

Metal–Metal (MM) Bond Distances and Bond Orders in First Row Transition Metals Titanium Through Zinc

Chemical Reviews

118, 11626-11706

DOI: 10.1021/acs.chemrev.8b00297

Citation Report

#	ARTICLE	IF	CITATIONS
1	Identification of a uranium–rhodium triple bond in a heterometallic cluster. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 17654-17658.	7.1	35
2	Prediction of high bond-order metal–metal multiple-bonds in heterobimetallic 3d–4f/5f complexes [TM–M{N(o-[NCH ₂ P(CH ₃) ₂]C ₆ H ₄) ₃ }] (TM = Cr, Mn, Fe; M = U, Np, Pu, and Nd). Dalton Transactions, 2019, 48, 12867-12879.	3.3	9
3	Dual transition metal doped germanium clusters for catalysis of CO oxidation. Journal of Alloys and Compounds, 2019, 806, 698-704.	5.5	13
4	Investigation of novel composites to be used as backfill materials in radioactive waste disposal facilities. Journal of Radioanalytical and Nuclear Chemistry, 2019, 322, 455-465.	1.5	1
5	Quadruple bonding between iron and boron in the BFe(CO) ₃ – complex. Nature Communications, 2019, 10, 4713.	12.8	34
6	Double core hole valence-to-core x-ray emission spectroscopy: A theoretical exploration using time-dependent density functional theory. Journal of Chemical Physics, 2019, 151, 144114.	3.0	11
7	One Macrocyclic Ligand, Four Oxidation States: A 16-Atom Ringed Dianionic Tetra-NHC Macrocycle and Its Cr(II) through Cr(V) Complexes. Organometallics, 2019, 38, 3369-3376.	2.3	11
8	Be–Be triple bond in Be ₂ X ₄ Y ₂ clusters (X = Li, Na and Y = Li, Na, K) and a perfect classical Be–Be triple bond presented in Be ₂ Na ₄ K ₂ . Dalton Transactions, 2019, 48, 14590-14594.	3.3	18
9	Neutral nano-polygons with ultrashort Be–Be distances. Dalton Transactions, 2019, 48, 15802-15809.	3.3	7
10	Computational design of species with ultrashort Be–Be distances using planar hexacoordinate carbon structures as the templates. Dalton Transactions, 2019, 48, 6581-6587.	3.3	7
11	Trapping an unprecedented Ti ₃ C ₃ unit inside the icosahedral C ₈₀ fullerene: a crystallographic survey. Chemical Science, 2019, 10, 10925-10930.	7.4	33
12	Interdependent Metal–Metal Bonding and Ligand Redox-Activity in a Series of Dinuclear Macrocyclic Complexes of Iron, Cobalt, and Nickel. Inorganic Chemistry, 2020, 59, 4200-4214.	4.0	27
13	All–Metallic Zn=Zn Double–Bonded Octahedral Zn ₂ M ₄ (M=Li, Na) Clusters with Negative Oxidation State of Zinc. ChemPhysChem, 2020, 21, 459-463.	2.1	11
14	Formation of Short Zn–Zn Bonds Stabilized by Simple Cyanide and Isocyanide Ligands. Angewandte Chemie - International Edition, 2020, 59, 2496-2504.	13.8	9
15	Formation of Short Zn–Zn Bonds Stabilized by Simple Cyanide and Isocyanide Ligands. Angewandte Chemie, 2020, 132, 2517-2525.	2.0	1
16	Coordination bonding in dicopper and dichromium tetrakis(1/4–acetato)–diaqua complexes: Nature, strength, length, and topology. Journal of Computational Chemistry, 2020, 41, 698-714.	3.3	7
17	Unsaturated binuclear homoleptic nickel carbonyl anions Ni ₂ (CO) _n – (n = 4–6) featuring double three-center two-electron Ni–C–Ni bonds. Physical Chemistry Chemical Physics, 2020, 22, 23773-23784.	2.8	4
18	Multiple d–d bonds between early transition metals in TM ₂ Lin (TM = Sc, Ti) superatomic molecule clusters. Nanoscale, 2020, 12, 20506-20512.	5.6	5

#	ARTICLE	IF	CITATIONS
19	Bimetallic cooperation across the periodic table. <i>Nature Reviews Chemistry</i> , 2020, 4, 696-702.	30.2	119
20	Metal–metal bond distances and bond orders in dimanganese complexes with bidentate ligands: scope for some very short Mn–Mn bonds. <i>New Journal of Chemistry</i> , 2020, 44, 12993-13006.	2.8	8
21	Implementation of Cooperative Designs in Polarized Transition Metal Systems—Significance for Bond Activation and Catalysis. <i>ACS Catalysis</i> , 2020, 10, 14024-14055.	11.2	57
22	Synthesis and Characterization of a Linear Triiron(II) Extended Metal Atom Chain Complex with Fe–Fe Bonds. <i>Inorganic Chemistry</i> , 2020, 59, 11238-11243.	4.0	15
23	Bridging cyclobutadiene ligands with agostic hydrogen atoms in binuclear chromium carbonyl derivatives. <i>Journal of Organometallic Chemistry</i> , 2020, 921, 121347.	1.8	2
24	Synthesis and catalytic activity of cationic dinuclear palladium (II) complexes supported by thioether ligands containing two di-(2-picolyl) amine arms. <i>Polyhedron</i> , 2020, 182, 114489.	2.2	3
25	Perfluoroolefin complexes <i>versus</i> perfluorometallacycles and perfluorocarbene complexes in cyclopentadienylcobalt chemistry. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 7616-7624.	2.8	2
26	Construction of heterometallic clusters with multiple uranium–metal bonds by using dianionic nitrogen–phosphorus ligands. <i>Chemical Science</i> , 2020, 11, 7585-7592.	7.4	27
27	Synthesis, Isomerization and Electrocatalytic Properties of Thiolate-Bridged Dicobalt Hydride Complexes with Different Substituents. <i>European Journal of Inorganic Chemistry</i> , 2020, 2020, 2757-2764.	2.0	4
28	Reactions of Alkynes with Quasi-Linear 3d Metal(I) Silylamides of Chromium to Cobalt: A Comparative Study. <i>Inorganic Chemistry</i> , 2020, 59, 9521-9537.	4.0	27
29	Theorems and rules connecting bond energy and bond order with electronegativity equalization and hardness maximization. <i>Theoretical Chemistry Accounts</i> , 2020, 139, 1.	1.4	12
30	Paramagnetic Metal–Metal Bonded Heterometallic Complexes. <i>Chemical Reviews</i> , 2020, 120, 2409-2447.	47.7	92
31	<i>N,N</i> -Diphenyl-phenylene-diamido Dianion: A Versatile Ligand for Main Group Metal–Metal-Bonded Compounds. <i>Organometallics</i> , 2020, 39, 1440-1447.	2.3	15
32	An iron ketimide single-molecule magnet [Fe ₄ (NiCPh ₂) ₆] with suppressed through-barrier relaxation. <i>Chemical Science</i> , 2020, 11, 4753-4757.	7.4	10
33	Fluorine Migration from Carbon to Iron and Fluorine–Iron Dative Bonds in Octafluorocyclohexadiene Iron Carbonyl Chemistry. <i>Organometallics</i> , 2021, 40, 397-407.	2.3	2
34	Synthesis, Structure, and Oxidative Reactivity of a Class of Thiolate-Bridged Dichromium Complexes Featuring Antiferromagnetic Coupling Interactions. <i>European Journal of Inorganic Chemistry</i> , 2021, 2021, 923-928.	2.0	2
35	Metal–Metal Bonded Compounds of the Group IX Elements. , 2021, , 4-42.		3
36	Metal-catalyzed aziridination of alkenes by organic azides: a mechanistic DFT investigation. <i>Structural Chemistry</i> , 2021, 32, 1431-1449.	2.0	1

#	ARTICLE	IF	CITATIONS
37	Iron–Iron Bond Lengths and Bond Orders in Diiron Lantern-Type Complexes with High Spin Ground States. <i>European Journal of Inorganic Chemistry</i> , 2021, 2021, 848-860.	2.0	7
38	Infrared spectroscopy of neutral clusters based on a vacuum ultraviolet free electron laser. <i>Chinese Journal of Chemical Physics</i> , 2021, 34, 51-60.	1.3	14
39	Syntheses and solid-state structures of two cofacial (bis)dipyrrin dichromium complexes in different charge states. <i>Acta Crystallographica Section C, Structural Chemistry</i> , 2021, 77, 161-166.	0.5	2
40	Solvent-Effectuated Coordination Variation of Flexible Ligands to Cu(II) for the Formation of 1D and 2D Secondary Building Units for Metal–Organic Frameworks. <i>Inorganic Chemistry</i> , 2021, 60, 5376-5382.	4.0	12
41	Synthesis and Characterization of Bidentate Isonitrile Iron Complexes. <i>Organometallics</i> , 2021, 40, 1042-1052.	2.3	6
42	Structure and Methylene Transfer Reactivity of Thiolate-Bridged Dichromium Methylene Complexes Derived from Dihalomethane via Cleavage of Two Carbon–Halogen Bonds. <i>Organometallics</i> , 2021, 40, 1434-1442.	2.3	4
43	Unsupported Lanthanide–Transition Metal Bonds: Ionic vs Polar Covalent?. <i>Inorganic Chemistry</i> , 2021, 60, 9394-9401.	4.0	13
44	Pathways to Metal–Ligand Cooperation in Quinoline-Based Titanium(IV) Pincers: Nonelectrophilic N-methylation, Deprotonation, and Dihydropyridine Formation. <i>Organometallics</i> , 2021, 40, 1838-1847.	2.3	2
45	Transition Metal Chain Complexes Supported by Soft Donor Assembling Ligands. <i>Chemical Reviews</i> , 2021, 121, 7346-7397.	47.7	22
46	Asymmetric Solvation of the Zinc Dimer Cation Revealed by Infrared Multiple Photon Dissociation Spectroscopy of $\text{Zn}_2^+(\text{H}_2\text{O})_n$ ($n = 1-20$). <i>International Journal of Molecular Sciences</i> , 2021, 22, 6026.	4.1	3
47	CO activation by the heterobinuclear transition metal-iron clusters: A photoelectron spectroscopic and theoretical study. <i>Journal of Energy Chemistry</i> , 2021, 63, 344-350.	12.9	5
48	Dirhodium(II)/Xantphos-Catalyzed Relay Carbene Insertion and Allylic Alkylation Process: Reaction Development and Mechanistic Insights. <i>Journal of the American Chemical Society</i> , 2021, 143, 11799-11810.	13.7	34
49	Metal–Metal Distance Modulation by Ligand Design: A Case Study of Structure–Property Correlation in Planar Chiral Cyclophanyl Metal Complexes. <i>Chemistry - A European Journal</i> , 2021, 27, 15021-15027.	3.3	9
50	Lantern-Type Divanadium Complexes with Bridging Ligands: Short Metal–Metal Bonds with High Multiple Bond Orders. <i>ChemPhysChem</i> , 2021, 22, 2014-2024.	2.1	4
51	Variational Energy Decomposition Analysis of Charge-Transfer Interactions between Metals and Ligands in Carbonyl Complexes. <i>Inorganic Chemistry</i> , 2021, 60, 14060-14071.	4.0	5
52	A naphthalene-chromophore-based luminescent Zn(II)-organic framework as efficient TNP sensor. <i>Polyhedron</i> , 2021, 205, 115313.	2.2	3
53	Structural and electronic analysis of bimetallic thiolate complexes of group-5 transition metal ions. <i>Journal of Organometallic Chemistry</i> , 2021, 949, 121943.	1.8	3
54	Photoinjection and carrier recombination kinetics in photoanode based on (TM)FeO ₃ adsorbed TiO ₂ quantum dots. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2021, 273, 115423.	3.5	1

#	ARTICLE	IF	CITATIONS
55	Guanidinate, Amidinate, and Formamidinate Ligands. , 2021, , 366-405.		2
56	Binuclear Cobalt Paddlewheel-Type Complexes: Relating Metal–Metal Bond Lengths to Formal Bond Orders. Inorganic Chemistry, 2021, 60, 584-596.	4.0	4
57	Metal–Metal Distance Modulated Au(I)/Ru(II) Cyclophanyl Complexes: Cooperative Effects in Photoredox Catalysis. Chemistry - A European Journal, 2021, 27, 15188-15201.	3.3	8
58	Bifunctional Effect of a Triple-Bond Heterobimetallic Zr/Co System for Hydrogen Activation. ACS Catalysis, 2021, 11, 13452-13462.	11.2	8
59	Comparing Isoelectronic, Quadruple-Bonded Metalloporphyrin and Metalloporphyrin Dimers: Scalar-Relativistic DFT Calculations Predict a >1 eV Range for Ionization Potential and Electron Affinity. ACS Physical Chemistry Au, 2022, 2, 70-78.	4.0	7
61	A Study of NbMo and NbMo– by Anion Photoelectron Spectroscopy. Journal of Physical Chemistry A, 2021, 125, 9658-9679.	2.5	0
62	Group VI Metal Complexes of Carbon Monoxide and Isocyanides. , 2022, , 352-448.		1
63	Synthesis and reactivity of heteroleptic zinc(i) complexes toward heteroallenes. Chemical Communications, 2021, 57, 13692-13695.	4.1	5
64	A supported Cr–Cr sextuple bond in an all-metal cluster. Dalton Transactions, 2022, 51, 2664-2668.	3.3	1
65	Theoretical study of hydrogen adsorption on the graphene quantum dots doped with various first row transition metals: Switch of spin state as a way to improve H ₂ adsorption. Physica E: Low-Dimensional Systems and Nanostructures, 2022, 139, 115144.	2.7	8
66	Combining metal–metal cooperativity, metal–ligand cooperativity and chemical non-innocence in diiron carbonyl complexes. Chemical Science, 2022, 13, 2094-2104.	7.4	16
67	Characterization of metal–metal and metal–ligand interactions in binuclear MnPt vinylidene complexes by molecular orbital and charge density analyses. Journal of Organometallic Chemistry, 2022, 961, 122249.	1.8	1
68	Zinc, Cadmium and Mercury. , 2022, , 89-121.		3
69	Cationic Cobalt–Thiolate Complexes for the Dehydrogenative Coupling of <i>n</i> -Bu ₃ SnH. Organometallics, 2022, 41, 852-857.	2.3	1
70	A New Look at Molecular and Electronic Structure of Homoleptic Diiron(II,II) Complexes with <i>N,N</i> -Bidentate Ligands: Combined Experimental and Theoretical Study. Chemistry - A European Journal, 2022, 28, .	3.3	4
71	Adiabatic Electron Detachment Energies, Reaction Barriers, Chemical Balance, and Ligand Effects on the Nucleophilicities of Metal Carbonyl Monoanions. Organometallics, 2022, 41, 1147-1157.	2.3	0
72	Lantern-type dinickel complexes: An exploration of possibilities for nickel–nickel bonding with bridging bidentate ligands. Journal of Computational Chemistry, 0, .	3.3	1
74	Weak Zinc-Zinc Slipped Triple Bond in Zn ₂ Li ₆ Cluster. Polyhedron, 2022, , 116032.	2.2	2

#	ARTICLE	IF	CITATIONS
75	Oligopyrrolic Cu(Cu^{II})-based tetragonal cage: synthesis, structure, and spectral and magnetic properties. Dalton Transactions, 2022, 51, 13596-13600.	3.3	2
76	Two f - and two e -dative quadruple bonds between the s-block element and transition metal in $[\text{BeM}(\text{CO})_4]$; $\text{M} = \text{Fe} \text{ to } \text{Os}$. Physical Chemistry Chemical Physics, 2022, 24, 20183-20188.	2.8	4
77	Direct observation of reversible bond homolysis by 2D EXSY NMR. Chemical Science, 2022, 13, 9202-9209.	7.4	0
78	Elucidation of divergent desaturation pathways in the formation of vinyl isonitrile and isocyanoacrylate. Nature Communications, 2022, 13, .	12.8	3
79	Mimicking the Cu Active Site of Lytic Polysaccharide Monooxygenase Using Monoanionic Tridentate N-Donor Ligands. ACS Omega, 2022, 7, 35217-35232.	3.5	4
80	Synthesis and reactivity of titanium POCOP^{TM} pincer complexes. Dalton Transactions, 0, , .	3.3	2
81	Non-redox reactivity of V^{III} and Fe^{II} formamidinates towards CO_2 resulting in the formation of novel M^{II} carbamates. Dalton Transactions, 0, , .	3.3	1
82	Molecular Capacitors: Accessible 6- and 8-Electron Redox Chemistry from Dimeric Ti^{II} and Ti^{IV} Synthons Supported by Imidazolin-2-ylidene Ligands. Inorganic Chemistry, 2022, 61, 16856-16873.	4.0	4
83	Metal-metal bond in lanthanide single-molecule magnets. Chemical Society Reviews, 2022, 51, 9469-9481.	38.1	54
84	Copper and Zinc Complexes of 2,7-Bis(6-methyl-2-pyridyl)-1,8-naphthyridine: A Redox-Active, Dinucleating Bis(bipyridine) Ligand. Inorganic Chemistry, 2022, 61, 19333-19343.	4.0	3
85	Investigation on the molecular, electronic, biological and spectroscopic properties of a novel cobalt complex: An intuition from an experimental and computational perspective. Polyhedron, 2023, 235, 116369.	2.2	11
86	Emerging d - d orbital coupling between non-d-block main-group elements Mg and I at high pressure. IScience, 2023, 26, 106113.	4.1	1
87	$\text{ScY}@\text{C}_{82}(\text{C}_{82})$: A Metal-Metal f^2 Bond in Mixed Rare-Earth Di-metallofullerenes. Chinese Journal of Chemistry, 2023, 41, 1809-1814.	4.9	3
88	Electrocatalytic reduction of CO_2 on size-selected nanoclusters of first-row transition metal nanoclusters: a comprehensive mechanistic investigation. Physical Chemistry Chemical Physics, 2023, 25, 11630-11652.	2.8	6
89			

#	ARTICLE	IF	CITATIONS
93	Heterobinuclear Vanadium-Nickel Lantern-Type Complexes: Metal-Metal bonding and structure. <i>Inorganica Chimica Acta</i> , 2023, 555, 121563.	2.4	0
94	Cleavage of Carbon Dioxide C=O Bond Promoted by Nickel-Boron Cooperativity in a PBP-Ni Complex. <i>Angewandte Chemie - International Edition</i> , 2023, 62, .	13.8	1
95	Cleavage of Carbon Dioxide C=O Bond Promoted by Nickel-Boron Cooperativity in a PBP-Ni Complex. <i>Angewandte Chemie</i> , 2023, 135, .	2.0	0
96	Highly Selective Nickel-Catalyzed Isomerization-Hydroboration of Alkenes Affords Terminal Functionalization at Remote C-H Position. <i>Chemistry - A European Journal</i> , 2023, 29, .	3.3	0
97	Measuring Metal-Metal Communication in a Series of Ketimide-Bridged [Fe ₂] ⁶⁺ Complexes. <i>Inorganic Chemistry</i> , 2023, 62, 11829-11836.	4.0	0
98	Metal Deficiency Tailored by the 18-Electron Rule Stabilizes Metal-Based Inorganic Compounds. <i>Chemistry of Materials</i> , 2023, 35, 6050-6058.	6.7	0
99	Pd ₈ Nanocluster with Nonmetal-to-Metal Ring Coordination and Promising Photothermal Conversion Efficiency. <i>Angewandte Chemie - International Edition</i> , 2024, 63, .	13.8	1
100	Pd ₈ Nanocluster with Nonmetal-to-Metal Ring Coordination and Promising Photothermal Conversion Efficiency. <i>Angewandte Chemie</i> , 0, , .	2.0	0
101	CO ₂ and H ₂ Activation on Zinc-Doped Copper Clusters. <i>ChemPhysChem</i> , 0, , .	2.1	0
102	Simple, near-universal relationships between bond lengths, strengths, and anharmonicities. <i>AIP Advances</i> , 2023, 13, .	1.3	0
103	On-Surface Synthesis of Multiple Cu Atom-Bridged Organometallic Oligomers. <i>ACS Nano</i> , 2023, 17, 24355-24362.	14.6	0
104	Geometric Analysis and DFT Study of 2,2-Dipyridylamine-Stabilized First-Row Transition-Metal Complexes. <i>Crystal Growth and Design</i> , 0, , .	3.0	0
105	A one-pot reduction route to bimetallic manganese 1,8-naphthyridine complexes. <i>Dalton Transactions</i> , 0, , .	3.3	0
106	Cobalt-Functionalized Open-[60]Fullerenes. <i>Organometallics</i> , 2024, 43, 227-232.	2.3	0