Radu Custelcean

List of Publications by Year
in descending order

117 papers	7,067 citations	61857 43 h-index	58464 82 g-index
138 all docs	138 docs citations	138 times ranked	7348 citing authors

#	Article	IF	Citations
1	Dihydrogen Bonding:â€‰ Structures, Energetics, and Dynamics. Chemical Reviews, 2001, 101, 1963-1980.	23.0	600
2	Anion Separation with Metalâ€“Organic Frameworks. European Journal of Inorganic Chemistry, 2007, 2007, 1321-1340.	1.0	341
3	Direct evidence of a zigzag spin-chain structure in the honeycomb lattice: A neutron and x-ray diffraction investigation of single-crystal Na<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>IrO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review B, 2012, 85, .	1.1	318
4	Crystal engineering with urea and thiourea hydrogen-bonding groups. Chemical Communications, 2008, , 295-307.	2.2	294
5	Formation of Extended Tapes of Cyclic Water Hexamers in an Organic Molecular Crystal Host. Angewandte Chemie - International Edition, 2000, 39, 3094-3096.	7.2	264
6	Calix[4]pyrrole: An Old yet New Ion-Pair Receptor. Angewandte Chemie - International Edition, 2005, 44, 2537-2542.	7.2	255
7	Anion encapsulation and dynamics in self-assembled coordination cages. Chemical Society Reviews, 2014, 43, 1813-1824.	18.7	226
8	Urea-Functionalized M₄L₆ Cage Receptors: Anion-Templated Self-Assembly and Selective Guest Exchange in Aqueous Solutions. Journal of the American Chemical Society, 2012, 134, 8525-8534.	6.6	217
9	A Metalâ^'Organic Framework Functionalized with Free Carboxylic Acid Sites and Its Selective Binding of a Cl(H2O)4-Cluster. Journal of the American Chemical Society, 2005, 127, 16362-16363.	6.6	208
10	Computerâ€Aided Design of a Sulfateâ€Encapsulating Receptor. Angewandte Chemie - International Edition, 2009, 48, 4025-4029.	7.2	189
11	Sulfate Recognition by Persistent Crystalline Capsules with Rigidified Hydrogenâ€Bonding Cavities. Angewandte Chemie - International Edition, 2008, 47, 1866-1870.	7.2	179
12	How Amidoximate Binds the Uranyl Cation. Inorganic Chemistry, 2012, 51, 3855-3859.	1.9	175
13	A coordinatively saturated sulfate encapsulated in a metalâ€“organic framework functionalized with urea hydrogen-bonding groups. Chemical Communications, 2005, , 5971.	2.2	168
14	Anions in crystal engineering. Chemical Society Reviews, 2010, 39, 3675.	18.7	160
15	Direct air capture of CO2 via aqueous-phase absorption and crystalline-phase release using concentrated solar power. Nature Energy, 2018, 3, 553-559.	19.8	140
16	A Case for Molecular Recognition in Nuclear Separations: Sulfate Separation from Nuclear Wastes. Inorganic Chemistry, 2013, 52, 3473-3490.	1.9	130
17	Anionâ^'Ï€ Interactions in Crystal Structures: Commonplace or Extraordinary?. Crystal Growth and Design, 2009, 9, 2539-2545.	1.4	123
18	Selectivity Principles in Anion Separation by Crystallization of Hydrogen-Bonding Capsules. Journal of the American Chemical Society, 2010, 132, 7177-7185.	6.6	114

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19	Urea-functionalized crystalline capsules for recognition and separation of tetrahedral oxoanions. Chemical Communications, 2013, 49, 2173.	2.2	106
20	Sulfate separation by selective crystallization of a urea-functionalized metalâ€“organic framework. Chemical Communications, 2007, , 1541-1543.	2.2	103
21	Anion Coordination in Metalâ^'Organic Frameworks Functionalized with Urea Hydrogen-Bonding Groups. Crystal Growth and Design, 2006, 6, 555-563.	1.4	101
22	Dihydrogen Bonding under High Pressure:Â A Raman Study of BH3NH3Molecular Crystal. Journal of Physical Chemistry B, 2003, 107, 9231-9235.	1.2	92
23	Anion Separation by Selective Crystallization of Metalâ^'Organic Frameworks. Inorganic Chemistry, 2006, 45, 6446-6452.	1.9	90
24	CO₂ Capture from Ambient Air by Crystallization with a Guanidine Sorbent. Angewandte Chemie - International Edition, 2017, 56, 1042-1045.	7.2	89
25	Steric Control over Hydrogen Bonding in Crystalline Organic Solids: A Structural Study ofN,N?-Dialkylthioureas. Chemistry - A European Journal, 2005, 11, 1459-1466.	1.7	81
26	Cyclic Imide Dioximes: Formation and Hydrolytic Stability. Industrial & Engineering Chemistry Research, 2012, 51, 6619-6624.	1.8	76
27	Structure and Properties of Single Crystalline CaMg₂Bi₂, EuMg₂Bi₂, and YbMg₂Bi₂. Inorganic Chemistry, 2011, 50, 11127-11133.	1.9	74
28	Sulfate Separation from Aqueous Alkaline Solutions by Selective Crystallization of Alkali Metal Coordination Capsules. Crystal Growth and Design, 2011, 11, 2702-2706.	1.4	66
29	Highly soluble alkoxide magnesium salts for rechargeable magnesium batteries. Journal of Materials Chemistry A, 2014, 2, 581-584.	5.2	66
30	Topochemical Control of Covalent Bond Formation by Dihydrogen Bonding. Journal of the American Chemical Society, 1998, 120, 12935-12941.	6.6	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. Inorganic Chemistry, 2017, 56, 5911-5917.	1.9	64
32	CO2 Capture via Crystalline Hydrogen-Bonded Bicarbonate Dimers. CheM, 2019, 5, 719-730.	5.8	64
33	Origin of the phase transition in IrTe<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>: Structural modulation and local bonding instability. Physical Review B, 2013, 88, .	1.1	62
34	Hydrogen-Bonded Helices in Crystals with Prescribed Organization. Angewandte Chemie - International Edition, 2002, 41, 1724-1728.	7.2	56
35	Selective binding of choline by a phosphate-coordination-based triple helicate featuring an aromatic box. Nature Communications, 2017, 8, 938.	5.8	56
36	Selective Crystallization of Urea-Functionalized Capsules with Tunable Anion-Binding Cavities. Crystal Growth and Design, 2009, 9, 1985-1989.	1.4	55

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37	Tricyanovinyl-Substituted Oligothiophenes. Chemistry of Materials, 2003, 15, 616-618.	3.2	53
38	Hydrogen-Bonded Helices for Anion Binding and Separation. Crystal Growth and Design, 2008, 8, 1909-1915.	1.4	50
39	Properties of single crystalline AZn2Sb2 (Aâ€‰=â€‰Ca,Eu,Yb). Journal of Applied Physics, 2012, 111, .	1.1	50
40	Direct Air Capture of CO₂ with Aqueous Amino Acids and Solid Bis-iminoguanidines (BIGs). Industrial & Engineering Chemistry Research, 2019, 58, 23338-23346.	1.8	49
41	Crystal Synthesis and Frustrated Magnetism in Triangular Lattice CsRESe₂ (RE = Laâ€“Lu): Quantum Spin Liquid Candidates CsCeSe₂ and CsYbSe₂. , 2020, 2, 71-75.		49
42	Aqueous Sulfate Separation by Crystallization of Sulfateâ€“Water Clusters. Angewandte Chemie - International Edition, 2015, 54, 10525-10529.	7.2	47
43	Chiral Discrimination in Low-Density Hydrogen-Bonded Frameworks. Crystal Growth and Design, 2005, 5, 2277-2287.	1.4	43
44	Synthesis and Characterization of Lithium Bis(fluoromalonato)borate for Lithiumâ€ion Battery Applications. Advanced Energy Materials, 2014, 4, 1301368.	10.2	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. Chemical Communications, 2011, 47, 7611.	2.2	40
46	Aqueous Sulfate Separation by Sequestration of [(SO₄)₂(H₂O)₄]^{4â^'} Clusters within Highly Insoluble Imineâ€Linked Bisâ€Guanidinium Crystals. Chemistry - A European Journal, 2016, 22, 1997-2003.	1.7	39
47	Study of the antiferromagnetic and insulating states in Tb-doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">S</mml:mi><mml:msub><mml:mi mathvariant="normal">r</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi>Ir</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>4</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2015, 92, .	1.1	38
48	Direct air capture of CO₂viacrystal engineering. Chemical Science, 2021, 12, 12518-12528.	3.7	38
49	Computer-Aided Design of Interpenetrated Tetrahydrofuran-Functionalized 3D Covalent Organic Frameworks for CO₂ Capture. Crystal Growth and Design, 2012, 12, 5349-5356.	1.4	37
50	Dihydrogen Phosphate Clusters: Trapping H₂PO₄^{â€“} Tetramers and Hexamers in Urea-Functionalized Molecular Crystals. Crystal Growth and Design, 2013, 13, 2233-2237.	1.4	37
51	Tuning Dihydrogen Bonds: Enhanced Solid-State Reactivity in a Dihydrogen-Bonded System with Exceptionally Short Hâ‹…â‹…â‹…H Distances. Angewandte Chemie - International Edition, 1999, 38, 1661-1663.	7.2	34
52	Topochemical Dihydrogen to Covalent Bonding Transformation in LiBH4Â·TEA:Â A Mechanistic Study. Journal of the American Chemical Society, 2000, 122, 5251-5257.	6.6	32
53	Nitrogen-doped porous aromatic frameworks for enhanced CO2 adsorption. Journal of Colloid and Interface Science, 2015, 438, 191-195.	5.0	32
54	Toward Crystalline Covalent Solids: Crystal-to-Crystal Dihydrogen to Covalent Bonding Transformation in NaBH4â‹… THEC. Angewandte Chemie - International Edition, 2000, 39, 3299-3302.	7.2	28

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55	Ion separation by selective crystallization of organic frameworks. Current Opinion in Solid State and Materials Science, 2009, 13, 68-75.	5.6	28
56	Ion-pair triple helicates and mesocates self-assembled from ditopic 2,2â€²-bipyridine-bis(urea) ligands and Ni(ii) or Fe(ii) sulfate salts. Chemical Communications, 2012, 48, 7438.	2.2	28
57	Syntheses and Crystal Structures of 9-Acetyl- and 9-Cyano-1,2-dicarbadodecaborane:Â Supramolecular Association in Carboranyl Câ^'H Hydrogen-Bonded Î±-Networks. Inorganic Chemistry, 1999, 38, 4916-4919.	1.9	27
58	Thermodynamic, kinetic, and structural factors in the synthesis of imine-linked dynamic covalent frameworks. Tetrahedron, 2012, 68, 53-64.	1.0	27
59	Surprisingly selective sulfate extraction by a simple monofunctional di(imino)guanidinium micelle-forming anion receptor. Chemical Communications, 2018, 54, 10048-10051.	2.2	27
60	Crystalline hydrogen-bonded nanocolumns of cyclic thiourea octamers. CrystEngComm, 2007, 9, 452.	1.3	25
61	Synthesis, magnetization, and heat capacity of triangular lattice materials <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>NaErSe</mml:mi><mml:mn>2</mml:mn></mml:msub><(and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>KErSe</mml:mi><mml:mn>2</mml:mn></mml:msub>< Physical Review Materials, 2019, 3, .	0.9	25
62	Supramolecular Synthesis through Dihydrogen Bonds: Self-Assembly of Controlled Architectures from NaBH4â‹…Poly(2-hydroxyethyl)cyclen Building Blocks. Chemistry - A European Journal, 2002, 8, 302-308.	1.7	23
63	Crystals for neutron scattering studies of quantum magnetism. Philosophical Magazine, 2012, 92, 2629-2647.	0.7	23
64	Dialing in Direct Air Capture of CO₂ by Crystal Engineering of Bisiminoguanidines. ChemSusChem, 2020, 13, 6381-6390.	3.6	23
65	Direct air capture of CO2 with aqueous peptides and crystalline guanidines. Cell Reports Physical Science, 2021, 2, 100385.	2.8	22
66	Dynamic Chemistry of Anion Recognition. Topics in Current Chemistry, 2011, 322, 193-216.	4.0	21
67	Interplay between superconductivity and magnetism in Fe_{1â^'x}Pd_xTe. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9283-9288.	3.3	21
68	CO₂ Capture from Ambient Air by Crystallization with a Guanidine Sorbent. Angewandte Chemie, 2017, 129, 1062-1065.	1.6	21
69	Sodium Sulfate Separation from Aqueous Alkaline Solutions via Crystalline Urea-Functionalized Capsules: Thermodynamics and Kinetics of Crystallization. Crystal Growth and Design, 2015, 15, 517-522.	1.4	20
70	Cerium Chlorideâ^'methanol Adduct Crystals, CeCl3(CH3OH)4: Preparation, Crystallography, And Scintillation Properties. Crystal Growth and Design, 2008, 8, 2070-2072.	1.4	19
71	Degradation of CYANEX 301 in Contact with Nitric Acid Media. Industrial & Engineering Chemistry Research, 2012, 51, 13238-13244.	1.8	19
72	De Novo Structure-Based Design of Ion-Pair Triple-Stranded Helicates. Inorganic Chemistry, 2014, 53, 3893-3898.	1.9	19

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73	Energy-Efficient CO₂ Capture from Flue Gas by Absorption with Amino Acids and Crystallization with a Bis-Iminoguanidine. Industrial & Engineering Chemistry Research, 2019, 58, 10510-10515.	1.8	19
74	Protonation-assisted spontaneous resolution: formation of a homochiral 2D interpenetrated hydrogen-bonded network from 4,4â€²-binicotinic acid under highly acidic conditions. CrystEngComm, 2005, 7, 297-301.	1.3	17
75	Field-induced gap in Cu dimer chains induced by interladder coupling in the spin-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mfrac><mml:mn>1</mml:mn><mml:mn>2</mml:mn></mml:mfrac></mml two-leg ladder antiferromagnet<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi mathvariant="normal">C</mml:mi></mml:mrow><mml:mn>9</mml:mn></mml:msub></mml:math><mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi mathvariant="n	1.1	17
76	Iminoguanidines: from anion recognition and separation to carbon capture. Chemical Communications, 2020, 56, 10272-10280.	2.2	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.	3.9	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.	1.0	15
79	Structural modulation in K2V3O8. Journal of Solid State Chemistry, 2007, 180, 812-817.	1.4	12
80	Oxidative degradation of bis(2,4,4â€trimethylpentyl)dithiophosphinic acid in nitric acid studied by electrospray ionization mass spectrometry. Rapid Communications in Mass Spectrometry, 2012, 26, 2195-2203.	0.7	12
81	Structure and selectivity trends in crystalline urea-functionalised anion-binding capsules. Supramolecular Chemistry, 2012, 24, 65-71.	1.5	12
82	Single-crystal CeCl3(CH3OH)4: A new metal-organic cerium chloride methanol adduct for scintillator applications. Applied Physics Letters, 2008, 93, .	1.5	11
83	Evolution of the nuclear and magnetic structures of TlFe1.6Se2with temperature. Physical Review B, 2012, 85, .	1.1	11
84	Direct air capture of CO₂â€“ topological analysis of the experimental electron density (QTAIM) of the highly insoluble carbonate salt of a 2,6-pyridine-bis(iminoguanidine), (PyBIGH₂)(CO₃)(H₂O)₄. IUCrJ, 2019, 6, 56-65.	1.0	11
85	Mineralâ€“Water Interface Structure of Xenotime (YPO4) {100}. Journal of Physical Chemistry C, 2018, 122, 20232-20243.	1.5	10
86	A conformationally persistent pseudo-bicyclic guanidinium for anion coordination as stabilized by dual intramolecular hydrogen bonds. RSC Advances, 2015, 5, 107266-107269.	1.7	9
87	Selective binding of (thio)sulfate and phosphate in water by quaternary ammonium functionalized oligo-ureas. Chemical Communications, 2019, 55, 1714-1717.	2.2	9
88	Synergistic direct air capture of CO2 with aqueous guanidine/amino acid solvents. MRS Advances, 2022, 7, 399-403.	0.5	9
89	A mechanistic study of a topochemical dihydrogen to covalent bonding transformation. Thermochimica Acta, 2002, 388, 143-150.	1.2	8
90	Synthesis and structural characterization of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>2</mml:mn><mml:mtext>Dioxane</mml:mtext><mml:mo>â‹…</mml:mo><mml:mn>2</mml:n Metal-organic compound with Heisenberg antiferromagnetic<mml:math xmlns:mml="http://. Physical Review B, 2009, 80, .	1.1	8

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91	A New Scintillator for Fast Neutron Detection: Single-Crystal ${m CeCl}_{3}({m CH}_{3}{m) Tj ETQq1 1 0.784314 rgBT /Overlock 10	1.2	8
92	Î±,Î±â€²,Î±â€³,Î±â€²â€³-meso-tetrahexyltetramethyl-calix[4]pyrrole: an easy-to-prepare, isomerically pure anion extractant with enhanced solubility in organic solvents. Supramolecular Chemistry, 2016, 28, 176-187.	1.5	8
93	Enhancing selectivity of cation exchange with anion receptors. Chemical Communications, 2019, 55, 3590-3593.	2.2	8
94	A Process Intensification Approach for CO2 Absorption Using Amino Acid Solutions and a Guanidine Compound. Energies, 2021, 14, 5821.	1.6	8
95	New Family of Cerium Halide Based Materials: CeX₃Â·ROH Compounds Containing Planes, Chains, and Tetradecanuclear Rings. Inorganic Chemistry, 2012, 51, 10503-10511.	1.9	6
96	New crystal structural families of lanthanide chloride â€“ Alcohol/water complexes. Inorganica Chimica Acta, 2012, 384, 23-28.	1.2	6
97	Crystal structure and thermal expansion of a CsCe2Cl7 scintillator. Journal of Solid State Chemistry, 2015, 227, 142-149.	1.4	6
98	Hybrid Absorptionâ€“Crystallization Strategies for the Direct Air Capture of CO₂ Using Phase-Changing Guanidium Bases: Insights from in Operando X-ray Scattering and Infrared Spectroscopy Measurements. Industrial & Engineering Chemistry Research, 2020, 59, 20953-20959.	1.8	6
99	Direct air capture with bis-iminoguanidines: From discovery to commercialization. CheM, 2021, 7, 2848-2852.	5.8	6
100	Structural Reinvestigation of Ammonium Hypophosphite:â€‰ Was Dihydrogen Bonding Observed Long Ago?. Inorganic Chemistry, 2005, 44, 45-48.	1.9	5
101	New cerium-based metalâ€“organic scintillators for radiation detection. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 703, 138-144.	0.7	5
102	Title is missing!. Structural Chemistry, 1999, 10, 303-310.	1.0	4
103	3-Ethyl-6-methyl-isocytosines: Synthesis and Solid State Structural Analysis. Tetrahedron, 2000, 56, 5067-5075.	1.0	4
104	The observation of scintillation in a hydrated inorganic compound: CeCl3Â·6H2O. Applied Physics Letters, 2013, 103, 141909.	1.5	4
105	Anomalous magneto-elastic and charge doping effects in thallium-doped BaFe2As2. Scientific Reports, 2016, 6, 21660.	1.6	4
106	CO ₂ absorption from simulated flue gas in a bubble column. Separation Science and Technology, 2019, 54, 2034-2046.	1.3	4
107	Simulation of carbon dioxide absorption by amino acids in two-phase batch and bubble column reactors. Separation Science and Technology, 2019, 54, 2013-2025.	1.3	3
108	Synergistic Selfâ€Assembly of Oxoanions and dâ€Block Metal Ions with Heteroditopic Receptors into Tripleâ€Stranded Helicates. Chemistry - A European Journal, 2020, 26, 14290-14294.	1.7	3

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109	Structural and magnetic properties of the cobaltate series (BaSr)<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>4</mml:mn><mml:mo>â^’</mml:mo><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>La<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn><mml:mi>x</mml:mi></mml:mrow></mml:msub></mml:math>Co<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline">. Physical Review B, 2012, 86, .	1.1	2
110	A Photoresponsive Receptor with a 10 ⁵ Magnitude of Reversible Anionâ€Binding Switching. Chemistry - A European Journal, 2022, , .	1.7	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.	0.7	1
112	Alkali metal cation complexation by 1,3-alternate, mono-ionisable calix[4]arene-benzocrown-6 compounds. Supramolecular Chemistry, 2015, 27, 59-64.	1.5	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.	0.1	0
115	Berichtigung: Aqueous Sulfate Separation by Crystallization of Sulfateâ€Water Clusters. Angewandte Chemie, 2016, 128, 1985-1985.	1.6	0
116	Sulfate Separation by Selective Crystallization with a Bis-iminoguanidinium Ligand. Journal of Visualized Experiments, 2016, , .	0.2	0
117	Anti-electrostatic hydrogen-bonded tellurate dimers captured and stabilized by crystallization of a bis-iminoguanidinium salt. Polyhedron, 2022, 223, 115990.	1.0	0