical Force-Triggered Cross-Linking from a Single Reactive Moiety Incorporated into Polymer Chains. <i>Angewandte Chemie - International Edition</i> , 2016, 55, 3040-3044.	7.2	202
4	The many flavours of mechanochemistry and its plausible conceptual underpinnings. <i>Nature Reviews Chemistry</i> , 2021, 5, 148-167.	13.8	176
5	A molecular force probe. <i>Nature Nanotechnology</i> , 2009, 4, 302-306.	15.6	168
6	Functional Analogues of the Dioxygen Reduction Site in Cytochrome Oxidase: Mechanistic Aspects and Possible Effects of CuB. <i>Journal of the American Chemical Society</i> , 2002, 124, 11923-11935.	6.6	152
7	Chemomechanics: chemical kinetics for multiscale phenomena. <i>Chemical Society Reviews</i> , 2011, 40, 2359.	18.7	121
8	The physical chemistry of mechanoresponsive polymers. <i>Journal of Materials Chemistry</i> , 2011, 21, 8237.	6.7	109
9	Mechanical gating of a mechanochemical reaction cascade. <i>Nature Communications</i> , 2016, 7, 13433.	5.8	107
10	Experimental Polymer Mechanochemistry and its Interpretational Frameworks. <i>ChemPhysChem</i> , 2017, 18, 1422-1450.	1.0	106
11	Multi-modal mechanophores based on cinnamate dimers. <i>Nature Communications</i> , 2017, 8, 1147.	5.8	106
12	Applications of Photoswitches in the Storage of Solar Energy. <i>ChemPhotoChem</i> , 2019, 3, 268-283.	1.5	94
13	Experimentally realized mechanochemistry distinct from force-accelerated scission of loaded bonds. <i>Science</i> , 2017, 357, 299-303.	6.0	93
14	Force-Reactivity Property of a Single Monomer Is Sufficient To Predict the Micromechanical Behavior of Its Polymer. <i>Journal of the American Chemical Society</i> , 2012, 134, 7620-7623.	6.6	89
15	Method to Derive Restoring Forces of Strained Molecules from Kinetic Measurements. <i>Journal of the American Chemical Society</i> , 2009, 131, 1407-1409.	6.6	86
16	Photomechanical Actuation of Ligand Geometry in Enantioselective Catalysis. <i>Angewandte Chemie - International Edition</i> , 2014, 53, 14508-14511.	7.2	84
17	Heterodinuclear Transition-Metal Complexes with Multiple Metal-Metal Bonds. <i>Angewandte Chemie - International Edition</i> , 2002, 41, 3948-3961.	7.2	81
18	Kinetics of Thiol/Disulfide Exchange Correlate Weakly with the Restoring Force in the Disulfide Moiety. <i>Angewandte Chemie - International Edition</i> , 2009, 48, 7040-7043.	7.2	80

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19	Biomimetic Studies of Terminal Oxidases: Trisimidazole Picket Metalloporphyrins. <i>Inorganic Chemistry</i> , 2002, 41, 2282-2291.	1.9	64
20	Mechanochromism and optical remodeling of multi-network elastomers containing anthracene dimers. <i>Chemical Science</i> , 2019, 10, 8367-8373.	3.7	62
21	Organic Composite Crystal with Persistent Room-Temperature Luminescence Above 650Ånm by Combining Triplet-Triplet Energy Transfer with Thermally Activated Delayed Fluorescence. <i>CCS Chemistry</i> , 2020, 2, 1391-1398.	4.6	60
22	Model studies of force-dependent kinetics of multi-barrier reactions. <i>Nature Communications</i> , 2013, 4, 2538.	5.8	55
23	Quantum-Chemical Validation of the Local Assumption of Chemomechanics for a Unimolecular Reaction. <i>ChemPhysChem</i> , 2012, 13, 2277-2281.	1.0	49
24	Model Studies of the Kinetics of Ester Hydrolysis under Stretching Force. <i>Angewandte Chemie - International Edition</i> , 2013, 52, 6992-6995.	7.2	49
25	A light-driven molecular machine based on stiff stilbene. <i>Chemical Communications</i> , 2018, 54, 7991-7994.	2.2	47
26	A Polymer with Mechanochemically Active Hidden Length. <i>Journal of the American Chemical Society</i> , 2020, 142, 18687-18697.	6.6	46
27	A Mechanochemical Reaction Cascade for Controlling Load-Strengthening of a Mechanochromic Polymer. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 21980-21985.	7.2	43
28	Chemomechanics with molecular force probes. <i>Pure and Applied Chemistry</i> , 2010, 82, 931-951.	0.9	41
29	Synthesis and Reactivity of Porphyrinorhodium(II)-Triethylphosphine Adducts: The Role of PEt <sub>3</sub> in Stabilizing a Formal Rh(II) State. <i>Journal of the American Chemical Society</i> , 2000, 122, 11812-11821.	6.6	40
30	Functional and Structural Analogs of the Dioxygen Reduction Site in Terminal Oxidases. , 2003, , 1-49.		40
31	Strain-Dependent Acceleration of a Paradigmatic S <sub>N</sub> 2 Reaction Accurately Predicted by the Force Formalism. <i>Journal of Physical Chemistry Letters</i> , 2010, 1, 2820-2825.	2.1	40
32	Electrocatalytic O <sub>2</sub> Reduction by Synthetic Analogues of the Heme/Cu Site of Cytochrome Oxidase Incorporated in a Lipid Film. <i>Angewandte Chemie - International Edition</i> , 2002, 41, 3487-3489.	7.2	39
33	The Entropic and Enthalpic Contributions to Force-Dependent Dissociation Kinetics of the Pyrophosphate Bond. <i>Journal of the American Chemical Society</i> , 2011, 133, 20044-20047.	6.6	39
34	Comparison of the predictive performance of the Bell-Evans, Taylor-expansion and statistical-mechanics models of mechanochemistry. <i>Chemical Communications</i> , 2013, 49, 4187-4189.	2.2	39
35	Two Novel Lithium-15-Crown-5 Complexes: An Extended LiCl Chain Stabilized by Crown Ether and a Dimeric Complex Stabilized by Hydrogen Bonding with Water. <i>Inorganic Chemistry</i> , 1999, 38, 4554-4558.	1.9	37
36	Nonideal Electrochemical Behavior of Biomimetic Iron Porphyrins: Interfacial Potential Distribution across Multilayer Films. <i>Analytical Chemistry</i> , 2003, 75, 494-502.	3.2	36

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37	Mechanochromism and Mechanical Force-Triggered Cross-Linking from a Single Reactive Moiety Incorporated into Polymer Chains. <i>Angewandte Chemie</i> , 2016, 128, 3092-3096.	1.6	35
38	Unexpected Reactivity of Rh(TPP)I(CO) toward an Alkoxide in CH <sub>2</sub> Cl <sub>2</sub> : Synthesis and Crystal Structure of Rh(TPP)(CH <sub>2</sub> Cl). <i>Inorganic Chemistry</i> , 2001, 40, 560-563.	1.9	34
39	Ratiometric O <sub>2</sub> sensing based on selective self-sensitized photooxidation of donor-acceptor fluorophores. <i>Chemical Communications</i> , 2019, 55, 7017-7020.	2.2	34
40	Reaction dynamics in the formidable gap. <i>Pure and Applied Chemistry</i> , 2010, 83, 25-41.	0.9	33
41	Demonstrated leverage. <i>Nature Chemistry</i> , 2013, 5, 84-86.	6.6	31
42	Modeling the Anodic Half-Cell of a Low-Temperature Coal Fuel Cell. <i>Angewandte Chemie - International Edition</i> , 2005, 44, 5682-5686.	7.2	29
43	Electrochemical Metalloporphyrin-Catalyzed Reduction of Chlorite. <i>Journal of the American Chemical Society</i> , 2002, 124, 10670-10671.	6.6	27
44	Density Functional Theory Calculations of the Lowest Energy Quintet and Triplet States of Model Hemes: Role of Functional, Basis Set, and Zero-Point Energy Corrections. <i>Journal of Physical Chemistry A</i> , 2008, 112, 3700-3711.	1.1	25
45	Aromatic and Benzylic C-H Bond Activation in the System Bis(dicarbonylrhodium(I))-porphyrinate-Hydrocarbon Solvent. <i>Inorganic Chemistry</i> , 2001, 40, 2461-2464.	1.9	23
46	Understanding the reaction that powers this world: Biomimetic studies of respiratory O <sub>2</sub> reduction by cytochrome oxidase. <i>Pure and Applied Chemistry</i> , 2004, 76, 303-319.	0.9	23
47	Effect of Electron Availability on Selectivity of O <sub>2</sub> Reduction by Synthetic Monometallic Fe Porphyrins. <i>Inorganic Chemistry</i> , 2003, 42, 4807-4809.	1.9	19
48	Mechanochemical Regulation of Oxidative Addition to a Palladium(0) Bisphosphine Complex. <i>Journal of the American Chemical Society</i> , 2020, 142, 17714-17720.	6.6	19
49	Reversible Insertion of Ir into Arene Ring C-C Bonds with Improved Regioselectivity at a Higher Reaction Temperature. <i>Journal of the American Chemical Society</i> , 2019, 141, 6048-6053.	6.6	18
50	Distal Cu Ion Protects Synthetic Heme/Cu Analogues of Cytochrome Oxidase against Inhibition by CO and Cyanide. <i>Angewandte Chemie - International Edition</i> , 2002, 41, 4139-4142.	7.2	16
51	The Challenges and Opportunities of Contemporary Polymer Mechanochemistry. <i>ChemPhysChem</i> , 2017, 18, 1419-1421.	1.0	16
52	Billion-Year-Old Oxygen Cathode that Actually Works: Respiratory Oxygen Reduction and Its Biomimetic Analogs. , 2006, , 1-40.		14
53	The First Quadruple Bond Between Elements of Different Groups. <i>Angewandte Chemie - International Edition</i> , 2001, 40, 1271-1274.	7.2	11
54	Electrocatalytic Reduction of ROOH by Iron Porphyrins. <i>Journal of the American Chemical Society</i> , 2004, 126, 11166-11167.	6.6	11

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55	Force-modulated reductive elimination from platinum( $\text{d}^8$ ) diaryl complexes. <i>Chemical Science</i> , 2021, 12, 11130-11137.	3.7	11
56	Macrocyclic Disulfides for Studies of Sensitized Photolysis of the Si-S Bond. <i>Chemistry - A European Journal</i> , 2009, 15, 5212-5214.	1.7	10
57	The liberating force of ultrasound. <i>Nature Chemistry</i> , 2021, 13, 112-114.	6.6	10
58	Metalloporphyrin Catalysts of Oxygen Reduction. , 0, , 637-693.		9
59	Comment on T. Stauch, A. Dreuw, "Stiff-stilbene photoswitch ruptures bonds not by pulling but by local heating", <i>Phys. Chem. Chem. Phys.</i> , 2016, 18, 15848. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 26990-26993.	1.3	9
60	Polymer Mechanochemistry: A New Frontier for Physical Organic Chemistry. <i>Advances in Physical Organic Chemistry</i> , 2018, 52, 87-143.	0.5	9
61	A Mechanochemical Reaction Cascade for Controlling Load-Strengthening of a Mechanochromic Polymer. <i>Angewandte Chemie</i> , 2020, 132, 22164-22169.	1.6	9
62	Selective cleavage of unactivated arene ring C-H bonds by iridium: key roles of benzylic C-H activation and metal-metal cooperativity. <i>Chemical Science</i> , 2021, 12, 3568-3579.	3.7	9
63	Fluorinated imidazoles as $^{19}\text{F}$ probes for biomimetic studies of heme a <sub>3</sub> heme site in cytochrome c oxidase. <i>Journal of Fluorine Chemistry</i> , 2000, 106, 189-197.	0.9	8
64	Functionalization of 1-methyl-1H-imidazole-5-carboxylic acid at the C-2 position: Efficient syntheses of 2-substituted t-butyl 1-methyl-1H-imidazole-5-carboxylates. <i>Journal of Chemical Research</i> , 2000, 2000, 230-231.	0.6	8
65	Simple dimer containing dissociatively stable mono-imidazole ligated ferrohemes. <i>Chemical Communications</i> , 2008, , 963.	2.2	8
66	Experimental Polymer Mechanochemistry and its Interpretational Frameworks. <i>ChemPhysChem</i> , 2017, 18, 1418-1418.	1.0	8
67	The molecular mechanism of constructive remodeling of a mechanically-loaded polymer. <i>Nature Communications</i> , 2022, 13, .	5.8	8
68	Simple Heme Dimers with Strongly Cooperative Ligand Binding. <i>Angewandte Chemie - International Edition</i> , 2007, 46, 8368-8370.	7.2	7
69	Selective <i>ortho</i> -C-H Activation in Arenes without Functional Groups. <i>Journal of the American Chemical Society</i> , 2022, 144, 11564-11568.	6.6	7
70	Fundamentals of Molecular Photoactuation. , 2012, , 83-106.		6
71	The contributions of model studies for fundamental understanding of polymer mechanochemistry. <i>Synlett</i> , 0, 0, .	1.0	5
72	Superimposed saddle and ruffled distortions of the porphyrin in iodo(pyridine-N)(5,10,15,20-tetraphenylporphyrinato- $\text{Ir}^{\text{IV}}$ )rhodium(III) toluene solvate. <i>Acta Crystallographica Section C: Crystal Structure Communications</i> , 2001, 57, 406-408.	0.4	4

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73	High-Vacuum Pyrolysis of Zr(2,3,7,8,12,13,17,18-Octaethylporphyrin)(PhCâ€©CPh) as a Route to Novel Zr Species: X-ray Structure of a Hetero-Triply Bridged Species, [(OEP)Zr( $\mu_4$ -Cl)] $_2$ ( $\mu_4$ -O). Inorganic Chemistry, 2002, 41, 416-420.	1.9	4
74	Selective, radical-free activation of benzylic Câ€“H bonds in methylarenes. Chemical Communications, 2021, 57, 7894-7897.	2.2	3
75	Titelbild: Mechanochromism and Mechanicalâ€“Forceâ€“Triggered Crossâ€“Linking from a Single Reactive Moiety Incorporated into Polymer Chains (Angew. Chem. 9/2016). Angewandte Chemie, 2016, 128, 2999-2999.	1.6	2
76	Functional Analogues of Cytochrome c Oxidase, Myoglobin, and Hemoglobin. ChemInform, 2004, 35, no.	0.1	1
77	Heterodinuclear Transition-Metal Complexes with Multiple Metalâ€“Metal Bonds.. ChemInform, 2003, 34, no.	0.1	0
78	Understanding the reaction that powers this world: Biomimetic studies of respiratory O2 reduction by cytochrome oxidase.. Pure and Applied Chemistry, 2004, 76, 1293-1293.	0.9	0