Wen-Wei Wu

List of Publications by Citations

138 papers	4,171 citations	33 h-index	60 g-index
147 ext. papers	4,782 ext. citations	8.9 avg, IF	5.45 L-index

#	Paper	IF	Citations
138	Observation of atomic diffusion at twin-modified grain boundaries in copper. *Science*, **2008**, 321, 1066-9	33.3	286
137	High Mobility MoS Transistor with Low Schottky Barrier Contact by Using Atomic Thick h-BN as a Tunneling Layer. *Advanced Materials*, **2016**, 28, 8302-8308	24	282
136	Dynamic evolution of conducting nanofilament in resistive switching memories. *Nano Letters*, **2013**, 13, 3671-7	11.5	266
135	Interface engineering for high-performance top-gated MoS2 field-effect transistors. *Advanced Materials*, **2014**, 26, 6255-61	24	227
134	Single crystalline PtSi nanowires, PtSi/Si/PtSi nanowire heterostructures, and nanodevices. *Nano Letters*, **2008**, 8, 913-8	11.5	156
133	Flexible ferroelectric element based on van der Waals heteroepitaxy. *Science Advances*, **2017**, 3, e1700121	14.3	130
132	Switching Kinetic of VCM-Based Memristor: Evolution and Positioning of Nanofilament. *Advanced Materials*, **2015**, 27, 5028-33	24	129
131	Thermal Stability and Performance of NbSiTaTiZr High-Entropy Alloy Barrier for Copper Metallization. *Journal of the Electrochemical Society*, **2011**, 158, H1161	3.9	127
130	In situ control of atomic-scale Si layer with huge strain in the nanoheterostructure NiSi/Si/NiSi through point contact reaction. *Nano Letters*, **2007**, 7, 2389-94	11.5	127
129	Well-aligned ZnO nanowires with excellent field emission and photocatalytic properties. *Nanoscale*, **2012**, 4, 1471-5	7.7	96
128	Van der Waals heteroepitaxial AZO/NiO/AZO/muscovite (ANA/muscovite) transparent flexible memristor. *Nano Energy*, **2019**, 56, 322-329	17.1	93
127	In-situ TEM observation of repeating events of nucleation in epitaxial growth of nano CoSi2 in nanowires of Si. *Nano Letters*, **2008**, 8, 2194-9	11.5	85
126	Facile synthesis of mesoporous NiFe 2 O 4 /CNTs nanocomposite cathode material for high performance asymmetric pseudocapacitors. *Applied Surface Science*, **2018**, 433, 1100-1112	6.7	65
125	Oxide Heteroepitaxy for Flexible Optoelectronics. *ACS Applied Materials & Interfaces*, **2016**, 8, 32401-32407	9.5	62
124	Rational Design of ZnO:H/ZnO Bilayer Structure for High-Performance Thin-Film Transistors. *ACS Applied Materials & Interfaces*, **2016**, 8, 7862-8	9.5	61
123	Homogeneous nucleation of epitaxial CoSi2 and NiSi in Si nanowires. *Nano Letters*, **2009**, 9, 2337-42	11.5	58
122	Direct Observation of Dual-Filament Switching Behaviors in Ta O -Based Memristors. *Small*, **2017**, 13, 1603116	11	56

121	Phase transformation and thermoelectric properties of bismuth-telluride nanowires. *Nanoscale*, **2013**, 5, 4669-72	7.7	54
120	Growth of high-density titanium silicide nanowires in a single direction on a silicon surface. *Nano Letters*, **2007**, 7, 885-9	11.5	54
119	Dielectric Engineering of a Boron Nitride/Hafnium Oxide Heterostructure for High-Performance 2D Field Effect Transistors. *Advanced Materials*, **2016**, 28, 2062-9	24	48
118	Resistive switching of Au/ZnO/Au resistive memory: an in situ observation of conductive bridge formation. *Nanoscale Research Letters*, **2012**, 7, 559	5	46
117	Growth of CuInSe2 and In2Se3/CuInSe2 nano-heterostructures through solid state reactions. *Nano Letters*, **2011**, 11, 4348-51	11.5	43
116	Excellent piezoelectric and electrical properties of lithium-doped ZnO nanowires for nanogenerator applications. *Nano Energy*, **2014**, 8, 291-296	17.1	41
115	Observation of Resistive Switching Behavior in Crossbar Core-Shell Ni/NiO Nanowires Memristor. *Small*, **2018**, 14, 1703153	11	40
114	Revealing controllable nanowire transformation through cationic exchange for RRAM application. *Nano Letters*, **2014**, 14, 2759-63	11.5	39
113	Synthesis and growth mechanism of pentagonal Cu nanobats with field emission characteristics. *Nanotechnology*, **2006**, 17, 719-722	3.4	39
112	In situ TEM and energy dispersion spectrometer analysis of chemical composition change in ZnO nanowire resistive memories. *Analytical Chemistry*, **2013**, 85, 3955-60	7.8	38
111	Kinetic competition model and size-dependent phase selection in 1-D nanostructures. *Nano Letters*, **2012**, 12, 3115-20	11.5	37
110	Measurement of Interlayer Screening Length of Layered Graphene by Plasmonic Nanostructure Resonances. *Journal of Physical Chemistry C*, **2013**, 117, 22211-22217	3.8	37
109	Vertically well-aligned epitaxial Ni31Si12 nanowire arrays with excellent field emission properties. *Applied Physics Letters*, **2008**, 93, 113109	3.4	37
108	In Situ Study of Spinel Ferrite Nanocrystal Growth Using Liquid Cell Transmission Electron Microscopy. *Chemistry of Materials*, **2015**, 27, 8146-8152	9.6	36
107	Dynamic observation of phase transformation behaviors in indium(III) selenide nanowire based phase change memory. *ACS Nano*, **2014**, 8, 9457-62	16.7	35
106	Cobalt Silicide Nanostructures: Synthesis, Electron Transport, and Field Emission Properties. *Crystal Growth and Design*, **2009**, 9, 4514-4518	3.5	35
105	Synthesis and characterization of one-dimensional Ag-doped ZnO/Ga-doped ZnO coaxial nanostructure diodes. *ACS Applied Materials & Interfaces*, **2014**, 6, 5183-91	9.5	33
104	Copper silicide/silicon nanowire heterostructures: in situ TEM observation of growth behaviors and electron transport properties. *Nanoscale*, **2013**, 5, 5086-92	7.7	31

103	Revealing conducting filament evolution in low power and high reliability Fe3O4/Ta2O5 bilayer RRAM. *Nano Energy*, **2018**, 53, 871-879	17.1	30
102	In-situ TEM observation of Multilevel Storage Behavior in low power FeRAM device. *Nano Energy*, **2017**, 34, 103-110	17.1	29
101	Low Power Consumption Nanofilamentary ECM and VCM Cells in a Single Sidewall of High-Density VRRAM Arrays. *Advanced Science*, **2019**, 6, 1902363	13.6	29
100	Growth of multiple metal/semiconductor nanoheterostructures through point and line contact reactions. *Nano Letters*, **2010**, 10, 3984-9	11.5	28
99	Dynamics of Nanoscale Dendrite Formation in Solution Growth Revealed Through in Situ Liquid Cell Electron Microscopy. *Nano Letters*, **2018**, 18, 6427-6433	11.5	28
98	High-yield synthesis of ZnO nanowire arrays and their opto-electrical properties. *Nanoscale*, **2012**, 4, 1476-80	7.7	27
97	Facile production of graphene nanosheets comprising nitrogen-doping through in situ cathodic plasma formation during electrochemical exfoliation. *Journal of Materials Chemistry C*, **2017**, 5, 2597-2602	7.1	25
96	Observing Growth of Nanostructured ZnO in Liquid. *Chemistry of Materials*, **2016**, 28, 4507-4511	9.6	25
95	Probing the electrochemical properties of an electrophoretically deposited Co3O4/rGO/CNTs nanocomposite for supercapacitor applications. *RSC Advances*, **2016**, 6, 60578-60586	3.7	25
94	Direct observation of melting behaviors at the nanoscale under electron beam and heat to form hollow nanostructures. *Nanoscale*, **2012**, 4, 4702-6	7.7	25
93	Direct observation of electromigration-induced surface atomic steps in Cu lines by in situ transmission electron microscopy. *Applied Physics Letters*, **2007**, 90, 203101	3.4	25
92	Optoelectronic Properties of Single-Crystalline Zn2GeO4 Nanowires. *Journal of Physical Chemistry C* , **2014**, 118, 8194-8199	3.8	24
91	Opto-electrical properties of Sb-doped p-type ZnO nanowires. *Applied Physics Letters*, **2014**, 104, 111909	3.4	24
90	Phosphorus-Doped p□ Homojunction ZnO Nanowires: Growth Kinetics in Liquid and Their Optoelectronic Properties. *Chemistry of Materials*, **2015**, 27, 4216-4221	9.6	23
89	Taper PbZr(0.2)Ti(0.8)O3 nanowire arrays: from controlled growth by pulsed laser deposition to piezopotential measurements. *ACS Nano*, **2012**, 6, 2826-32	16.7	23
88	The influence of surface oxide on the growth of metal/semiconductor nanowires. *Nano Letters*, **2011**, 11, 2753-8	11.5	23
87	High on/off ratio black phosphorus based memristor with ultra-thin phosphorus oxide layer. *Applied Physics Letters*, **2019**, 115, 193503	3.4	22
86	Low resistivity metal silicide nanowires with extraordinarily high aspect ratio for future nanoelectronic devices. *ACS Nano*, **2011**, 5, 9202-7	16.7	22

85	In Situ Observation of Au Nanostructure Evolution in Liquid Cell TEM. *Journal of Physical Chemistry C*, **2017**, 121, 26069-26075	3.8	21
84	Heterogeneous and Homogeneous Nucleation of Epitaxial NiSi2 in [110] Si Nanowires. *Journal of Physical Chemistry C*, **2011**, 115, 397-401	3.8	21
83	Single-crystalline □Ni2Si nanowires with excellent physical properties. *Nanoscale Research Letters*, **2013**, 8, 290	5	20
82	Observing topotactic phase transformation and resistive switching behaviors in low power SrCoOx memristor. *Nano Energy*, **2020**, 72, 104683	17.1	19
81	Transparent Antiradiative Ferroelectric Heterostructure Based on Flexible Oxide Heteroepitaxy. *ACS Applied Materials & Interfaces*, **2018**, 10, 30574-30580	9.5	19
80	The different roles of contact materials between oxidation interlayer and doping effect for high performance ZnO thin film transistors. *Applied Physics Letters*, **2015**, 106, 051607	3.4	19
79	In Situ Observation of Dehydration-Induced Phase Transformation from Na2Nb2O6□H2O to NaNbO3. *Journal of Physical Chemistry C*, **2012**, 116, 22261-22265	3.8	18
78	Atomic-Scale Fabrication of In-Plane Heterojunctions of Few-Layer MoS via In Situ Scanning Transmission Electron Microscopy. *Small*, **2020**, 16, e1905516	11	18
77	Atomic Visualization of the Phase Transition in Highly Strained BiFeO3 Thin Films with Excellent Pyroelectric Response. *Nano Energy*, **2015**, 17, 72-81	17.1	17
76	In situ atomic scale investigation of Li7La3Zr2O12-based Li+-conducting solid electrolyte during calcination growth. *Nano Energy*, **2020**, 71, 104625	17.1	16
75	Observing the evolution of graphene layers at high current density. *Nano Research*, **2016**, 9, 3663-3670	10	16
74	Growth of single-crystalline cobalt silicide nanowires with excellent physical properties. *Journal of Applied Physics*, **2011**, 110, 074302	2.5	16
73	Sandwich-Nanostructured n-CuO/AuAg/p-CuO Photocathode with Highly Positive Onset Potential for Improved Water Reduction. *ACS Applied Materials & Interfaces*, **2019**, 11, 38625-38632	9.5	15
72	Single-crystalline CuO nanowires for resistive random access memory applications. *Applied Physics Letters*, **2015**, 106, 173103	3.4	15
71	Flexible Heteroepitaxy Photoelectrode for Photo-electrochemical Water Splitting. *ACS Applied Energy Materials*, **2018**, 1, 3900-3907	6.1	15
70	Applications of p-n homojunction ZnO nanowires to one-diode one-memristor RRAM arrays. *Scripta Materialia*, **2020**, 187, 439-444	5.6	15
69	Dynamic observation of reversible lithium storage phenomena in hybrid supercapacitor devices. *Nano Energy*, **2017**, 41, 494-500	17.1	14
68	In situ TEM observation of Au-CuO core-shell growth in liquids. *Nanoscale*, **2019**, 11, 10486-10492	7.7	14

67	Self-formed conductive nanofilaments in (Bi, Mn)O for ultralow-power memory devices. *Nano Energy*, **2015**, 13, 283-290	17.1	14
66	Nickel/Platinum Dual Silicide Axial Nanowire Heterostructures with Excellent Photosensor Applications. *Nano Letters*, **2016**, 16, 1086-91	11.5	14
65	Sub-nA Low-Current HZO Ferroelectric Tunnel Junction for High-Performance and Accurate Deep Learning Acceleration **2019**,		14
64	Supercritical CO2-Assisted SiOx/Carbon Multi-Layer Coating on Si Anode for Lithium-Ion Batteries. *Advanced Functional Materials*, **2021**, 31, 2104135	15.6	14
63	Low Interface Trap Densities and Enhanced Performance of AlGaN/GaN MOS High- Electron Mobility Transistors Using Thermal Oxidized Y2O3 Interlayer. *IEEE Electron Device Letters*, **2015**, 36, 1284-1286	4.4	13
62	Atomic-scale investigation of Lithiation/Delithiation mechanism in High-entropy spinel oxide with superior electrochemical performance. *Chemical Engineering Journal*, **2021**, 420, 129838	14.7	13
61	In Situ Investigation of Defect-Free Copper Nanowire Growth. *Nano Letters*, **2018**, 18, 778-784	11.5	11
60	Cobalt silicide nanocables grown on Co films: synthesis and physical properties. *Nanotechnology*, **2010**, 21, 485602	3.4	11
59	Bioinspired Engineering of a Bacterium-Like Metal Organic Framework for Cancer Immunotherapy. *Advanced Functional Materials*, **2020**, 30, 2003764	15.6	11
58	Mass transport phenomena in copper nanowires at high current density. *Nano Research*, **2016**, 9, 1071-1078	10	10
57	Single-crystalline Ge nanowires and Cu3Ge/Ge nano-heterostructures. *CrystEngComm*, **2012**, 14, 4570	3.3	10
56	Polarization-Resolved Broadband MoS2/Black Phosphorus/MoS2 Optoelectronic Memory with Ultralong Retention Time and Ultrahigh Switching Ratio. *Advanced Functional Materials*, **2021**, 31, 2100781	15.6	10
55	Direct Observation of Sublimation Behaviors in One-Dimensional In2Se3/In2O3 Nanoheterostructures. *Analytical Chemistry*, **2015**, 87, 5584-8	7.8	9
54	Optimization of the nanotwin-induced zigzag surface of copper by electromigration. *Nanoscale*, **2016**, 8, 2584-8	7.7	9
53	Observing phase transformation in CVD-grown MoSvia atomic resolution TEM. *Chemical Communications*, **2018**, 54, 9941-9944	5.8	9
52	Carbon Nanotube/Nitrogen-Doped Reduced Graphene Oxide Nanocomposites and Their Application in Supercapacitors. *Journal of Nanoscience and Nanotechnology*, **2017**, 17, 5366-5373	1.3	9
51	Dynamic observation on the growth behaviors in manganese silicide/silicon nanowire heterostructures. *Nanoscale*, **2015**, 7, 1776-81	7.7	8
50	Atomic-Scale Localized Thinning and Reconstruction of Two-Dimensional WS2 Layers through In Situ Transmission Electron Microscopy/Scanning Transmission Electron Microscopy. *Journal of Physical Chemistry C*, **2020**, 124, 14935-14940	3.8	8

49	Growth and properties of single-crystalline Ge nanowires and germanide/Ge nano-heterostructures. *CrystEngComm*, **2012**, 14, 53-58	3.3	8
48	Controlled growth of the silicide nanostructures on Si bicrystal nanotemplate at a precision of a few nanometres. *CrystEngComm*, **2011**, 13, 3967	3.3	8
47	Structural Analysis and Performance in a Dual-Mechanism Conductive Filament Memristor. *Advanced Electronic Materials*, **2021**, 7, 2100605	6.4	8
46	In Situ Analysis of Growth Behaviors of CuO Nanocubes in Liquid Cell Transmission Electron Microscopy. *Analytical Chemistry*, **2019**, 91, 9665-9672	7.8	7
45	A solid-state cation exchange reaction to form multiple metal oxide heterostructure nanowires. *Nanoscale*, **2016**, 8, 17039-17043	7.7	7
44	Surface defect engineering: gigantic enhancement in the optical and gas detection ability of metal oxide sensor. *RSC Advances*, **2016**, 6, 65146-65151	3.7	7
43	Ni/NiO/HfO2 Core/Multishell Nanowire ReRAM Devices with Excellent Resistive Switching Properties. *Advanced Electronic Materials*, **2018**, 4, 1800256	6.4	7
42	Observing Solid-State Formation of Oriented Porous Functional Oxide Nanowire Heterostructures by in Situ TEM. *Nano Letters*, **2018**, 18, 6064-6070	11.5	7
41	Electron Beam Irradiation-Induced Deoxidation and Atomic Flattening on the Copper Surface. *ACS Applied Materials & Interfaces*, **2019**, 11, 40909-40915	9.5	6
40	Real time observation of the formation of hollow nanostructures through solid state reactions. *Analytical Chemistry*, **2014**, 86, 4348-53	7.8	6
39	In Situ TEM Investigation of the Electrochemical Behavior in CNTs/MnO-Based Energy Storage Devices. *Analytical Chemistry*, **2017**, 89, 9671-9675	7.8	6
38	Metal silicide nanowires. *Japanese Journal of Applied Physics*, **2015**, 54, 07JA04	1.4	6
37	Atomic Imaging of Molybdenum Oxide Nanowires with Unique and Complex Periodicity by Advanced Electron Microscopy. *Nano Letters*, **2020**, 20, 1510-1516	11.5	6
36	In situ TEM investigation of electron beam-induced ultrafast chemical lithiation for charging. *Journal of Materials Chemistry A*, **2020**, 8, 648-655	13	6
35	Atomic-scale investigation of Na3V2(PO4)3 formation process in chemical infiltration via in situ transmission electron microscope for solid-state sodium batteries. *Nano Energy*, **2021**, 87, 106144	17.1	6
34	Dynamic observation on the functional metal oxide conversion behaviors in Fe3O4/ZnO heterostructures. *Scripta Materialia*, **2020**, 177, 192-197	5.6	5
33	Phase Variations and Layer Epitaxy of 2D PdSe Grown on 2D Monolayers by Direct Selenization of Molecular Pd Precursors. *ACS Nano*, **2020**, 14, 11677-11690	16.7	5
32	Pollen-Mimetic Metal-Organic Frameworks with Tunable Spike-Like Nanostructures That Promote Cell Interactions to Improve Antigen-Specific Humoral Immunity. *ACS Nano*, **2021**, 15, 7596-7607	16.7	5

31	A novel high-performance and energy-efficient RRAM device with multi-functional conducting nanofilaments. *Nano Energy*, **2021**, 82, 105717	17.1	5
30	Solid-State Diffusional Behaviors of Functional Metal Oxides at Atomic Scale. *Small*, **2018**, 14, 1702877	11	4
29	Shape control of nickel silicide nanocrystals on stress-modified surface. *CrystEngComm*, **2014**, 16, 1611	3.3	4
28	Metal Silicide Nanowires. *ECS Transactions*, **2007**, 11, 3-6	1	4
27	Core-Shell Pd9Ru@Pt on Functionalized Graphene for Methanol Electrooxidation. *Journal of the Electrochemical Society*, **2018**, 165, H365-H373	3.9	3
26	Mimic Drug Dosage Modulation for Neuroplasticity Based on Charge-Trap Layered Electronics. *Advanced Functional Materials*, **2021**, 31, 2005182	15.6	3
25	In-situ Transmission Electron Microscope Investigation of Atomic-scale Titanium Silicide Monolayer Superlattice. *Scripta Materialia*, **2021**, 193, 6-11	5.6	3
24	Atomic-scale silicidation of low resistivity Ni-Si system through in-situ TEM investigation. *Applied Surface Science*, **2021**, 538, 148129	6.7	3
23	Fabrication of (111)-Oriented Nanotwinned Au Films for Au-to-Au Direct Bonding. *Materials*, **2018**, 11,	3.5	3
22	Atomic-Scale Investigation of Electromigration with Different Directions of Electron Flow into High-Density Nanotwinned Copper through In Situ HRTEM. *Acta Materialia*, **2021**, 219, 117250	8.4	3
21	Unique amorphization-mediated growth to form heterostructured silicide nanowires by solid-state reactions. *Materials and Design*, **2019**, 169, 107674	8.1	2
20	Improved performance of ZnO-based resistive memory by internal diffusion of Ag atoms. *Journal of Nanoscience and Nanotechnology*, **2012**, 12, 6271-5	1.3	2
19	In situatomic-scale observation of the conversion behavior in a Cu-Zn alloy for twinnability enhancement. *Applied Surface Science*, **2022**, 573, 151602	6.7	2
18	Ultra-high annealing twin density in -oriented Cu films. *Scripta Materialia*, **2020**, 184, 46-51	5.6	2
17	A Strategy to Synthesize Ultrahigh-N-Doped Hierarchical Carbons via Induced Sheet from Silk Fibroin by In Situ Electrogelation/Electropolymerization. *ACS Applied Energy Materials*, **2020**, 3, 3596-3608	6.1	1
16	A Triode Device with a Gate Controllable Schottky Barrier: Germanium Nanowire Transistors and Their Applications. *Small*, **2019**, 15, e1900865	11	1
15	Investigation and Effects of Wafer Bow in 3D Integration Bonding Schemes. *Journal of Electronic Materials*, **2010**, 39, 2605-2610	1.9	1
14	In Situ Atomic-Scale Observation of Monolayer MoS Devices under High-Voltage Biasing via Transmission Electron Microscopy.. *Small*, **2022**, e2106411	11	1

List of Publications

13	Observing Growth and Crystallization of Core-Shell Nanoparticles by In Situ Liquid Cell Transmission Electron Microscopy: Implications for Photocatalysis and Gas-Sensing Applications. *ACS Applied Nano Materials*, **2021**, 4, 612-620	5.6	1
12	In situ atomic-scale TEM observation of Ag nanoparticle-mediated coalescence in liquids. *Applied Surface Science*, **2021**, 546, 149057	6.7	1
11	Synthesis of single-crystalline Ge1Sb2Te4 nanoplates in solution phase. *CrystEngComm*, **2016**, 18, 2244-2246	3.9	1
10	Dynamic Observation of Electromigration in High Density Electroplated Nanotwinned Copper through in-Situ TEM. *ECS Transactions*, **2020**, 97, 145-148	1	0
9	In situ manipulation of E-beam irradiation-induced nanopore formation on molybdenum oxide nanowires. *Applied Surface Science*, **2021**, 544, 148874	6.7	0
8	Enhancement in the Detection Ability of Metal Oxide Sensors Using Defect-Rich Polycrystalline Nanofiber Devices. *Global Challenges*, **2020**, 4, 2000041	4.3	
7	Few-Layer MoS2: Atomic-Scale Fabrication of In-Plane Heterojunctions of Few-Layer MoS2 via In Situ Scanning Transmission Electron Microscopy (Small 3/2020). *Small*, **2020**, 16, 2070015	11	
6	In-situ Microscopic Study of Cu Intragranular Electromigration. *Materials Research Society Symposia Proceedings*, **2005**, 907, 1		
5	A Novel Three-Dimensional High Density Vertical Rram Arrays with Reduced Leakage Current. *ECS Meeting Abstracts*, **2020**, MA2020-01, 1298-1298	0	
4	Investigation of Indium Oxide Nanowire Transform to Indium Zinc Oxide (IZO) Via Solid State Reactions. *ECS Transactions*, **2020**, 97, 105-108	1	
3	In Situ Atomic-Scale Observation of Monolayer MoS 2 Devices under High-Voltage Biasing via Transmission Electron Microscopy (Small 7/2022). *Small*, **2022**, 18, 2270034	11	
2	In situ TEM investigation of indium oxide/titanium oxide nanowire heterostructures growth through solid state reactions. *Materials Characterization*, **2022**, 187, 111832	3.9	
1	Observing Resistive Switching Behaviors in Single Ta2O5 Nanotube-Based Memristive Devices. *Materials Today Nano*, **2022**, 100212	9.7	