

Oliver Diwald

List of Publications by Year in descending order

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108
papers

5,175
citations

101543

36
h-index

88630

70
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126
all docs

126
docs citations

126
times ranked

5761
citing authors

#	ARTICLE	IF	CITATIONS
1	Photochemical Activity of Nitrogen-Doped Rutile TiO ₂ (110) in Visible Light. Journal of Physical Chemistry B, 2004, 108, 6004-6008.	2.6	699
2	Light-Induced Charge Separation in Anatase TiO ₂ Particles. Journal of Physical Chemistry B, 2005, 109, 6061-6068.	2.6	569
3	The Effect of Nitrogen Ion Implantation on the Photoactivity of TiO ₂ Rutile Single Crystals. Journal of Physical Chemistry B, 2004, 108, 52-57.	2.6	356
4	Ultraviolet Light-Induced Hydrophilicity Effect on TiO ₂ (110)(1 $\bar{1}$ –1). Dominant Role of the Photooxidation of Adsorbed Hydrocarbons Causing Wetting by Water Droplets. Journal of Physical Chemistry B, 2005, 109, 15454-15462.	2.6	288
5	Size-Dependent Optical Properties of MgO Nanocubes. Angewandte Chemie - International Edition, 2005, 44, 4917-4920.	13.8	205
6	CO ₂ as a Probe for Monitoring the Surface Defects on TiO ₂ (110) Temperature-Programmed Desorption. Journal of Physical Chemistry B, 2003, 107, 11700-11704.	2.6	136
7	Charge Trapping and Photoadsorption of O ₂ on Dehydroxylated TiO ₂ Nanocrystals – An Electron Paramagnetic Resonance Study. ChemPhysChem, 2005, 6, 2104-2112.	2.1	127
8	Energy Transfer on the MgO Surface, Monitored by UV-Induced H ₂ Chemisorption. Journal of the American Chemical Society, 2003, 125, 195-199.	13.7	112
9	STM studies of defect production on the (110)-(1 $\bar{1}$ –1) and (110)-(1 $\bar{1}$ –2) surfaces induced by UV irradiation. Chemical Physics Letters, 2003, 369, 152-158.	2.6	109
10	Stability and Photoelectronic Properties of Layered Titanate Nanostructures. Journal of the American Chemical Society, 2009, 131, 6198-6206.	13.7	101
11	Vacancies and Electron Deficient Surface Anions on the Surface of MgO Nanoparticles. Journal of Physical Chemistry B, 2000, 104, 3601-3607.	2.6	88
12	Optical Surface Properties and Morphology of MgO and CaO Nanocrystals. Journal of Physical Chemistry B, 2006, 110, 13866-13871.	2.6	81
13	Novel Optical Surface Properties of Ca ²⁺ -Doped MgO Nanocrystals. Nano Letters, 2005, 5, 1889-1893.	9.1	69
14	Chemical Control of Photoexcited States in Titanate Nanostructures. Nano Letters, 2007, 7, 433-438.	9.1	65
15	Wavelength selective excitation of surface oxygen anions on highly dispersed MgO. Journal of Chemical Physics, 2002, 116, 1707-1712.	3.0	62
16	Lithium ion induced surface reactivity changes on MgO nanoparticles. Journal of Catalysis, 2007, 247, 61-67.	6.2	61
17	Chemical vapour deposition – a new approach to reactive surface defects of uniform geometry on high surface area magnesium oxide. Journal of Molecular Catalysis A, 2000, 162, 83-95.	4.8	60
18	Particle Networks from Powder Mixtures: Generation of TiO ₂ –SnO ₂ Heterojunctions via Surface Charge-Induced Heteroaggregation. Journal of Physical Chemistry C, 2012, 116, 22967-22973.	3.1	59

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19	Site selective hydroxylation of the MgO surface. <i>Physical Chemistry Chemical Physics</i> , 2002, 4, 2811-2817.	2.8	57
20	Energies and Dynamics of Photoinduced Electron and Hole Processes on MgO Powders. <i>Journal of Physical Chemistry B</i> , 2002, 106, 12478-12482.	2.6	54
21	Solar Light and Dopant-Induced Recombination Effects: Photoactive Nitrogen in TiO ₂ as a Case Study. <i>Journal of Physical Chemistry C</i> , 2010, 114, 18067-18072.	3.1	54
22	Particles Coming Together: Electron Centers in Adjoined TiO ₂ Nanocrystals. <i>Journal of Physical Chemistry B</i> , 2006, 110, 7605-7608.	2.6	52
23	Hydrogen activation at TiO ₂ anatase nanocrystals. <i>Chemical Physics</i> , 2007, 339, 138-145.	1.9	49
24	Solid-Solid Interface Formation in TiO ₂ Nanoparticle Networks. <i>Langmuir</i> , 2011, 27, 1946-1953.	3.5	49
25	Size Effects in MgO Cube Dissolution. <i>Langmuir</i> , 2015, 31, 2770-2776.	3.5	49
26	UV induced local heating effects in TiO ₂ nanocrystals. <i>Physical Chemistry Chemical Physics</i> , 2006, 8, 1822-1826.	2.8	46
27	Effect of Protons on the Optical Properties of Oxide Nanostructures. <i>Journal of the American Chemical Society</i> , 2007, 129, 12491-12496.	13.7	45
28	O [•] radical ions on MgO as a tool to unravel structure and location of ionic vacancies at the surface of oxides: a coupled experimental and theoretical investigation. <i>Surface Science</i> , 2001, 494, 95-110.	1.9	44
29	Bovine Serum Albumin Adsorption on TiO ₂ Colloids: The Effect of Particle Agglomeration and Surface Composition. <i>Langmuir</i> , 2017, 33, 2551-2558.	3.5	44
30	Charge Separation in Layered Titanate Nanostructures: Effect of Ion Exchange Induced Morphology Transformation. <i>Angewandte Chemie - International Edition</i> , 2008, 47, 1496-1499.	13.8	43
31	Optical Properties of Nanocrystal Interfaces in Compressed MgO Nanopowders. <i>ACS Nano</i> , 2011, 5, 3003-3009.	14.6	43
32	Computational and Experimental Investigations into N ₂ O Decomposition over MgO Nanocrystals from Thorough Molecular Mechanism to ab initio Microkinetics. <i>Journal of Physical Chemistry C</i> , 2011, 115, 22451-22460.	3.1	41
33	Morphology-Graded Silicon Nanowire Arrays via Chemical Etching: Engineering Optical Properties at the Nanoscale and Macroscale. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 13140-13147.	8.0	41
34	Intermolecular Electron Transfer on the Surface of MgO Nanoparticles. <i>Journal of Physical Chemistry B</i> , 2002, 106, 3495-3502.	2.6	39
35	Functional Interfaces in Pure and Blended Oxide Nanoparticle Networks: Recombination versus Separation of Photogenerated Charges. <i>Journal of Physical Chemistry C</i> , 2009, 113, 15792-15795.	3.1	39
36	O ₂ adsorption dependent photoluminescence emission from metal oxide nanoparticles. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 23922-23929.	2.8	38

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37	H ₂ chemisorption and consecutive UV stimulated surface reactions on nanostructured MgO. Physical Chemistry Chemical Physics, 1999, 1, 713-721.	2.8	36
38	Porphyrin Metalation at MgO Surfaces: A Spectroscopic and Quantum Mechanical Study on Complementary Model Systems. Chemistry - A European Journal, 2016, 22, 1744-1749.	3.3	36
39	The Color of the MgO Surface A UV/Vis Diffuse Reflectance Investigation of Electron Traps. Journal of Physical Chemistry B, 2004, 108, 7280-7285.	2.6	35
40	Chemistry at corners and edges: Generation and adsorption of H atoms on the surface of MgO nanocubes. Journal of Chemical Physics, 2005, 123, 064714.	3.0	33
41	Enhancement of TiO ₂ visible light photoactivity through accumulation of defects during reduction-oxidation treatment. Journal of Photochemistry and Photobiology A: Chemistry, 2010, 212, 135-141.	3.9	33
42	Zinc oxide scaffolds on MgO nanocubes. Nanotechnology, 2010, 21, 355603.	2.6	31
43	Trapping of photogenerated charges in oxide nanoparticles. Materials Science and Engineering C, 2005, 25, 664-668.	7.3	30
44	Porphyrin Metalation at the MgO Nanocube/Toluene Interface. ACS Applied Materials & Interfaces, 2015, 7, 22962-22969.	8.0	30
45	First Combined Electron Paramagnetic Resonance and FT-IR Spectroscopic Evidence for Reversible O ₂ Adsorption on In ₂ O ₃ Nanoparticles. Journal of Physical Chemistry C, 2013, 117, 20722-20729.	3.1	29
46	Photoluminescent Nanoparticle Surfaces: The Potential of Alkaline Earth Oxides for Optical Applications. Advanced Materials, 2008, 20, 4840-4844.	21.0	28
47	Facilitated Lattice Oxygen Depletion in Consolidated TiO ₂ Nanocrystal Ensembles: A Quantitative Spectroscopic O ₂ Adsorption Study. Journal of Physical Chemistry C, 2012, 116, 2896-2903.	3.1	27
48	Phase Separation at the Nanoscale: Structural Properties of BaO Segregates on MgO-Based Nanoparticles. Journal of Physical Chemistry C, 2011, 115, 15853-15861.	3.1	26
49	Molecular oxygen-mediated vacancy diffusion on TiO ₂ (1 1 0)-new studies of the proposed mechanism. Chemical Physics Letters, 2004, 393, 28-30.	2.6	25
50	Exciton Formation at Solid-Solid Interfaces: A Systematic Experimental and ab Initio Study on Compressed MgO Nanopowders. Journal of Physical Chemistry C, 2012, 116, 10103-10112.	3.1	25
51	Anchoring of carboxyl-functionalized porphyrins on MgO, TiO ₂ , and Co ₃ O ₄ nanoparticles. Physical Chemistry Chemical Physics, 2018, 20, 24858-24868.	2.8	25
52	Photoluminescence quenching in compressed MgO nanoparticle systems. Physical Chemistry Chemical Physics, 2014, 16, 8339.	2.8	23
53	Energy and site selectivity in O-atom photodesorption from nanostructured MgO. Surface Science, 2008, 602, 1968-1973.	1.9	22
54	Synthesis of Analogue Structures of the p-Quinone Methide Moiety of Kendomycin. Organic Letters, 2004, 6, 3131-3134.	4.6	20

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55	Surface exciton separation in photoexcited MgO nanocube powders. <i>Nanoscale</i> , 2012, 4, 7494.	5.6	20
56	Adsorption, Ordering, and Metalation of Porphyrins on MgO Nanocube Surfaces: The Directional Role of Carboxylic Anchoring Groups. <i>Journal of Physical Chemistry C</i> , 2016, 120, 26879-26888.	3.1	20
57	Surface color centers as novel hydrogen bond acceptors. <i>Journal of Chemical Physics</i> , 1999, 111, 6668-6670.	3.0	19
58	Changing interfaces: Photoluminescent ZnO nanoparticle powders in different aqueous environments. <i>Surface Science</i> , 2016, 652, 253-260.	1.9	19
59	Hydroxylation Induced Alignment of Metal Oxide Nanocubes. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 1407-1410.	13.8	19
60	Three-Dimensional Electrochemical Axial Lithography on Si Micro- and Nanowire Arrays. <i>Nano Letters</i> , 2018, 18, 7343-7349.	9.1	18
61	Thin water films and particle morphology evolution in nanocrystalline MgO. <i>Journal of the American Ceramic Society</i> , 2018, 101, 4994-5003.	3.8	18
62	Thin water films covering oxide nanomaterials: Stability issues and influences on materials processing. <i>Journal of Materials Research</i> , 2019, 34, 428-441.	2.6	18
63	BaO Clusters on MgO Nanocubes: A Quantitative Analysis of Optical Powder Properties. <i>Small</i> , 2010, 6, 582-588.	10.0	17
64	Synthesis and Aggregation of In ₂ O ₃ Nanoparticles: Impact of Process Parameters on Stoichiometry Changes and Optical Properties. <i>Langmuir</i> , 2013, 29, 6077-6083.	3.5	17
65	Surface-specific visible light luminescence from composite metal oxide nanocrystals. <i>Journal of Materials Science</i> , 2015, 50, 8153-8165.	3.7	17
66	Cubes to Cubes: Organization of MgO Particles into One-Dimensional and Two-Dimensional Nanostructures. <i>Crystal Growth and Design</i> , 2021, 21, 4674-4682.	3.0	17
67	Nanoparticles as a Support: CaO Deposits on MgO Cubes. <i>Journal of Physical Chemistry C</i> , 2008, 112, 9120-9123.	3.1	16
68	Defects in Oxygen-Depleted Titanate Nanostructures. <i>Langmuir</i> , 2012, 28, 7851-7858.	3.5	16
69	Spectroscopic Properties of Trapped Electrons on the Surface of MgO Nanoparticles. <i>ChemPhysChem</i> , 2004, 5, 1695-1703.	2.1	15
70	Ozonide ions on the surface of MgO nanocrystals. <i>Topics in Catalysis</i> , 2007, 46, 111-119.	2.8	15
71	Surface Decoration of MgO Nanocubes with Sulfur Oxides: Experiment and Theory. <i>Journal of Physical Chemistry C</i> , 2013, 117, 7727-7735.	3.1	15
72	Reactive Porphyrin Adsorption on TiO ₂ Anatase Particles: Solvent Assistance and the Effect of Water Addition. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 16836-16842.	8.0	15

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73	When Fewer Photons Do More: A Comparative O_2 Photoadsorption Study on Vapor-Deposited TiO_2 and ZrO_2 Nanocrystal Ensembles. <i>Journal of Physical Chemistry C</i> , 2009, 113, 9175-9181.	3.1	14
74	Defects in Metal Oxide Nanoparticle Powders. <i>Springer Series in Surface Sciences</i> , 2015, , 273-301.	0.3	14
75	Enzyme adsorption-induced activity changes: a quantitative study on TiO_2 model agglomerates. <i>Journal of Nanobiotechnology</i> , 2017, 15, 55.	9.1	14
76	Delamination and Dissolution of Titanate Nanowires: A Combined Structure and in Situ Second Harmonic Generation Study. <i>Journal of Physical Chemistry C</i> , 2011, 115, 12381-12387.	3.1	13
77	Photoexcitation of Local Surface Structures on Strontium Oxide Grains. <i>Journal of Physical Chemistry C</i> , 2007, 111, 8069-8074.	3.1	12
78	Hydration of magnesia cubes: a helium ion microscopy study. <i>Beilstein Journal of Nanotechnology</i> , 2016, 7, 302-309.	2.8	12
79	Concept of the highly strained volume for fatigue modeling of wrought magnesium alloys. <i>International Journal of Fatigue</i> , 2018, 117, 283-291.	5.7	11
80	Catalytic activity, water formation, and sintering: Methane activation over Co- and Fe-doped MgO nanocrystals. <i>Journal of Chemical Physics</i> , 2020, 152, 074713.	3.0	11
81	Bulk and Surface Excitons in Alloyed and Phase-Separated ZnO - MgO Particulate Systems. <i>ACS Applied Materials & Interfaces</i> , 2012, 4, 2490-2497.	8.0	10
82	Stability and Local Environment of Iron in Vapor Phase Grown MgO Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2017, 121, 24292-24301.	3.1	10
83	Iron Precursor Decomposition in the Magnesium Combustion Flame: A New Approach for the Synthesis of Particulate Metal Oxide Nanocomposites. <i>Particle and Particle Systems Characterization</i> , 2017, 34, 1700109.	2.3	10
84	Spontaneous Growth of Magnesium Hydroxide Fibers at Ambient Conditions. <i>Crystal Growth and Design</i> , 2014, 14, 4236-4239.	3.0	9
85	Always cubes: A comparative evaluation of gas phase synthesis methods and precursor selection for the production of MgO nanoparticles. <i>Open Ceramics</i> , 2021, 6, 100104.	2.0	9
86	Biologic effects of nanoparticle-allergen conjugates: time-resolved uptake using an <i>in vitro</i> lung epithelial co-culture model of A549 and THP-1 cells. <i>Environmental Science: Nano</i> , 2018, 5, 2184-2197.	4.3	8
87	Cobalt and Iron Ions in MgO Nanocrystals: Should They Stay or Should They Go. <i>Journal of Physical Chemistry C</i> , 2019, 123, 25991-26004.	3.1	8
88	Thermally Activated Self-metalation of Carboxy-functionalized Porphyrin Films on MgO Nanocubes. <i>ChemPhysChem</i> , 2018, 19, 2272-2280.	2.1	7
89	From Anhydrous Zinc Oxide Nanoparticle Powders to Aqueous Colloids: Impact of Water Condensation and Organic Salt Adsorption on Free Exciton Emission. <i>Langmuir</i> , 2019, 35, 8741-8747.	3.5	7
90	CHAPTER 8. Traps and Interfaces in Photocatalysis: Model Studies on TiO_2 Particle Systems. <i>RSC Energy and Environment Series</i> , 2016, , 185-217.	0.5	7

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91	Thin water films and magnesium hydroxide fiber growth. RSC Advances, 2015, 5, 82564-82569.	3.6	6
92	Impurity Segregation and Nanoparticle Reorganization of Indium Doped MgO Cubes. ChemNanoMat, 2019, 5, 634-641.	2.8	6
93	(Invited) Photoluminescence Properties of Alkaline-Earth Oxide Nanoparticles. ECS Transactions, 2010, 28, 67-80.	0.5	5
94	Exciton Emission and Light-Induced Charge Separation in Colloidal ZnO Nanocrystals. ChemPhotoChem, 2018, 2, 994-1001.	3.0	5
95	Isolated Cobalt Ions Embedded in Magnesium Oxide Nanostructures: Spectroscopic Properties and Redox Activity. Chemistry - A European Journal, 2020, 26, 16049-16056.	3.3	5
96	On the Entangled Growth of NaTaO ₃ Cubes and Na ₂ Ti ₃ O ₇ Wires in Sodium Hydroxide Solution. Chemistry - A European Journal, 2013, 19, 10235-10243.	3.3	4
97	Electronic Reducibility Scales with Intergranular Interface Area in Consolidated In ₂ O ₃ Nanoparticles Powders. Journal of Physical Chemistry C, 2016, 120, 4581-4588.	3.1	4
98	Paramagnetic electron centers in BaTiO ₃ nanoparticle powders. Physical Chemistry Chemical Physics, 2021, 23, 12881-12888.	2.8	4
99	Segregation Engineering in MgO Nanoparticle-Derived Ceramics: The Impact of Calcium and Barium Admixtures on the Microstructure and Light Emission Properties. ACS Applied Materials & Interfaces, 2021, 13, 25493-25502.	8.0	4
100	Photochemical Activity of Nitrogen-Doped Rutile TiO ₂ (110) in Visible Light.. ChemInform, 2004, 35, no.	0.0	3
101	Microstructural investigation of twin-roll cast magnesium AZ31B subjected to a single monotonic compressive stress. Journal of Alloys and Compounds, 2019, 789, 1022-1034.	5.5	3
102	Apparent crystallite domain size growth in metal oxide nanocrystal ensembles: The importance of surface reactivity of powders for processing. Open Ceramics, 2020, 3, 100014.	2.0	3
103	TiO ₂ anatase and rutile grains and the effect of particle printing on porphyrin adsorption. Surface Science, 2022, 722, 122083.	1.9	3
104	Tuning Photoluminescence Properties of Alkaline-earth Oxide Nanoparticles by Site-selective Functionalization and Doping. ECS Transactions, 2009, 25, 131-139.	0.5	2
105	Rubbing Powders: Direct Spectroscopic Observation of Triboinduced Oxygen Radical Formation in MgO Nanocube Ensembles. Journal of Physical Chemistry C, 2021, 125, 22239-22248.	3.1	2
106	UV induced surface reactions on MgO nanoparticles. Radiation Effects and Defects in Solids, 2001, 156, 123-128.	1.2	0
107	Partikel-Morphologien und Festkörpereigenschaften. Gestalten in der Nanowelt. Chemie in Unserer Zeit, 2009, 43, 84-92.	0.1	0
108	Organisation von Metalloxid-Nanowürfeln durch Hydroxylierung. Angewandte Chemie, 2017, 129, 1428-1432.	2.0	0