Wenpei Gao

List of Publications by Year
in descending order

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Version: 2024-02-01

69 papers	3,803 citations	201674 27 h-index	155660 55 g-index
69 all docs	69 docs citations	69 times ranked	6312 citing authors

#	Article	IF	Citations
1	Intercorrelated In-Plane and Out-of-Plane Ferroelectricity in Ultrathin Two-Dimensional Layered Semiconductor In₂Se₃. Nano Letters, 2018, 18, 1253-1258.	9.1	509
2	Freestanding crystalline oxide perovskites down to the monolayer limit. Nature, 2019, 570, 87-90.	27.8	398
3	Tunable intrinsic strain in two-dimensional transition metal electrocatalysts. Science, 2019, 363, 870-874.	12.6	384
4	Surface-Engineered PtNi-O Nanostructure with Record-High Performance for Electrocatalytic Hydrogen Evolution Reaction. Journal of the American Chemical Society, 2018, 140, 9046-9050.	13.7	379
5	2D metalâ€“organic framework for stable perovskite solar cells with minimized lead leakage. Nature Nanotechnology, 2020, 15, 934-940.	31.5	258
6	Interfaces in Heterogeneous Catalysts: Advancing Mechanistic Understanding through Atomic-Scale Measurements. Accounts of Chemical Research, 2017, 50, 787-795.	15.6	128
7	Real-space charge-density imaging with sub-Ã¥ngstrÃ¶m resolution by four-dimensional electron microscopy. Nature, 2019, 575, 480-484.	27.8	127
8	Growth of Au on Pt Icosahedral Nanoparticles Revealed by Low-Dose In Situ TEM. Nano Letters, 2015, 15, 2711-2715.	9.1	106
9	Platinumâ€Based Nanowires as Active Catalysts toward Oxygen Reduction Reaction: In Situ Observation of Surfaceâ€Diffusionâ€Assisted, Solidâ€State Oriented Attachment. Advanced Materials, 2017, 29, 1703460.	21.0	102
10	Nanoscale kinetics of asymmetrical corrosion in core-shell nanoparticles. Nature Communications, 2018, 9, 1011.	12.8	87
11	Dissolution Kinetics of Oxidative Etching of Cubic and Icosahedral Platinum Nanoparticles Revealed by in Situ Liquid Transmission Electron Microscopy. ACS Nano, 2017, 11, 1696-1703.	14.6	84
12	Neighboring Pt Atom Sites in an Ultrathin FePt Nanosheet for the Efficient and Highly CO-Tolerant Oxygen Reduction Reaction. Nano Letters, 2018, 18, 5905-5912.	9.1	84
13	An Ionâ€Exchange Promoted Phase Transition in a Liâ€Excess Layered Cathode Material for Highâ€Performance Lithium Ion Batteries. Advanced Energy Materials, 2015, 5, 1401937.	19.5	82
14	Differential Surface Elemental Distribution Leads to Significantly Enhanced Stability of PtNi-Based ORR Catalysts. Matter, 2019, 1, 1567-1580.	10.0	82
15	Lattice and strain analysis of atomic resolution Z-contrast images based on template matching. Ultramicroscopy, 2014, 136, 50-60.	1.9	80
16	Coreâ€“Shell Nanostructured Cobaltâ€“Platinum Electrocatalysts with Enhanced Durability. ACS Catalysis, 2018, 8, 35-42.	11.2	72
17	Revealing Surface Elemental Composition and Dynamic Processes Involved in Facet-Dependent Oxidation of Pt₃Co Nanoparticles via in Situ Transmission Electron Microscopy. Nano Letters, 2017, 17, 4683-4688.	9.1	71
18	Tailoring a Three-Phase Microenvironment for High-Performance Oxygen Reduction Reaction in Proton Exchange Membrane Fuel Cells. Matter, 2020, 3, 1774-1790.	10.0	71

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19	Sub-10-nm graphene nanoribbons with atomically smooth edges from squashed carbon nanotubes. Nature Electronics, 2021, 4, 653-663.	26.0	61
20	Strong electrostatic adsorption approach to the synthesis of sub-three nanometer intermetallic platinumâ€“cobalt oxygen reduction catalysts. Nano Energy, 2021, 79, 105465.	16.0	59
21	Strong Electronic Interaction of Amorphous Fe₂O₃ Nanosheets with Singleâ€Atom Pt toward Enhanced Carbon Monoxide Oxidation. Advanced Functional Materials, 2019, 29, 1904278.	14.9	51
22	Strain-Induced Corrosion Kinetics at Nanoscale Are Revealed in Liquid: Enabling Control of Corrosion Dynamics of Electrocatalysis. CheM, 2020, 6, 2257-2271.	11.7	48
23	Deterministic, Reversible, and Nonvolatile Low-Voltage Writing of Magnetic Domains in Epitaxial BaTiO₃/Fe₃O₄ Heterostructure. ACS Nano, 2018, 12, 9558-9567.	14.6	43
24	Direct in Situ Observation and Analysis of the Formation of Palladium Nanocrystals with High-Index Facets. Nano Letters, 2018, 18, 7004-7013.	9.1	42
25	Large Negative-Thermal-Quenching Effect in Phonon-Induced Light Emissions in Mn⁴⁺-Activated Fluoride Phosphor for Warm-White Light-Emitting Diodes. ACS Omega, 2018, 3, 13704-13710.	3.5	41
26	Probing the dynamics of nanoparticle formation from a precursor at atomic resolution. Science Advances, 2019, 5, eaau9590.	10.3	40
27	Direct observation of elemental fluctuation and oxygen octahedral distortion-dependent charge distribution in high entropy oxides. Nature Communications, 2022, 13, 2358.	12.8	35
28	Direct Observation of Interfacial Au Atoms on TiO₂ in Three Dimensions. Nano Letters, 2015, 15, 2548-2554.	9.1	26
29	Tuning Fe concentration in epitaxial gallium ferrite thin films for room temperature multiferroic properties. Acta Materialia, 2018, 145, 488-495.	7.9	26
30	Transmission electron microscopy with atomic resolution under atmospheric pressures. MRS Communications, 2017, 7, 798-812.	1.8	24
31	Engineering Temperatureâ€Dependent Carrier Concentration in Bulk Composite Materials via Temperatureâ€Dependent Fermi Level Offset. Advanced Energy Materials, 2018, 8, 1701623.	19.5	21
32	Structures and electronic properties of domain walls in BiFeO3 thin films. National Science Review, 2019, 6, 669-683.	9.5	18
33	Atomistic insights into the nucleation and growth of platinum on palladium nanocrystals. Nature Communications, 2021, 12, 3215.	12.8	18
34	Fast Proton Insertion in Layered H₂W₂O₇ via Selective Etching of an Aurivillius Phase. Advanced Energy Materials, 2021, 11, .	19.5	16
35	Interaction of nanometer-sized gold nanocrystals with rutile (110) surface steps revealed at atomic resolution. Surface Science, 2014, 625, 16-22.	1.9	15
36	Thickness and defocus dependence of inter-atomic electric fields measured by scanning diffraction. Ultramicroscopy, 2020, 208, 112850.	1.9	14

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37	Stretchable and Multi-Metalâ€“Organic Framework Fabrics Via High-Yield Rapid Sorption-Vapor Synthesis and Their Application in Chemical Warfare Agent Hydrolysis. ACS Applied Materials & Interfaces, 2021, 13, 31279-31284.	8.0	13
38	Boosting phonon-induced luminescence in red fluoride phosphorsviacomposition-driven structural transformations. Journal of Materials Chemistry C, 2017, 5, 12105-12111.	5.5	11
39	Crystallinity after decarboxylation of a metalâ€“carboxylate framework: indestructible porosity for catalysis. Dalton Transactions, 2020, 49, 11902-11910.	3.3	10
40	Imaging Shape-Dependent Corrosion Behavior of Pt Nanoparticles over Extended Time Using a Liquid Flow Cell and TEM. Microscopy and Microanalysis, 2014, 20, 1508-1509.	0.4	9
41	Dynamics of Transformation from Platinum Icosahedral Nanoparticles to Larger FCC Crystal at Millisecond Time Resolution. Scientific Reports, 2017, 7, 17243.	3.3	9
42	From ion to atom to dendrite: Formation and nanomechanical behavior of electrodeposited lithium. MRS Bulletin, 2020, 45, 891-904.	3.5	9
43	In situ RHEED study of epitaxial gold nanocrystals on TiO2 (110) surfaces. Applied Surface Science, 2013, 270, 661-666.	6.1	8
44	Atomic resolution tomography reconstruction of tilt series based on a GPU accelerated hybrid inputâ€“output algorithm using polar Fourier transform. Ultramicroscopy, 2015, 149, 64-73.	1.9	6
45	AutoDisk: Automated diffraction processing and strain mapping in 4D-STEM. Ultramicroscopy, 2022, 236, 113513.	1.9	5
46	A kinetic Monte Carlo study of coarsening resistance of novel core/shell precipitates. Acta Materialia, 2014, 79, 37-46.	7.9	4
47	Self-assembling epitaxial growth of a single crystalline CoFe₂O₄ nanopillar array via dual-target pulsed laser deposition. Journal of Materials Chemistry C, 2018, 6, 4854-4860.	5.5	4
48	Polarization fluctuation of BaTiO3 at unit cell level mapped by four-dimensional scanning transmission electron microscopy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, 013205.	2.1	4
49	In situ Atmospheric Transmission Electron Microscopy of Catalytic Nanomaterials. MRS Advances, 2018, 3, 2297-2303.	0.9	2
50	In Situ Observations of the Dynamics of Pd@Pt Core-Shell Nanoparticles in Electrolyte. Microscopy and Microanalysis, 2021, 27, 234-236.	0.4	2
51	Oxidation of Fe Whiskers and Surface Diffusion Observed by Environmental TEM. Microscopy and Microanalysis, 2014, 20, 1864-1865.	0.4	1
52	In situ Cathodoluminescence and Monitoring Electronic Structure Change Using Optical TEM Holder. Microscopy and Microanalysis, 2019, 25, 2302-2303.	0.4	1
53	In Situ Observations of Abnormal Pore Size Changes of a Zirconium Based Metal-Organic Framework Using Atomic Resolution S/TEM and EELS. Microscopy and Microanalysis, 2019, 25, 1486-1487.	0.4	1
54	Multiscale Electric Field Imaging of Vortices in PbTiO3-SrTiO3 Superlattice. Microscopy and Microanalysis, 2020, 26, 466-468.	0.4	1

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55	Phase transition and atomic scale dynamics in chemical reactions revealed in the solid state by electron microscopy. Microscopy and Microanalysis, 2021, 27, 2210-2211.	0.4	1
56	Measurement of Local Atomic Displacements Reveals Interaction of Au Nanocrystals with Rutile (TiO2) Surface Steps. Microscopy and Microanalysis, 2014, 20, 1072-1073.	0.4	0
57	Surface Atomic Diffusion Processes Observed at Milliseconds Time Resolution using Environmental TEM. Microscopy and Microanalysis, 2014, 20, 1590-1591.	0.4	0
58	Materials Processes Observed using Dynamical Environmental TEM at University of Illinois. Microscopy and Microanalysis, 2015, 21, 2323-2324.	0.4	0
59	Direct Observation of Interfacial Au atoms Using STEM Depth Sectioning. Microscopy and Microanalysis, 2015, 21, 2417-2418.	0.4	0
60	In Situ Observation of Pt Icosahedral Nanoparticles Transformation into FCC Single Crystal. Microscopy and Microanalysis, 2016, 22, 766-767.	0.4	0
61	Evolution of Au 25 (SR)18 Nanoclusters on Ceria Surfaces during in situ Electron Beam Irradiation. Microscopy and Microanalysis, 2016, 22, 1278-1279.	0.4	0
62	In situ Study of Dynamics of CuAu Alloy Nanoparticles on Oxide Supports. Microscopy and Microanalysis, 2017, 23, 954-955.	0.4	0
63	Calculation of the Electric Field Based on Average Momentum Transfer Using Pixelated Electron Detector in STEM. Microscopy and Microanalysis, 2017, 23, 2104-2105.	0.4	0
64	Combined In Situ and Ex Situ Study on Synthesis of Nanostructured Catalyst in Solid State. Microscopy and Microanalysis, 2018, 24, 288-289.	0.4	0
65	Transmission Electron Microscopy of Catalytic Nanomaterials at Atomic Resolution. Microscopy and Microanalysis, 2019, 25, 2054-2055.	0.4	0
66	Measuring Charge State at the Single-Atomic-Column-Base with Four-Dimensional Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2019, 25, 16-17.	0.4	0
67	Charge Density Mapping via Scanning Diffraction in Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2019, 25, 18-19.	0.4	0
68	Polarization in Ferroelectric BiFeO3 Imaged in 3D Using Four-dimensional Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2020, 26, 1132-1134.	0.4	0
69	Characterization of nanomaterials dynamics with transmission electron microscope. , 2022, , .		0