Robert L Whetten

List of Publications by Year
in descending order

90	15,345	43	87
papers	citations	h-index	g-index
		71004	56606
91	91	91	10619
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Isolation of the Au₁₄₅(SR)₆₀X compound (R = <i>n</i>-butyl, <i>n</i>-pentyl; X) Tj ETQq1 1 0.784314 rgBT icosahedral Au₁₄₄(SR)₆₀ compound. Nanoscale, 2021, 13, 15394-15402.	2.8	3
2	Optical properties of $$hbox {Ag}_{29}$$(BDT)$$_{12}$$(TPP)$$_4$$ in the VIS and UV and influence of ligand modeling based on real-time electron dynamics. Theoretical Chemistry Accounts, 2021, 140, 1.	0.5	1
3	Crucial Role of Conjugation in Monolayer-Protected Metal Clusters with Aromatic Ligands: Insights from the Archetypal Au₁₄₄L₆₀ Cluster Compounds. Journal of Physical Chemistry Letters, 2021, 12, 9262-9268.	2.1	7
4	Robustness of the chiral-icosahedral golden shell I-Au60 in multi-shell structures. Journal of Chemical Physics, 2021, 155, 204307.	1.2	1
5	The Missing Link: Au191(SPh-tBu)66 Janus Nanoparticle with Molecular and Bulk-Metal-like Properties. Journal of the American Chemical Society, 2020, 142, 15799-15814.	6.6	48
6	Robustness of Superatoms and Their Potential as Building Blocks of Materials: Al₁₃^{â€“} vs B(CN)₄^{â€“}. Journal of Physical Chemistry C, 2020, 124, 6435-6440.	1.5	7
7	Structural Analysis of Ligand-Protected Smaller Metallic Nanocrystals by Atomic Pair Distribution Function under Precession Electron Diffraction. Journal of Physical Chemistry C, 2019, 123, 19894-19902.	1.5	19
8	Toward Smaller Aqueous-Phase Plasmonic Gold Nanoparticles: High-Stability Thiolate-Protected â^¼4.5 nm Cores. Langmuir, 2019, 35, 10610-10617.	1.6	13
9	New Evidence of the Bidentate Binding Mode in 3-MBA Protected Gold Clusters: Analysis of Aqueous 13â€“18 kDa Gold-Thiolate Clusters by HPLC-ESI-MS Reveals Special Compositions Aun(3-MBA)p, (n = 48â€“67,) Tj ETQq1 1 0.784314	1.9	6
10	Binding of multiple SO 2 molecules to small gold cluster anions (Au N â^' , Au N OH â^' , N = 1â€8). International Journal of Quantum Chemistry, 2019, 119, e25987.	1.0	4
11	Protein-Like Large Gold Clusters Based on the Ï‰-Aminothiolate DMAET: Precision Thermal and Reaction Control Leading to Selective Formation of Cationic Gold Clusters in the Critical Size Range, <i>n</i> = 130â€“144 Gold Atoms. Journal of Physical Chemistry C, 2019, 123, 14871-14879.	1.5	9
12	Base Side of Noble Metal Clusters: Efficient Route to Captamino-Gold, Au_{<i>n</i>}(â^'S(CH₂)₂N(CH₃)₂)_{<i>p</i>}, <i>n</i> = 25â€“144. Journal of Physical Chemistry Letters, 2019, 10, 3307-3311.	3.1	7
13	Activating a Silver Lipoate Nanocluster with a Penicillin Backbone Induces a Synergistic Effect against <i>S. aureus</i> Biofilm. ACS Omega, 2019, 4, 21914-21920.	1.6	6
14	Chiral-Icosahedral (<i>I</i>) Symmetry in Ubiquitous Metallic Cluster Compounds (145A,60X): Structure and Bonding Principles. Accounts of Chemical Research, 2019, 52, 34-43.	7.6	62
15	Tetrahedral (<i>T</i>) Closed-Shell Cluster of 29 Silver Atoms & 12 Lipoate Ligands, [Ag₂₉(R-Î±-LA)₁₂]^(3â^'): Antibacterial and Antifungal Activity. ACS Applied Nano Materials, 2018, 1, 1595-1602.	2.4	28
16	Liquid Chromatography Separation and Mass Spectrometry Detection of Silver-Lipoate Ag₂₉(LA)₁₂ Nanoclusters: Evidence of Isomerism in the Solution Phase. Analytical Chemistry, 2018, 90, 2010-2017.	3.2	29
17	Gold Nanocluster Prospecting via Capillary Liquid Chromatography-Mass Spectrometry: Discovery of Three Quantized Gold Clusters in a Product Mixture of â€œ2 nm Gold Nanoparticlesâ€. Industrial & Engineering Chemistry Research, 2018, 57, 5378-5384.	1.8	7
18	Atomically precise Au₁₄₄(SR)₆₀ nanoclusters (R = Et, Pr) are capped by 12 distinct ligand types of 5-fold equivalence and display gigantic diastereotopic effects. Chemical Science, 2018, 9, 8796-8805.	3.7	30

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19	Identifying Electronic Modes by Fourier Transform from Î´-Kick Time-Evolution TDDFT Calculations. Journal of Chemical Theory and Computation, 2018, 14, 6417-6426.	2.3	19
20	Synthesis, Mass Spectrometry, and Atomic Structural Analysis of Au_{âˆ¼2000}(SR)_{âˆ¼290} Nanoparticles. Journal of Physical Chemistry C, 2018, 122, 26733-26738.	1.5	20
21	Isolation of a 300 kDa, Au_{âˆ¼1400} Gold Compound, the Standard 3.6 nm Capstone to a Series of Plasmonic Nanocrystals Protected by Aliphatic-like Thiolates. Journal of Physical Chemistry Letters, 2018, 9, 6825-6832.	2.1	18
22	Chiral symmetry breaking yields the I-Au60 perfect golden shell of singular rigidity. Nature Communications, 2018, 9, 3352.	5.8	18
23	In Search of the Quantum-Electronic Origin of Color Change: Elucidation of the Subtle Effects of Alloying with Copper on â‰ˆ1.8 nm Gold Nanoclusters. Journal of Physical Chemistry C, 2017, 121, 5753-5760.	1.5	11
24	Ultraviolet Photodissociation of Selected Gold Clusters: Ultraefficient Unstapling and Ligand Stripping of Au₂₅(pMBA)₁₈ and Au₃₆(pMBA)₂₄. Journal of Physical Chemistry Letters, 2017, 8, 1283-1289.	2.1	29
25	Triethylamine Solution for the Intractability of Aqueous Goldâ€“Thiolate Cluster Anions: How Ion Pairing Enhances ESI-MS and HPLC of <i>aq</i>-Au_{<i>n</i>}(pMBA)_{<i>p</i>}. Journal of Physical Chemistry C, 2017, 121, 10851-10857.	1.5	22
26	Is the largest aqueous gold cluster a superatom complex? Electronic structure & optical response of the structurally determined Au₁₄₆(<i>p</i>-MBA)₅₇. Nanoscale, 2017, 9, 18629-18634.	2.8	9
27	MicroED Structure of Au₁₄₆(p-MBA)₅₇ at Subatomic Resolution Reveals a Twinned FCC Cluster. Journal of Physical Chemistry Letters, 2017, 8, 5523-5530.	2.1	100
28	Fast Scanning Electron Diffraction and Electron Holography as Methods to Acquire Structural Information on Au102(p-MBA)44 Nanoclusters. Microscopy and Microanalysis, 2016, 22, 528-529.	0.2	1
29	Capillary Liquid Chromatography Mass Spectrometry Analysis of Intact Monolayer-Protected Gold Clusters in Complex Mixtures. Analytical Chemistry, 2016, 88, 5631-5636.	3.2	23
30	Fully Cationized Gold Clusters: Synthesis of Au₂₅(SR⁺)₁₈. Journal of Physical Chemistry Letters, 2016, 7, 3718-3722.	2.1	38
31	Selection and Identification of Molecular Gold Clusters at the Nano(gram) Scale: Reversed Phase HPLCâ€“ESIâ€“MS of a Mixture of Au-Peth MPCs. Journal of Physical Chemistry Letters, 2016, 7, 3199-3205.	2.1	23
32	Hidden Components in Aqueous â€œGold-144â€•Fractionated by PAGE: High-Resolution Orbitrap ESI-MS Identifies the Gold-102 and Higher All-Aromatic Au-<i>p</i>MBA Cluster Compounds. Journal of Physical Chemistry B, 2016, 120, 6430-6438.	1.2	34
33	Analytical Characterization of Size-Dependent Properties of Larger Aqueous Gold Nanoclusters. Journal of Physical Chemistry C, 2016, 120, 8950-8958.	1.5	33
34	Electrum, the Goldâ€“Silver Alloy, from the Bulk Scale to the Nanoscale: Synthesis, Properties, and Segregation Rules. ACS Nano, 2016, 10, 188-198.	7.3	163
35	Reversible Size Control of Silver Nanoclusters via Ligand-Exchange. Chemistry of Materials, 2015, 27, 4289-4297.	3.2	106
36	Aspheric Solute Ions Modulate Gold Nanoparticle Interactions in an Aqueous Solution: An Optimal Way To Reversibly Concentrate Functionalized Nanoparticles. Journal of Physical Chemistry B, 2015, 119, 15502-15508.	1.2	8

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37	Geometric Quantification of Chirality in Ligand-Protected Metal Clusters. Journal of Physical Chemistry C, 2015, 119, 28666-28678.	1.5	74
38	Optical Spectra of the Special Au₁₄₄ Gold-Cluster Compounds: Sensitivity to Structure and Symmetry. Journal of Physical Chemistry C, 2015, 119, 11250-11259.	1.5	37
39	ESI-MS Identification of Abundant Copperâ€“Gold Clusters Exhibiting High Plasmonic Character. Journal of Physical Chemistry C, 2015, 119, 10935-10942.	1.5	25
40	Ligand-modulated interactions between charged monolayer-protected Au₁₄₄(SR)₆₀ gold nanoparticles in physiological saline. Physical Chemistry Chemical Physics, 2015, 17, 3680-3688.	1.3	17
41	A Unified Framework for Understanding the Structure and Modifications of Atomically Precise Monolayer Protected Gold Clusters. Journal of Physical Chemistry C, 2015, 119, 27768-27785.	1.5	53
42	Synthesis and Structural Characterization of Ferromagnetic Au/Co Nanoparticles. Materials Research Society Symposia Proceedings, 2014, 1708, 43.	0.1	2
43	Collision-Induced Dissociation of Monolayer Protected Clusters Au₁₄₄ and Au₁₃₀ in an Electrospray Time-of-Flight Mass Spectrometer. Journal of Physical Chemistry A, 2014, 118, 10679-10687.	1.1	27
44	Interaction between functionalized gold nanoparticles in physiological saline. Physical Chemistry Chemical Physics, 2014, 16, 3909.	1.3	18
45	Structural order in ultrathin films of the monolayer protected clusters based upon 4 nm gold nanocrystals: an experimental and theoretical study. Physical Chemistry Chemical Physics, 2014, 16, 18098-18104.	1.3	8
46	Optical response of quantum-sized Ag and Au clusters â€“ cage vs. compact structures and the remarkable insensitivity to compression. Physical Chemistry Chemical Physics, 2014, 16, 12495-12502.	1.3	17
47	Information on quantum states pervades the visible spectrum of the ubiquitous Au144(SR)60 gold nanocluster. Nature Communications, 2014, 5, 3785.	5.8	127
48	Au₆₇(SR)₃₅ Nanomolecules: Characteristic Size-Specific Optical, Electrochemical, Structural Properties and First-Principles Theoretical Analysis. Journal of Physical Chemistry A, 2013, 117, 504-517.	1.1	140
49	Ultrastable silver nanoparticles. Nature, 2013, 501, 399-402.	13.7	1,023
50	Ligand Effects on the Structure and the Electronic Optical Properties of Anionic Au₂₅(SR)₁₈ Clusters. Journal of Physical Chemistry C, 2013, 117, 20867-20875.	1.5	145
51	Structure of the Thiolated Au₁₃₀ Cluster. Journal of Physical Chemistry A, 2013, 117, 10470-10476.	1.1	64
52	Structure & bonding of the gold-subhalide cluster I-Au144Cl60[z]. Physical Chemistry Chemical Physics, 2013, 15, 19191.	1.3	41
53	STEM Electron Diffraction and High-Resolution Images Used in the Determination of the Crystal Structure of the Au₁₄₄(SR)₆₀ Cluster. Journal of Physical Chemistry Letters, 2013, 4, 975-981.	2.1	122
54	Vibrational Normal Modes of Small Thiolate-Protected Gold Clusters. Journal of Physical Chemistry C, 2013, 117, 12191-12198.	1.5	59

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55	Structure and composition of Au/Co magneto-plasmonic nanoparticles. MRS Communications, 2013, 3, 177-183.	0.8	25
56	The Superstable 25 kDa Monolayer Protected Silver Nanoparticle: Measurements and Interpretation as an Icosahedral Ag₁₅₂(SCH₂CH₂Ph)₆₀ Cluster. Nano Letters, 2012, 12, 5861-5866.	4.5	121
57	Ligand symmetry-equivalence on thiolate protected gold nanoclusters determined by NMR spectroscopy. Nanoscale, 2012, 4, 4099.	2.8	72
58	A 58-electron superatom-complex model for the magic phosphine-protected gold clusters (Schmid-gold, NanogoldÂ®) of 1.4-nm dimension. Chemical Science, 2011, 2, 1583.	3.7	44
59	The Al50Cp*12 Cluster - A 138-Electron Closed Shell (L = 6) Superatom. European Journal of Inorganic Chemistry, 2011, 2011, 2649-2652.	1.0	41
60	Structure and Bonding in the Ubiquitous Icosahedral Metallic Gold Cluster Au₁₄₄(SR)₆₀. Journal of Physical Chemistry C, 2009, 113, 5035-5038.	1.5	393
61	Goldâ^'Thiolate Complexes Form a Unique <i>c</i>(4 Ã— 2) Structure on Au(111). Journal of Physical Chemistry C, 2008, 112, 15940-15942.	1.5	125
62	On the Structure of Thiolate-Protected Au₂₅. Journal of the American Chemical Society, 2008, 130, 3756-3757.	6.6	682
63	A unified view of ligand-protected gold clusters as superatom complexes. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 9157-9162.	3.3	1,472
64	Nano-Golden Order. Science, 2007, 318, 407-408.	6.0	174
65	The colours of nanometric gold. European Physical Journal D, 2007, 43, 91-95.	0.6	117
66	Adsorption of carbon monoxide on smaller gold-cluster anions in an atmospheric-pressure flow-reactor: temperature and humidity dependence. Physical Chemistry Chemical Physics, 2005, 7, 930.	1.3	22
67	Efficient Low-Temperature Oxidation of Carbon-Cluster Anions by SO2. Journal of Physical Chemistry A, 2005, 109, 6218-6222.	1.1	5
68	Oxygen Adsorption on Hydrated Gold Cluster Anions:â€‰ Experiment and Theory. Journal of the American Chemical Society, 2003, 125, 8408-8414.	6.6	100
69	Coadsorption of CO and O2 on Selected Gold Clusters:â€‰ Evidence for Efficient Room-Temperature CO2 Generation. Journal of the American Chemical Society, 2002, 124, 7499-7505.	6.6	444
70	Visible to Infrared Luminescence from a 28-Atom Gold Cluster. Journal of Physical Chemistry B, 2002, 106, 3410-3415.	1.2	538
71	Properties of a Ubiquitous 29 kDa Au:SR Cluster Compound. Journal of Physical Chemistry B, 2001, 105, 8785-8796.	1.2	208
72	Carbon Monoxide Adsorption on Selected Gold Clusters:Â Highly Size-Dependent Activity and Saturation Compositions. Journal of Physical Chemistry B, 2000, 104, 10964-10968.	1.2	136

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73	Near-Infrared Luminescence from Small Gold Nanocrystals. Journal of Physical Chemistry B, 2000, 104, 6983-6986.	1.2	269
74	Giant Goldâ˘'Glutathione Cluster Compounds:Â Intense Optical Activity in Metal-Based Transitions. Journal of Physical Chemistry B, 2000, 104, 2630-2641.	1.2	699
75	Crystal Structures of Molecular Gold Nanocrystal Arrays. Accounts of Chemical Research, 1999, 32, 397-406.	7.6	570
76	Controlled Etching of Au:SR Cluster Compounds. Journal of Physical Chemistry B, 1999, 103, 9394-9396.	1.2	237
77	The Monolayer Thickness Dependence of Quantized Double-Layer Capacitances of Monolayer-Protected Gold Clusters. Analytical Chemistry, 1999, 71, 3703-3711.	3.2	224
78	Greengold, a giant cluster compound of unusual electronic structure. , 1999, , 647-651.		3
79	Isolation and Selected Properties of a 10.4 kDa Gold:Glutathione Cluster Compound. Journal of Physical Chemistry B, 1998, 102, 10643-10646.	1.2	650
80	Gold Nanoelectrodes of Varied Size: Transition to Molecule-Like Charging. Science, 1998, 280, 2098-2101.	6.0	1,018
81	Giant gold-cluster compoundsâ€"gaps in optical and charging spectra, and an electronic origin of abundance anomalies. , 1998, , .		0
82	28 kDa Alkanethiolate-Protected Au Clusters Give Analogous Solution Electrochemistry and STM Coulomb Staircases. Journal of the American Chemical Society, 1997, 119, 9279-9280.	6.6	300
83	Isolation of Smaller Nanocrystal Au Molecules:Â Robust Quantum Effects in Optical Spectra. Journal of Physical Chemistry B, 1997, 101, 7885-7891.	1.2	570
84	Optical Absorption Spectra of Nanocrystal Gold Molecules. Journal of Physical Chemistry B, 1997, 101, 3706-3712.	1.2	1,277
85	Three-Dimensional Hexagonal Close-Packed Superlattices of Passivated Ag Nanocrystals. Microscopy and Microanalysis, 1997, 3, 431-432.	0.2	0
86	Structural evolution of larger gold clusters. Zeitschrift FÃ¼r Physik D-Atoms Molecules and Clusters, 1997, 40, 503-508.	1.0	140
87	Three-dimensional hexagonal close-packed superlattice of passivated Ag nanocrystals. Advanced Materials, 1997, 9, 817-822.	11.1	181
88	Reversible Manipulations of Room Temperature Mechanical and Quantum Transport Properties in Nanowire Junctions. Physical Review Letters, 1996, 77, 1362-1365.	2.9	219
89	Nanocrystal gold molecules. Advanced Materials, 1996, 8, 428-433.	11.1	1,179
90	Nanocrystal Gold Molecules. , 1996, , 475-490.		8