

# Radu Custelcean

## List of Publications by Year in descending order

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117  
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7,067  
citations

61984

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58581

82  
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138  
all docs

138  
docs citations

138  
times ranked

7348  
citing authors

#	ARTICLE	IF	CITATIONS
1	Dihydrogen Bonding: Structures, Energetics, and Dynamics. Chemical Reviews, 2001, 101, 1963-1980.	47.7	600
2	Anion Separation with Metal-Organic Frameworks. European Journal of Inorganic Chemistry, 2007, 2007, 1321-1340.	2.0	341
3	Direct evidence of a zig-zag spin-chain structure in the honeycomb lattice: A neutron and x-ray diffraction investigation of single-crystal Na <sub>2</sub> IrO <sub>2</sub> . Physical Review B, 2012, 85, .	3.2	318
4	Crystal engineering with urea and thiourea hydrogen-bonding groups. Chemical Communications, 2008, , 295-307.	4.1	294
5	Formation of Extended Tapes of Cyclic Water Hexamers in an Organic Molecular Crystal Host. Angewandte Chemie - International Edition, 2000, 39, 3094-3096.	13.8	264
6	Calix[4]pyrrole: An Old yet New Ion-Pair Receptor. Angewandte Chemie - International Edition, 2005, 44, 2537-2542.	13.8	255
7	Anion encapsulation and dynamics in self-assembled coordination cages. Chemical Society Reviews, 2014, 43, 1813-1824.	38.1	226
8	Urea-Functionalized M <sub>4</sub> L <sub>6</sub> Cage Receptors: Anion-Templated Self-Assembly and Selective Guest Exchange in Aqueous Solutions. Journal of the American Chemical Society, 2012, 134, 8525-8534.	13.7	217
9	A Metal-Organic Framework Functionalized with Free Carboxylic Acid Sites and Its Selective Binding of a Cl(H <sub>2</sub> O) <sub>4</sub> -Cluster. Journal of the American Chemical Society, 2005, 127, 16362-16363.	13.7	208
10	Computer-Aided Design of a Sulfate-Encapsulating Receptor. Angewandte Chemie - International Edition, 2009, 48, 4025-4029.	13.8	189
11	Sulfate Recognition by Persistent Crystalline Capsules with Rigidified Hydrogen-Bonding Cavities. Angewandte Chemie - International Edition, 2008, 47, 1866-1870.	13.8	179
12	How Amidoximate Binds the Uranyl Cation. Inorganic Chemistry, 2012, 51, 3855-3859.	4.0	175
13	A coordinatively saturated sulfate encapsulated in a metal-organic framework functionalized with urea hydrogen-bonding groups. Chemical Communications, 2005, , 5971.	4.1	168
14	Anions in crystal engineering. Chemical Society Reviews, 2010, 39, 3675.	38.1	160
15	Direct air capture of CO <sub>2</sub> via aqueous-phase absorption and crystalline-phase release using concentrated solar power. Nature Energy, 2018, 3, 553-559.	39.5	140
16	A Case for Molecular Recognition in Nuclear Separations: Sulfate Separation from Nuclear Wastes. Inorganic Chemistry, 2013, 52, 3473-3490.	4.0	130
17	Anion-Interactions in Crystal Structures: Commonplace or Extraordinary?. Crystal Growth and Design, 2009, 9, 2539-2545.	3.0	123
18	Selectivity Principles in Anion Separation by Crystallization of Hydrogen-Bonding Capsules. Journal of the American Chemical Society, 2010, 132, 7177-7185.	13.7	114

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19	Urea-functionalized crystalline capsules for recognition and separation of tetrahedral oxoanions. <i>Chemical Communications</i> , 2013, 49, 2173.	4.1	106
20	Sulfate separation by selective crystallization of a urea-functionalized metal-organic framework. <i>Chemical Communications</i> , 2007, , 1541-1543.	4.1	103
21	Anion Coordination in Metal-Organic Frameworks Functionalized with Urea Hydrogen-Bonding Groups. <i>Crystal Growth and Design</i> , 2006, 6, 555-563.	3.0	101
22	Dihydrogen Bonding under High Pressure: A Raman Study of BH <sub>3</sub> NH <sub>3</sub> Molecular Crystal. <i>Journal of Physical Chemistry B</i> , 2003, 107, 9231-9235.	2.6	92
23	Anion Separation by Selective Crystallization of Metal-Organic Frameworks. <i>Inorganic Chemistry</i> , 2006, 45, 6446-6452.	4.0	90
24	CO <sub>2</sub> Capture from Ambient Air by Crystallization with a Guanidine Sorbent. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 1042-1045.	13.8	89
25	Steric Control over Hydrogen Bonding in Crystalline Organic Solids: A Structural Study of N,N'-Dialkylthioureas. <i>Chemistry - A European Journal</i> , 2005, 11, 1459-1466.	3.3	81
26	Cyclic Imide Dioximes: Formation and Hydrolytic Stability. <i>Industrial &amp; Engineering Chemistry Research</i> , 2012, 51, 6619-6624.	3.7	76
27	Structure and Properties of Single Crystalline CaMg <sub>2</sub> Bi <sub>2</sub> , EuMg <sub>2</sub> Bi <sub>2</sub> , and YbMg <sub>2</sub> Bi <sub>2</sub> . <i>Inorganic Chemistry</i> , 2011, 50, 11127-11133.	4.0	74
28	Sulfate Separation from Aqueous Alkaline Solutions by Selective Crystallization of Alkali Metal Coordination Capsules. <i>Crystal Growth and Design</i> , 2011, 11, 2702-2706.	3.0	66
29	Highly soluble alkoxide magnesium salts for rechargeable magnesium batteries. <i>Journal of Materials Chemistry A</i> , 2014, 2, 581-584.	10.3	66
30	Topochemical Control of Covalent Bond Formation by Dihydrogen Bonding. <i>Journal of the American Chemical Society</i> , 1998, 120, 12935-12941.	13.7	65
31	Bis-lactam-1,10-phenanthroline (BLPhen), a New Type of Preorganized Mixed N,O-Donor Ligand That Separates Am(III) over Eu(III) with Exceptionally High Efficiency. <i>Inorganic Chemistry</i> , 2017, 56, 5911-5917.	4.0	64
32	CO <sub>2</sub> Capture via Crystalline Hydrogen-Bonded Bicarbonate Dimers. <i>CheM</i> , 2019, 5, 719-730.	11.7	64
33	Origin of the phase transition in IrTe <sub>2</sub> : Structural modulation and local bonding instability. <i>Physical Review B</i> , 2013, 88, .	3.2	62
34	Hydrogen-Bonded Helices in Crystals with Prescribed Organization. <i>Angewandte Chemie - International Edition</i> , 2002, 41, 1724-1728.	13.8	56
35	Selective binding of choline by a phosphate-coordination-based triple helicate featuring an aromatic box. <i>Nature Communications</i> , 2017, 8, 938.	12.8	56
36	Selective Crystallization of Urea-Functionalized Capsules with Tunable Anion-Binding Cavities. <i>Crystal Growth and Design</i> , 2009, 9, 1985-1989.	3.0	55

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37	Tricyanovinyl-Substituted Oligothiophenes. <i>Chemistry of Materials</i> , 2003, 15, 616-618.	6.7	53
38	Hydrogen-Bonded Helices for Anion Binding and Separation. <i>Crystal Growth and Design</i> , 2008, 8, 1909-1915.	3.0	50
39	Properties of single crystalline $\text{Zn}_2\text{Sb}_2$ ( $\text{Ca, Eu, Yb}$ ). <i>Journal of Applied Physics</i> , 2012, 111, 2.5	2.5	50
40	Direct Air Capture of $\text{CO}_2$ with Aqueous Amino Acids and Solid Bis-iminoguanidines (BIGs). <i>Industrial &amp; Engineering Chemistry Research</i> , 2019, 58, 23338-23346.	3.7	49
41	Crystal Synthesis and Frustrated Magnetism in Triangular Lattice $\text{CsRE}_2\text{Se}_2$ ( $\text{RE} = \text{Lu}$ ): Quantum Spin Liquid Candidates $\text{CsCeSe}_2$ and $\text{CsYbSe}_2$ . <i>Chemistry of Materials</i> , 2020, 32, 71-75.		49
42	Aqueous Sulfate Separation by Crystallization of Sulfate-Water Clusters. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 10525-10529.	13.8	47
43	Chiral Discrimination in Low-Density Hydrogen-Bonded Frameworks. <i>Crystal Growth and Design</i> , 2005, 5, 2277-2287.	3.0	43
44	Synthesis and Characterization of Lithium Bis(fluoromalonato)borate for Lithium-Ion Battery Applications. <i>Advanced Energy Materials</i> , 2014, 4, 1301368.	19.5	43
45	Supramolecular organization of calix[4]pyrrole with a methyl-trialkylammonium anion exchanger leads to remarkable reversal of selectivity for sulfate extraction vs. nitrate. <i>Chemical Communications</i> , 2011, 47, 7611.	4.1	40
46	Aqueous Sulfate Separation by Sequestration of $[(\text{SO}_4)_4(\text{H}_2\text{O})_4]^{4-}$ Clusters within Highly Insoluble Imine-Linked Bis-Guanidinium Crystals. <i>Chemistry - A European Journal</i> , 2016, 22, 1997-2003. <a href="#">of the antiferromagnetic and insulating states in Th-doped</a>	3.3	39
47	$S_r\text{Mn}_2\text{Ir}_r\text{O}_{4r}$ . <i>Physical Review B</i> , 2015, 92, ...	3.2	38
48	Direct air capture of $\text{CO}_2$ via crystal engineering. <i>Chemical Science</i> , 2021, 12, 12518-12528.	7.4	38
49	Computer-Aided Design of Interpenetrated Tetrahydrofuran-Functionalized 3D Covalent Organic Frameworks for $\text{CO}_2$ Capture. <i>Crystal Growth and Design</i> , 2012, 12, 5349-5356.	3.0	37
50	Dihydrogen Phosphate Clusters: Trapping $\text{H}_2\text{PO}_4^-$ Tetramers and Hexamers in Urea-Functionalized Molecular Crystals. <i>Crystal Growth and Design</i> , 2013, 13, 2233-2237.	3.0	37
51	Tuning Dihydrogen Bonds: Enhanced Solid-State Reactivity in a Dihydrogen-Bonded System with Exceptionally Short H...H Distances. <i>Angewandte Chemie - International Edition</i> , 1999, 38, 1661-1663.	13.8	34
52	Topochemical Dihydrogen to Covalent Bonding Transformation in $\text{LiBH}_4\cdot\text{TEA}$ : A Mechanistic Study. <i>Journal of the American Chemical Society</i> , 2000, 122, 5251-5257.	13.7	32
53	Nitrogen-doped porous aromatic frameworks for enhanced $\text{CO}_2$ adsorption. <i>Journal of Colloid and Interface Science</i> , 2015, 438, 191-195.	9.4	32
54	Toward Crystalline Covalent Solids: Crystal-to-Crystal Dihydrogen to Covalent Bonding Transformation in $\text{NaBH}_4\cdot\text{THEC}$ . <i>Angewandte Chemie - International Edition</i> , 2000, 39, 3299-3302.	13.8	28

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55	Ion separation by selective crystallization of organic frameworks. <i>Current Opinion in Solid State and Materials Science</i> , 2009, 13, 68-75.	11.5	28
56	Ion-pair triple helicates and mesocates self-assembled from ditopic 2,2'-bipyridine-bis(urea) ligands and Ni(II) or Fe(II) sulfate salts. <i>Chemical Communications</i> , 2012, 48, 7438.	4.1	28
57	Syntheses and Crystal Structures of 9-Acetyl- and 9-Cyano-1,2-dicarbadodecaborane: A Supramolecular Association in Carboranyl C-H Hydrogen-Bonded $\pi$ -Networks. <i>Inorganic Chemistry</i> , 1999, 38, 4916-4919.	4.0	27
58	Thermodynamic, kinetic, and structural factors in the synthesis of imine-linked dynamic covalent frameworks. <i>Tetrahedron</i> , 2012, 68, 53-64.	1.9	27
59	Surprisingly selective sulfate extraction by a simple monofunctional di(imino)guanidium micelle-forming anion receptor. <i>Chemical Communications</i> , 2018, 54, 10048-10051.	4.1	27
60	Crystalline hydrogen-bonded nanocolumns of cyclic thiourea octamers. <i>CrystEngComm</i> , 2007, 9, 452.	2.6	25
61	Synthesis, magnetization, and heat capacity of triangular lattice materials $\text{NaErSe}_2$ and $\text{KErSe}_2$ . <i>Physical Review Materials</i> , 2018, 3, 031101.	2.4	25
62	Supramolecular Synthesis through Dihydrogen Bonds: Self-Assembly of Controlled Architectures from $\text{NaBH}_4$ -Poly(2-hydroxyethyl)cyclen Building Blocks. <i>Chemistry - A European Journal</i> , 2002, 8, 302-308.	3.3	23
63	Crystals for neutron scattering studies of quantum magnetism. <i>Philosophical Magazine</i> , 2012, 92, 2629-2647.	1.6	23
64	Dialing in Direct Air Capture of $\text{CO}_2$ by Crystal Engineering of Bisiminoguanidines. <i>ChemSusChem</i> , 2020, 13, 6381-6390.	6.8	23
65	Direct air capture of $\text{CO}_2$ with aqueous peptides and crystalline guanidines. <i>Cell Reports Physical Science</i> , 2021, 2, 100385.	5.6	22
66	Dynamic Chemistry of Anion Recognition. <i>Topics in Current Chemistry</i> , 2011, 322, 193-216.	4.0	21
67	Interplay between superconductivity and magnetism in $\text{FePdTe}$ . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 9283-9288.	7.1	21
68	$\text{CO}_2$ Capture from Ambient Air by Crystallization with a Guanidine Sorbent. <i>Angewandte Chemie</i> , 2017, 129, 1062-1065.	2.0	21
69	Sodium Sulfate Separation from Aqueous Alkaline Solutions via Crystalline Urea-Functionalized Capsules: Thermodynamics and Kinetics of Crystallization. <i>Crystal Growth and Design</i> , 2015, 15, 517-522.	3.0	20
70	Cerium Chloride-methanol Adduct Crystals, $\text{CeCl}_3(\text{CH}_3\text{OH})_4$ : Preparation, Crystallography, and Scintillation Properties. <i>Crystal Growth and Design</i> , 2008, 8, 2070-2072.	3.0	19
71	Degradation of CYANEX 301 in Contact with Nitric Acid Media. <i>Industrial &amp; Engineering Chemistry Research</i> , 2012, 51, 13238-13244.	3.7	19
72	De Novo Structure-Based Design of Ion-Pair Triple-Stranded Helicates. <i>Inorganic Chemistry</i> , 2014, 53, 3893-3898.	4.0	19

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73	Energy-Efficient CO <sub>2</sub> Capture from Flue Gas by Absorption with Amino Acids and Crystallization with a Bis-Iminoguanidine. Industrial & Engineering Chemistry Research, 2019, 58, 10510-10515.	3.7	19
74	Protonation-assisted spontaneous resolution: formation of a homochiral 2D interpenetrated hydrogen-bonded network from 4,4'-bipyridine under highly acidic conditions. CrystEngComm, 2005, 7, 297-301. <a href="#">induced by interladder coupling in the spin-<math>\frac{1}{2}</math> two-leg ladder antiferromagnet</a>	2.6	17
75	<a href="#">induced by interladder coupling in the spin-<math>\frac{1}{2}</math> two-leg ladder antiferromagnet</a>	3.2	17
76	Iminoguanidines: from anion recognition and separation to carbon capture. Chemical Communications, 2020, 56, 10272-10280.	4.1	16
77	Carbon dioxide capture with aqueous amino acids: Mechanistic study of amino acid regeneration by guanidine crystallization and process intensification. Separation and Purification Technology, 2021, 271, 118839.	7.9	16
78	Mono-ionizable calix[4]arene-benzocrown-6 ligands in 1,3-alternate conformations: synthesis, structure and silver(I) extraction. Tetrahedron, 2009, 65, 7777-7783.	1.9	15
79	Structural modulation in K <sub>2</sub> V <sub>3</sub> O <sub>8</sub> . Journal of Solid State Chemistry, 2007, 180, 812-817.	2.9	12
80	Oxidative degradation of bis(2,4,4-trimethylpentyl)dithiophosphinic acid in nitric acid studied by electrospray ionization mass spectrometry. Rapid Communications in Mass Spectrometry, 2012, 26, 2195-2203.	1.5	12
81	Structure and selectivity trends in crystalline urea-functionalised anion-binding capsules. Supramolecular Chemistry, 2012, 24, 65-71.	1.2	12
82	Single-crystal CeCl <sub>3</sub> (CH <sub>3</sub> OH) <sub>4</sub> : A new metal-organic cerium chloride methanol adduct for scintillator applications. Applied Physics Letters, 2008, 93, .	3.3	11
83	Evolution of the nuclear and magnetic structures of TlFe <sub>1.6</sub> Se <sub>2</sub> with temperature. Physical Review B, 2012, 85, .	3.2	11
84	Direct air capture of CO <sub>2</sub> – topological analysis of the experimental electron density (QTAIM) of the highly insoluble carbonate salt of a 2,6-pyridine-bis(iminoguanidine), (PyBIGH <sub>2</sub> )(CO <sub>3</sub> )(H <sub>2</sub> O) <sub>4</sub> . IUCr, 2019, 6, 56-65.	2.2	11
85	Mineral – Water Interface Structure of Xenotime (YPO <sub>4</sub> ) {100}. Journal of Physical Chemistry C, 2018, 122, 20232-20243.	3.1	10
86	A conformationally persistent pseudo-bicyclic guanidinium for anion coordination as stabilized by dual intramolecular hydrogen bonds. RSC Advances, 2015, 5, 107266-107269.	3.6	9
87	Selective binding of (thio)sulfate and phosphate in water by quaternary ammonium functionalized oligo-ureas. Chemical Communications, 2019, 55, 1714-1717.	4.1	9
88	Synergistic direct air capture of CO <sub>2</sub> with aqueous guanidine/amino acid solvents. MRS Advances, 2022, 7, 399-403.	0.9	9
89	A mechanistic study of a topochemical dihydrogen to covalent bonding transformation. Thermochimica Acta, 2002, 388, 143-150.	2.7	8
90	Synthesis and structural characterization of $\text{Dioxane} \cdot 2\text{Mn}^{2+}$ Metal-organic compound with Heisenberg antiferromagnetic $\text{Mn}^{2+}$ . Physical Review B, 2009, 80, .		

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91	A New Scintillator for Fast Neutron Detection: Single-Crystal $\text{CeCl}_3 \cdot 7\text{H}_2\text{O}$ . <i>Journal of Applied Physics</i> , 2019, 125, 174501. <a href="#">DOI: 10.1063/1.5111111</a>	2.8	10
92	<i>trans</i> -tetrahexyltetramethyl-calix[4]pyrrole: an easy-to-prepare, isomerically pure anion extractant with enhanced solubility in organic solvents. <i>Supramolecular Chemistry</i> , 2016, 28, 176-187.	1.2	8
93	Enhancing selectivity of cation exchange with anion receptors. <i>Chemical Communications</i> , 2019, 55, 3590-3593.	4.1	8
94	A Process Intensification Approach for CO <sub>2</sub> Absorption Using Amino Acid Solutions and a Guanidine Compound. <i>Energies</i> , 2021, 14, 5821.	3.1	8
95	New Family of Cerium Halide Based Materials: $\text{CeX}_3 \cdot \text{ROH}$ Compounds Containing Planes, Chains, and Tetradecanuclear Rings. <i>Inorganic Chemistry</i> , 2012, 51, 10503-10511.	4.0	6
96	New crystal structural families of lanthanide chloride "Alcohol/water complexes. <i>Inorganica Chimica Acta</i> , 2012, 384, 23-28.	2.4	6
97	Crystal structure and thermal expansion of a $\text{CsCe}_2\text{Cl}_7$ scintillator. <i>Journal of Solid State Chemistry</i> , 2015, 227, 142-149.	2.9	6
98	Hybrid Absorption-Crystallization Strategies for the Direct Air Capture of CO <sub>2</sub> Using Phase-Changing Guanidinium Bases: Insights from in Operando X-ray Scattering and Infrared Spectroscopy Measurements. <i>Industrial &amp; Engineering Chemistry Research</i> , 2020, 59, 20953-20959.	3.7	6
99	Direct air capture with bis-iminoguanidines: From discovery to commercialization. <i>Chem</i> , 2021, 7, 2848-2852.	11.7	6
100	Structural Reinvestigation of Ammonium Hypophosphite: Was Dihydrogen Bonding Observed Long Ago?. <i>Inorganic Chemistry</i> , 2005, 44, 45-48.	4.0	5
101	New cerium-based metal-organic scintillators for radiation detection. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2013, 703, 138-144.	1.6	5
102	Title is missing!. <i>Structural Chemistry</i> , 1999, 10, 303-310.	2.0	4
103	3-Ethyl-6-methyl-isocytosines: Synthesis and Solid State Structural Analysis. <i>Tetrahedron</i> , 2000, 56, 5067-5075.	1.9	4
104	The observation of scintillation in a hydrated inorganic compound: $\text{CeCl}_3 \cdot 6\text{H}_2\text{O}$ . <i>Applied Physics Letters</i> , 2013, 103, 141909.	3.3	4
105	Anomalous magneto-elastic and charge doping effects in thallium-doped $\text{BaFe}_2\text{As}_2$ . <i>Scientific Reports</i> , 2016, 6, 21660.	3.3	4
106	CO <sub>2</sub> absorption from simulated flue gas in a bubble column. <i>Separation Science and Technology</i> , 2019, 54, 2034-2046.	2.5	4
107	Simulation of carbon dioxide absorption by amino acids in two-phase batch and bubble column reactors. <i>Separation Science and Technology</i> , 2019, 54, 2013-2025.	2.5	3
108	Synergistic Self-Assembly of Oxoanions and d-Block Metal Ions with Heteroditopic Receptors into Triple-Stranded Helicates. <i>Chemistry - A European Journal</i> , 2020, 26, 14290-14294.	3.3	3

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109	Structural and magnetic properties of the cobaltate series (BaSr) <sub>4</sub> La <sub>2</sub> Co <sub>2</sub> <p>Structural and magnetic properties of the cobaltate series (BaSr)<sub>4</sub>La<sub>2</sub>Co<sub>2</sub>. Physical Review B, 2012, 86, .</p>	3.2	2
110	A Photoresponsive Receptor with a 10 <sup>5</sup> Magnitude of Reversible Anion Binding Switching. Chemistry - A European Journal, 2022, , .	3.3	2
111	2,2,3,3,11,11,12,12-Octamethyl-1,4,7,10,13-pentaoxacyclohexadecane: improved synthesis and crystal structure with NaSCN. Tetrahedron Letters, 2009, 50, 2936-2938.	1.4	1
112	Alkali metal cation complexation by 1,3-alternate, mono-ionisable calix[4]arene-benzocrown-6 compounds. Supramolecular Chemistry, 2015, 27, 59-64.	1.2	1
113	Reducing Atmospheric Carbon Dioxide Through Direct Air Capture. , 2021, , .		1
114	Structural Reinvestigation of Ammonium Hypophosphite: Was Dihydrogen Bonding Observed Long Ago?. ChemInform, 2005, 36, no.	0.0	0
115	Berichtigung: Aqueous Sulfate Separation by Crystallization of Sulfate-Water Clusters. Angewandte Chemie, 2016, 128, 1985-1985.	2.0	0
116	Sulfate Separation by Selective Crystallization with a Bis-iminoguanidinium Ligand. Journal of Visualized Experiments, 2016, , .	0.3	0
117	Anti-electrostatic hydrogen-bonded tellurate dimers captured and stabilized by crystallization of a bis-iminoguanidinium salt. Polyhedron, 2022, 223, 115990.	2.2	0