

Matteo Cargnello

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

123
papers

8,689
citations

45
h-index

92
g-index

129
ext. papers

10,335
ext. citations

13.1
avg, IF

6.32
L-index

#	Paper	IF	Citations
123	Sulfur-treated TiO shows improved alcohol dehydration activity and selectivity.. <i>Nanoscale</i> , 2022 , 14, 2848-2858	7.7	0
122	Colloidal Platinum-Copper Nanocrystal Alloy Catalysts Surpass Platinum in Low-Temperature Propene Combustion.. <i>Journal of the American Chemical Society</i> , 2022 ,	16.4	2
121	Microkinetic Modeling of Propene Combustion on a Stepped, Metallic Palladium Surface and the Importance of Oxygen Coverage. <i>ACS Catalysis</i> , 2022 , 12, 1742-1757	13.1	2
120	Steering CO hydrogenation toward C-C coupling to hydrocarbons using porous organic polymer/metal interfaces.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022 , 119,	11.5	6
119	Voltage cycling process for the electroconversion of biomass-derived polyols. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	6
118	Rationalizing an Unexpected Structure Sensitivity in Heterogeneous Catalysis: CO Hydrogenation over Rh as a Case Study. <i>ACS Catalysis</i> , 2021 , 11, 5189-5201	13.1	2
117	Support Acidity Improves Pt Activity in Propane Combustion in the Presence of Steam by Reducing Water Coverage on the Active Sites. <i>ACS Catalysis</i> , 2021 , 11, 6672-6683	13.1	2
116	Size-controlled nanocrystals reveal spatial dependence and severity of nanoparticle coalescence and Ostwald ripening in sintering phenomena. <i>Nanoscale</i> , 2021 , 13, 930-938	7.7	8
115	A General Approach for Monolayer Adsorption of High Weight Loadings of Uniform Nanocrystals on Oxide Supports. <i>Angewandte Chemie - International Edition</i> , 2021 , 60, 7971-7979	16.4	0
114	A General Approach for Monolayer Adsorption of High Weight Loadings of Uniform Nanocrystals on Oxide Supports. <i>Angewandte Chemie</i> , 2021 , 133, 8050-8058	3.6	1
113	Monolayer Support Control and Precise Colloidal Nanocrystals Demonstrate Metal-Support Interactions in Heterogeneous Catalysts. <i>Advanced Materials</i> , 2021 , 33, e2104533	24	4
112	Insights and comparison of structure-property relationships in propane and propene catalytic combustion on Pd- and Pt-based catalysts. <i>Journal of Catalysis</i> , 2021 , 401, 89-101	7.3	4
111	Atmospheric methane removal: a research agenda. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2021 , 379, 20200454	3	10
110	Steam-created grain boundaries for methane C-H activation in palladium catalysts. <i>Science</i> , 2021 , 373, 1518-1523	33.3	15
109	Reducing instability in dispersed powder photocatalysis derived from variable dispersion, metallic co-catalyst morphology, and light fluctuations. <i>Journal of Photochemistry and Photobiology</i> , 2020 , 2, 1000004	0.8	0
108	Quantitative 3D Characterization of Novel Polymer-nanocrystal Hybrid Catalysts by Electron Tomography. <i>Microscopy and Microanalysis</i> , 2020 , 26, 1136-1137	0.5	
107	Chemically Controllable Porous Polymer-Nanocrystal Composites with Hierarchical Arrangement Show Substrate Transport Selectivity. <i>Chemistry of Materials</i> , 2020 , 32, 5904-5915	9.6	1

106	Revealing the structure of a catalytic combustion active-site ensemble combining uniform nanocrystal catalysts and theory insights. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020 , 117, 14721-14729	11.5	10
105	Formic acid oxidation boosted by Rh single atoms. <i>Nature Nanotechnology</i> , 2020 , 15, 346-347	28.7	7
104	Enhanced Catalytic Activity for Methane Combustion through in Situ Water Sorption. <i>ACS Catalysis</i> , 2020 , 10, 8157-8167	13.1	19
103	Nanoparticle diffusion during gelation of tetra poly(ethylene glycol) provides insight into nanoscale structural evolution. <i>Soft Matter</i> , 2020 , 16, 2256-2265	3.6	7
102	Electrolyte Engineering for Efficient Electrochemical Nitrate Reduction to Ammonia on a Titanium Electrode. <i>ACS Sustainable Chemistry and Engineering</i> , 2020 , 8, 2672-2681	8.3	88
101	Determining number of sites on ceria stabilizing single atoms via metal nanoparticle redispersion. <i>Chinese Journal of Catalysis</i> , 2020 , 41, 998-1005	11.3	8
100	A Combined Theory-Experiment Analysis of the Surface Species in Lithium-Mediated NH ₃ Electrosynthesis. <i>ChemElectroChem</i> , 2020 , 7, 1513-1513	4.3	0
99	Reply to: Practical constraints on atmospheric methane removal. <i>Nature Sustainability</i> , 2020 , 3, 358-359	22.1	3
98	Investigation of the optical properties of uniform platinum, palladium, and nickel nanocrystals enables direct measurements of their concentrations in solution. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2020 , 601, 125007	5.1	2
97	A Combined Theory-Experiment Analysis of the Surface Species in Lithium-Mediated NH ₃ Electrosynthesis. <i>ChemElectroChem</i> , 2020 , 7, 1542-1549	4.3	34
96	Dilute Pd/Au Alloys Replace Au/TiO ₂ Interface for Selective Oxidation Reactions. <i>ACS Catalysis</i> , 2020 , 10, 1716-1720	13.1	5
95	Local Structural Distortions and Failure of the Surface-Stress Core-Shell Model in Brookite Titania Nanorods. <i>Chemistry of Materials</i> , 2020 , 32, 286-298	9.6	2
94	Readily Constructed Glass Piston Pump for Gas Recirculation. <i>ACS Omega</i> , 2020 , 5, 16455-16459	3.9	3
93	A phytophotonic approach to enhanced photosynthesis. <i>Energy and Environmental Science</i> , 2020 , 13, 4794-4807	35.4	0
92	Dynamics of Copper-Containing Porous Organic Framework Catalysts Reveal Catalytic Behavior Controlled by the Polymer Structure. <i>ACS Catalysis</i> , 2020 , 10, 9356-9365	13.1	2
91	Nanoscale Spatial Distribution of Supported Nanoparticles Controls Activity and Stability in Powder Catalysts for CO Oxidation and Photocatalytic H ₂ Evolution. <i>Journal of the American Chemical Society</i> , 2020 , 142, 14481-14494	16.4	12
90	Design of Organic/Inorganic Hybrid Catalysts for Energy and Environmental Applications. <i>ACS Central Science</i> , 2020 , 6, 1916-1937	16.8	14
89	Insight into restructuring of Pd-Au nanoparticles using EXAFS. <i>Radiation Physics and Chemistry</i> , 2020 , 175, 108304	2.5	4

88	A rigorous electrochemical ammonia synthesis protocol with quantitative isotope measurements. <i>Nature</i> , 2019 , 570, 504-508	50.4	617
87	A Versatile Method for Ammonia Detection in a Range of Relevant Electrolytes via Direct Nuclear Magnetic Resonance Techniques. <i>ACS Catalysis</i> , 2019 , 9, 5797-5802	13.1	54
86	General Self-Assembly Method for Deposition of Graphene Oxide into Uniform Close-Packed Monolayer Films. <i>Langmuir</i> , 2019 , 35, 4460-4470	4	7
85	Modular Pd/Zeolite Composites Demonstrating the Key Role of Support Hydrophobic/Hydrophilic Character in Methane Catalytic Combustion. <i>ACS Catalysis</i> , 2019 , 9, 4742-4753	13.1	47
84	Artificial inflation of apparent photocatalytic activity induced by catalyst-mass-normalization and a method to fairly compare heterojunction systems. <i>Energy and Environmental Science</i> , 2019 , 12, 1657-1667	35.4	18
83	Supported Catalyst Deactivation by Decomposition into Single Atoms Is Suppressed by Increasing Metal Loading. <i>Nature Catalysis</i> , 2019 , 2,	36.5	99
82	Transition state and product diffusion control by polymer/nanocrystal hybrid catalysts. <i>Nature Catalysis</i> , 2019 , 2, 852-863	36.5	41
81	Strategies toward Selective Electrochemical Ammonia Synthesis. <i>ACS Catalysis</i> , 2019 , 9, 8316-8324	13.1	88
80	Block-Co-polymer-Assisted Synthesis of All Inorganic Highly Porous Heterostructures with Highly Accessible Thermally Stable Functional Centers. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 30154-30162	9.5	15
79	Engineering of Ruthenium-Iron Oxide Colloidal Heterostructures: Improved Yields in CO Hydrogenation to Hydrocarbons. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 17451-17457	16.4	28
78	Engineering of Ruthenium-Iron Oxide Colloidal Heterostructures: Improved Yields in CO ₂ Hydrogenation to Hydrocarbons. <i>Angewandte Chemie</i> , 2019 , 131, 17612-17618	3.6	4
77	Palladium oxidation leads to methane combustion activity: Effects of particle size and alloying with platinum. <i>Journal of Chemical Physics</i> , 2019 , 151, 154703	3.9	17
76	Colloidal nanocrystals for heterogeneous catalysis. <i>Nano Today</i> , 2019 , 24, 15-47	17.9	68
75	Colloidal Nanocrystals as Building Blocks for Well-Defined Heterogeneous Catalysts. <i>Chemistry of Materials</i> , 2019 , 31, 576-596	9.6	44
74	Probing Atomic Distributions in Mono- and Bimetallic Nanoparticles by Supervised Machine Learning. <i>Nano Letters</i> , 2019 , 19, 520-529	11.5	54
73	Synthesis, Characterization, and Light-Induced Spatial Charge Separation in Janus Graphene Oxide. <i>Chemistry of Materials</i> , 2018 , 30, 2084-2092	9.6	13
72	Tuning Precursor Reactivity toward Nanometer-Size Control in Palladium Nanoparticles Studied by in Situ Small Angle X-ray Scattering. <i>Chemistry of Materials</i> , 2018 , 30, 1127-1135	9.6	36
71	Formic Acid Dehydrogenation: Phosphides Strike Again. <i>Joule</i> , 2018 , 2, 379-380	27.8	3

70	Photocatalytic Hydrogen Evolution from Substoichiometric Colloidal WO ₃ x Nanowires. <i>ACS Energy Letters</i> , 2018 , 3, 1904-1910	20.1	109
69	Deconvoluting Transient Water Effects on the Activity of Pd Methane Combustion Catalysts. <i>Industrial & Engineering Chemistry Research</i> , 2018 , 57, 10261-10268	3.9	26
68	Langmuir-Blodgett Deposition of Graphene Oxide-Identifying Marangoni Flow as a Process that Fundamentally Limits Deposition Control. <i>Langmuir</i> , 2018 , 34, 9683-9691	4	14
67	Low-Temperature Methane Partial Oxidation to Syngas with Modular Nanocrystal Catalysts. <i>ACS Applied Nano Materials</i> , 2018 , 1, 5258-5267	5.6	13
66	Low-Temperature Restructuring of CeO-Supported Ru Nanoparticles Determines Selectivity in CO Catalytic Reduction. <i>Journal of the American Chemical Society</i> , 2018 , 140, 13736-13745	16.4	127
65	Synthesis of Colloidal Pd/Au Dilute Alloy Nanocrystals and Their Potential for Selective Catalytic Oxidations. <i>Journal of the American Chemical Society</i> , 2018 , 140, 12930-12939	16.4	64
64	In Situ X-ray Scattering Guides the Synthesis of Uniform PtSn Nanocrystals. <i>Nano Letters</i> , 2018 , 18, 4053-4057	11.5	25
63	Understanding the preferential oxidation of carbon monoxide (PrOx) using size-controlled Au nanocrystal catalyst. <i>AIChE Journal</i> , 2018 , 64, 3159-3167	3.6	13
62	Hierarchical Materials Design by Pattern Transfer Printing of Self-Assembled Binary Nanocrystal Superlattices. <i>Nano Letters</i> , 2017 , 17, 1387-1394	11.5	37
61	Engineering Localized Surface Plasmon Interactions in Gold by Silicon Nanowire for Enhanced Heating and Photocatalysis. <i>Nano Letters</i> , 2017 , 17, 1839-1845	11.5	43
60	Uniform Pt/Pd Bimetallic Nanocrystals Demonstrate Platinum Effect on Palladium Methane Combustion Activity and Stability. <i>ACS Catalysis</i> , 2017 , 7, 4372-4380	13.1	87
59	Electrochemical Ammonia Synthesis—the Selectivity Challenge. <i>ACS Catalysis</i> , 2017 , 7, 706-709	13.1	442
58	Systematic Structure-Property Relationship Studies in Palladium-Catalyzed Methane Complete Combustion. <i>ACS Catalysis</i> , 2017 , 7, 7810-7821	13.1	110
57	Mechanistic Understanding and the Rational Design of Sinter-Resistant Heterogeneous Catalysts. <i>ACS Catalysis</i> , 2017 , 7, 7156-7173	13.1	151
56	High-temperature crystallization of nanocrystals into three-dimensional superlattices. <i>Nature</i> , 2017 , 548, 197-201	50.4	68
55	Nanorod Mobility Influences Polymer Diffusion in Polymer Nanocomposites. <i>ACS Macro Letters</i> , 2017 , 6, 869-874	6.6	10
54	Systematic Identification of Promoters for Methane Oxidation Catalysts Using Size- and Composition-Controlled Pd-Based Bimetallic Nanocrystals. <i>Journal of the American Chemical Society</i> , 2017 , 139, 11989-11997	16.4	81
53	Opportunities and Challenges in the Synthesis, Characterization, and Catalytic Properties of Controlled Nanostructures. <i>Studies in Surface Science and Catalysis</i> , 2017 , 177, 1-56	1.8	0

52	Ammonia synthesis from N ₂ and H ₂ O using a lithium cycling electrification strategy at atmospheric pressure. <i>Energy and Environmental Science</i> , 2017 , 10, 1621-1630	35.4	236
51	Shape-dependence of the thermal and photochemical reactions of methanol on nanocrystalline anatase TiO ₂ . <i>Surface Science</i> , 2016 , 654, 1-7	1.8	20
50	Dynamical Observation and Detailed Description of Catalysts under Strong Metal-Support Interaction. <i>Nano Letters</i> , 2016 , 16, 4528-34	11.5	160
49	Engineering uniform nanocrystals: Mechanism of formation and self-assembly into bimetallic nanocrystal superlattices. <i>AIChE Journal</i> , 2016 , 62, 392-398	3.6	18
48	Co-axial heterostructures integrating palladium/titanium dioxide with carbon nanotubes for efficient electrocatalytic hydrogen evolution. <i>Nature Communications</i> , 2016 , 7, 13549	17.4	76
47	Elucidating the synergistic mechanism of nickel-molybdenum electrocatalysts for the hydrogen evolution reaction. <i>MRS Communications</i> , 2016 , 6, 241-246	2.7	15
46	Engineering titania nanostructure to tune and improve its photocatalytic activity. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 3966-71	11.5	86
45	Revealing particle growth mechanisms by combining high-surface-area catalysts made with monodisperse particles and electron microscopy conducted at atmospheric pressure. <i>Journal of Catalysis</i> , 2016 , 337, 240-247	7.3	28
44	Polycatenar Ligand Control of the Synthesis and Self-Assembly of Colloidal Nanocrystals. <i>Journal of the American Chemical Society</i> , 2016 , 138, 10508-15	16.4	17
43	Dynamic structural evolution of supported palladium-ceria core-shell catalysts revealed by in situ electron microscopy. <i>Nature Communications</i> , 2015 , 6, 7778	17.4	83
42	Thermal and photochemical reactions of methanol on nanocrystalline anatase TiO ₂ thin films. <i>Physical Chemistry Chemical Physics</i> , 2015 , 17, 17190-201	3.6	22
41	Structure, morphology and catalytic properties of pure and alloyed AuZnO hierarchical nanostructures. <i>RSC Advances</i> , 2015 , 5, 41920-41922	3.7	5
40	Efficient removal of organic ligands from supported nanocrystals by fast thermal annealing enables catalytic studies on well-defined active phases. <i>Journal of the American Chemical Society</i> , 2015 , 137, 6906-11	16.4	156
39	Uniform Bimetallic Nanocrystals by High-Temperature Seed-Mediated Colloidal Synthesis and Their Catalytic Properties for Semiconducting Nanowire Growth. <i>Chemistry of Materials</i> , 2015 , 27, 5833-5838	9.6	23
38	Dendron-Mediated Engineering of Interparticle Separation and Self-Assembly in Dendronized Gold Nanoparticles Superlattices. <i>Journal of the American Chemical Society</i> , 2015 , 137, 10728-34	16.4	41
37	Fast Nanorod Diffusion through Entangled Polymer Melts. <i>ACS Macro Letters</i> , 2015 , 4, 952-956	6.6	25
36	Substitutional doping in nanocrystal superlattices. <i>Nature</i> , 2015 , 524, 450-3	50.4	133
35	Quantifying "Softness" of Organic Coatings on Gold Nanoparticles Using Correlated Small-Angle X-ray and Neutron Scattering. <i>Nano Letters</i> , 2015 , 15, 8008-12	11.5	34

34	In-situ Study of Coarsening Mechanisms of Supported Metal Particles in Reducing Gas. <i>Microscopy and Microanalysis</i> , 2015 , 21, 643-644	0.5	
33	A comparison of hierarchical Pt@CeO ₂ /SiAl ₂ O ₃ and Pd@CeO ₂ /SiAl ₂ O ₃ . <i>Catalysis Today</i> , 2015 , 253, 137-141	5.3	7
32	Synergistic oxygen evolving activity of a TiO ₂ -rich reconstructed SrTiO ₃ (001) surface. <i>Journal of the American Chemical Society</i> , 2015 , 137, 2939-47	16.4	55
31	Tailoring photocatalytic nanostructures for sustainable hydrogen production. <i>Nanoscale</i> , 2014 , 6, 97-105	7.7	28
30	Enhanced energy transfer in quasi-quaternary nanocrystal superlattices. <i>Advanced Materials</i> , 2014 , 26, 2419-23	24	21
29	Au@TiO ₂ Core-shell Nanostructures with High Thermal Stability. <i>Catalysis Letters</i> , 2014 , 144, 1939-1945	2.8	13
28	Supported platinum-zinc oxide core-shell nanoparticle catalysts for methanol steam reforming. <i>Journal of Materials Chemistry A</i> , 2014 , 2, 19509-19514	13	27
27	Solution-phase synthesis of titanium dioxide nanoparticles and nanocrystals. <i>Chemical Reviews</i> , 2014 , 114, 9319-45	68.1	291
26	Methane Oxidation on ₂ /SiAl ₂ O ₃ Is Enhanced by Surface Reduction of ZrO ₂ . <i>ACS Catalysis</i> , 2014 , 4, 3902-3909	13.1	96
25	A Model to Determine the Chemical Expansion in Non-Stoichiometric Oxides Based on the Elastic Force Dipole. <i>Journal of the Electrochemical Society</i> , 2014 , 161, F3060-F3064	3.9	8
24	X-ray mapping of nanoparticle superlattice thin films. <i>ACS Nano</i> , 2014 , 8, 12843-50	16.7	18
23	Synthesis and Stability of ₂ Core-shell Catalyst Films in Solid Oxide Fuel Cell Anodes. <i>ACS Catalysis</i> , 2013 , 3, 1801-1809	13.1	82
22	CORE-SHELL-TYPE MATERIALS BASED ON CERIA. <i>Catalytic Science Series</i> , 2013 , 361-396	0.4	1
21	High-temperature calcination improves the catalytic properties of alumina-supported Pd@ceria prepared by self assembly. <i>Journal of Catalysis</i> , 2013 , 306, 109-115	7.3	29
20	Control of metal nanocrystal size reveals metal-support interface role for ceria catalysts. <i>Science</i> , 2013 , 341, 771-3	33.3	916
19	Alcohol induced ultra-fine dispersion of Pt on tuned morphologies of CeO ₂ for CO oxidation. <i>Applied Catalysis B: Environmental</i> , 2013 , 130-131, 121-131	21.8	35
18	Playing with structures at the nanoscale: designing catalysts by manipulation of clusters and nanocrystals as building blocks. <i>ChemPhysChem</i> , 2013 , 14, 3869-77	3.2	24
17	Exceptional thermal stability of Pd@CeO ₂ core-shell catalyst nanostructures grafted onto an oxide surface. <i>Nano Letters</i> , 2013 , 13, 2252-7	11.5	90

16	Heterogeneous catalysts need not be so "heterogeneous": monodisperse Pt nanocrystals by combining shape-controlled synthesis and purification by colloidal recrystallization. <i>Journal of the American Chemical Society</i> , 2013 , 135, 2741-7	16.4	93
15	A versatile route to core-shell catalysts: synthesis of dispersible M@oxide (M=Pd, Pt; oxide=TiO ₂ , ZrO ₂) nanostructures by self-assembly. <i>ChemSusChem</i> , 2012 , 5, 140-8	8.3	65
14	Exceptional activity for methane combustion over modular Pd@CeO ₂ subunits on functionalized Al ₂ O ₃ . <i>Science</i> , 2012 , 337, 713-7	33.3	665
13	Opportunities for Tailoring Catalytic Properties Through Metal-Support Interactions. <i>Catalysis Letters</i> , 2012 , 142, 1043-1048	2.8	52
12	Photocatalysis by Nanostructured TiO ₂ -based Semiconductors 2012 , 89		1
11	Multiwalled carbon nanotubes drive the activity of metal@oxide core-shell catalysts in modular nanocomposites. <i>Journal of the American Chemical Society</i> , 2012 , 134, 11760-6	16.4	97
10	Nonaqueous synthesis of TiO ₂ nanocrystals using TiF ₄ to engineer morphology, oxygen vacancy concentration, and photocatalytic activity. <i>Journal of the American Chemical Society</i> , 2012 , 134, 6751-61	16.4	745
9	Study of the Water-Gas-Shift Reaction on [email[protected]] ₂ /Al ₂ O ₃ Core-Shell Catalysts <i>Journal of Physical Chemistry C</i> , 2011 , 115, 915-919	3.8	60
8	A Versatile Approach to the Synthesis of Functionalized Thiol-Protected Palladium Nanoparticles. <i>Chemistry of Materials</i> , 2011 , 23, 3961-3969	9.6	86
7	Photocatalytic H ₂ and Added-Value By-Products <i>The Role of Metal Oxide Systems in Their Synthesis from Oxygenates. European Journal of Inorganic Chemistry</i> , 2011 , 2011, 4309-4323	2.3	114
6	Highly Active and Thermally Stable Core-Shell Catalysts for Solid Oxide Fuel Cells. <i>Journal of the Electrochemical Society</i> , 2011 , 158, B596	3.9	48
5	Synthesis of dispersible Pd@CeO(2) core-shell nanostructures by self-assembly. <i>Journal of the American Chemical Society</i> , 2010 , 132, 1402-9	16.4	191
4	Active and Stable Embedded [email[protected]] ₂ Catalysts for Preferential Oxidation of CO. <i>Chemistry of Materials</i> , 2010 , 22, 4335-4345	9.6	85
3	Novel embedded Pd@CeO(2) catalysts: a way to active and stable catalysts. <i>Dalton Transactions</i> , 2010 , 39, 2122-7	4.3	72
2	CuO(x)-TiO ₂ photocatalysts for H ₂ production from ethanol and glycerol solutions. <i>Journal of Physical Chemistry A</i> , 2010 , 114, 3916-25	2.8	218
1	Embedded phases: a way to active and stable catalysts. <i>ChemSusChem</i> , 2010 , 3, 24-42	8.3	219