

# Sang Ho Oh

## List of Publications by Year in descending order

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126  
papers

5,334  
citations

94433

37  
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91884

69  
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131  
all docs

131  
docs citations

131  
times ranked

8546  
citing authors

#	ARTICLE	IF	CITATIONS
1	In situ observation of dislocation nucleation and escape in a submicrometre aluminium single crystal. Nature Materials, 2009, 8, 95-100.	27.5	400
2	Efficient photoelectrochemical hydrogen production from bismuth vanadate-decorated tungsten trioxide helix nanostructures. Nature Communications, 2014, 5, 4775.	12.8	367
3	Ordered Liquid Aluminum at the Interface with Sapphire. Science, 2005, 310, 661-663.	12.6	307
4	Emergence of room-temperature ferroelectricity at reduced dimensions. Science, 2015, 349, 1314-1317.	12.6	259
5	Oscillatory Mass Transport in Vapor-Liquid-Solid Growth of Sapphire Nanowires. Science, 2010, 330, 489-493.	12.6	166
6	Graphenes Converted from Polymers. Journal of Physical Chemistry Letters, 2011, 2, 493-497.	4.6	158
7	Direct observation of a two-dimensional hole gas at oxide interfaces. Nature Materials, 2018, 17, 231-236.	27.5	151
8	Reversible cyclic deformation mechanism of gold nanowires by twinning and detwinning transition evidenced from in situ TEM. Nature Communications, 2014, 5, 3033.	12.8	137
9	Enhancement of the anisotropic photocurrent in ferroelectric oxides by strain gradients. Nature Nanotechnology, 2015, 10, 972-979.	31.5	134
10	Nanotwin-governed toughening mechanism in hierarchically structured biological materials. Nature Communications, 2016, 7, 10772.	12.8	127
11	Point Defect Configurations of Supersaturated Au Atoms Inside Si Nanowires. Nano Letters, 2008, 8, 1016-1019.	9.1	119
12	In situ TEM straining of single crystal Au films on polyimide: Change of deformation mechanisms at the nanoscale. Acta Materialia, 2007, 55, 5558-5571.	7.9	116
13	Active hydrogen evolution through lattice distortion in metallic MoTe <sub>2</sub> . 2D Materials, 2017, 4, 025061.	4.4	103
14	Defect-Induced Epitaxial Growth for Efficient Solar Hydrogen Production. Nano Letters, 2017, 17, 6676-6683.	9.1	96
15	Sharpened VO <sub>2</sub> Phase Transition via Controlled Release of Epitaxial Strain. Nano Letters, 2017, 17, 5614-5619.	9.1	93
16	In-situ TEM observation of twin-dominated deformation of Mg pillars: Twinning mechanism, size effects and rate dependency. Acta Materialia, 2018, 158, 407-421.	7.9	93
17	Bioinspired Silica Nanocomposite with Autoencapsulated Carbonic Anhydrase as a Robust Biocatalyst for CO <sub>2</sub> Sequestration. ACS Catalysis, 2014, 4, 4332-4340.	11.2	88
18	Synthesis of Carbon Nanotubes Using Microwave Radiation. Advanced Functional Materials, 2003, 13, 961-966.	14.9	76

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19	In situ TEM observation on the interface-type resistive switching by electrochemical redox reactions at a TiN/PCMO interface. <i>Nanoscale</i> , 2017, 9, 582-593.	5.6	76
20	A near single crystalline TiO <sub>2</sub> nanohelix array: enhanced gas sensing performance and its application as a monolithically integrated electronic nose. <i>Analyst, The</i> , 2013, 138, 443-450.	3.5	73
21	Preparation of Aligned Carbon Nanotubes with Prescribed Dimensions: A Template Synthesis and Sonication Cutting Approach. <i>Chemistry of Materials</i> , 2002, 14, 1859-1862.	6.7	72
22	FIB-induced dislocations in Al submicron pillars: Annihilation by thermal annealing and effects on deformation behavior. <i>Acta Materialia</i> , 2016, 110, 283-294.	7.9	66
23	Space-holder effect on designing pore structure and determining mechanical properties in porous titanium. <i>Materials &amp; Design</i> , 2014, 57, 712-718.	5.1	64
24	A two-photon tandem black phosphorus quantum dot-sensitized BiVO <sub>4</sub> photoanode for solar water splitting. <i>Energy and Environmental Science</i> , 2022, 15, 672-679.	30.8	64
25	Role of Graphene in Reducing Fatigue Damage in Cu/Gr Nanolayered Composite. <i>Nano Letters</i> , 2017, 17, 4740-4745.	9.1	63
26	Nanometer-Scale Phase Transformation Determines Threshold and Memory Switching Mechanism. <i>Advanced Materials</i> , 2017, 29, 1701752.	21.0	59
27	Quantitative analysis of layering and in-plane structural ordering at an alumina-aluminum solid-liquid interface. <i>Acta Materialia</i> , 2011, 59, 4378-4386.	7.9	58
28	Transmission electron microscopy and thermodynamic studies of CaO-added AZ31 Mg alloys. <i>Acta Materialia</i> , 2013, 61, 3267-3277.	7.9	55
29	Composition-Tunable Synthesis of Large-Scale Mo <sub>1-x</sub> W <sub>x</sub> S <sub>2</sub> Alloys with Enhanced Photoluminescence. <i>ACS Nano</i> , 2018, 12, 6301-6309.	14.6	51
30	Corrosion-engineered bimetallic oxide electrode as anode for high-efficiency anion exchange membrane water electrolyzer. <i>Chemical Engineering Journal</i> , 2021, 420, 127670.	12.7	51
31	Misfit strain relaxation by dislocations in SrRuO <sub>3</sub> /SrTiO <sub>3</sub> (001) heteroepitaxy. <i>Journal of Applied Physics</i> , 2004, 95, 4691-4704.	2.5	49
32	Multiple Heterojunction in Single Titanium Dioxide Nanoparticles for Novel Metal-Free Photocatalysis. <i>Nano Letters</i> , 2018, 18, 4257-4262.	9.1	45
33	Surface hardening of aluminum alloy by shot peening treatment with Zn based ball. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2012, 543, 44-49.	5.6	43
34	Analog Synapse Device With 5-b MLC and Improved Data Retention for Neuromorphic System. <i>IEEE Electron Device Letters</i> , 2016, 37, 1067-1070.	3.9	42
35	Direct observation of asymmetric domain wall motion in a ferroelectric capacitor. <i>Acta Materialia</i> , 2013, 61, 6765-6777.	7.9	41
36	Surface hardening of shot peened H13 steel by enhanced nitrogen diffusion. <i>Surface and Coatings Technology</i> , 2013, 232, 912-919.	4.8	40

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37	Direct imaging of the electron liquid at oxide interfaces. <i>Nature Nanotechnology</i> , 2018, 13, 198-203.	31.5	40
38	Hardening and toughening mechanisms in nanotwinned ceramics. <i>Scripta Materialia</i> , 2017, 133, 105-112.	5.2	38
39	Effect of a high angle grain boundary on deformation behavior of Al nanopillars. <i>Scripta Materialia</i> , 2015, 107, 5-9.	5.2	35
40	Dislocation plasticity in FeCoCrMnNi high-entropy alloy: quantitative insights from <i>in situ</i> transmission electron microscopy deformation. <i>Materials Research Letters</i> , 2020, 8, 216-224.	8.7	35
41	Non-oxidized bare copper nanoparticles with surface excess electrons in air. <i>Nature Nanotechnology</i> , 2022, 17, 285-291.	31.5	34
42	Thermal stability of RuO <sub>2</sub> /Ru bilayer thin film in oxygen atmosphere. <i>Thin Solid Films</i> , 2000, 359, 118-123.	1.8	33
43	Enhanced power conversion efficiency of dye-sensitized solar cells with multifunctional photoanodes based on a three-dimensional TiO <sub>2</sub> nanohelix array. <i>Solar Energy Materials and Solar Cells</i> , 2015, 132, 47-55.	6.2	33
44	Interface dominated mechanical properties of ultra-fine grained and nanoporous Au at elevated temperatures. <i>Acta Materialia</i> , 2016, 121, 104-116.	7.9	32
45	Nanoscale graphene coating on commercially pure titanium for accelerated bone regeneration. <i>RSC Advances</i> , 2016, 6, 26719-26724.	3.6	32
46	Microstructural evolution and strain-hardening behavior of multi-pass caliber-rolled Ti-13Nb-13Zr. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 648, 359-366.	5.6	31
47	Effect of surface energy on size-dependent deformation twinning of defect-free Au nanowires. <i>Nanoscale</i> , 2015, 7, 15657-15664.	5.6	30
48	Mixed phase 2D Mo <sub>0.5</sub> W <sub>0.5</sub> S <sub>2</sub> alloy as a multi-functional electrocatalyst for a high-performance cathode in Li-S batteries. <i>Journal of Materials Chemistry A</i> , 2020, 8, 12436-12445.	10.3	30
49	Water- and acid-stable self-passivated dihafnium sulfide electride and its persistent electrocatalytic reaction. <i>Science Advances</i> , 2020, 6, eaba7416.	10.3	30
50	In-Situ Synthesis of Carbon Nanotubes on Organic Polymer Substrates at Atmospheric Pressure. <i>Advanced Materials</i> , 2002, 14, 676-679.	21.0	29
51	Investigation of Ta-Ti-Al-Ni-Au ohmic contact to AlGaN/GaN heterostructure field-effect transistor. <i>Journal of Vacuum Science &amp; Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 2005, 23, 322.	1.6	27
52	Strain compensation by twinning in Au thin films: Experiment and model. <i>Acta Materialia</i> , 2007, 55, 6659-6665.	7.9	27
53	Three-Dimensional Nanostructured Indium Oxide Electrodes for Enhanced Performance of Bulk Heterojunction Organic Solar Cells. <i>Advanced Energy Materials</i> , 2014, 4, 1301566.	19.5	27
54	Epitaxy and bonding of Cu films on oxygen-terminated $\pm$ -Al <sub>2</sub> O <sub>3</sub> (0001) surfaces. <i>Acta Materialia</i> , 2006, 54, 2685-2696.	7.9	25

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55	Improved thermal stability of Ni silicide on Si (100) through reactive deposition of Ni. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2003, 21, 319.	1.6	24
56	Cation Disorder by Rapid Crystal Growth in Olivine-Phosphate Nanocrystals. Nano Letters, 2012, 12, 3068-3073.	9.1	24
57	Three-dimensional real structure-based finite element analysis of mechanical behavior for porous titanium manufactured by a space holder method. Computational Materials Science, 2015, 100, 2-7.	3.0	24
58	In Situ TEM Observation of Heterogeneous Phase Transition of a Constrained Single-Crystalline Ag <sub>2</sub> Te Nanowire. Nano Letters, 2010, 10, 4501-4504.	9.1	23
59	Solid-State Conversion Chemistry of Multicomponent Nanocrystals Cast in a Hollow Silica Nanosphere: Morphology-Controlled Syntheses of Hybrid Nanocrystals. ACS Nano, 2015, 9, 10719-10728.	14.6	23
60	In-situ observation of the initiation of plasticity by nucleation of prismatic dislocation loops. Nature Communications, 2020, 11, 2367.	12.8	23
61	Electronic and Structural Transitions of LaAlO <sub>3</sub> /SrTiO <sub>3</sub> Heterostructure Driven by Polar Field-Assisted Oxygen Vacancy Formation at the Surface. Advanced Science, 2021, 8, e2002073.	11.2	23
62	Packing Density Control of Aligned Carbon Nanotubes. Chemistry of Materials, 2002, 14, 4003-4005.	6.7	22
63	Atomically thin three-dimensional membranes of van der Waals semiconductors by wafer-scale growth. Science Advances, 2019, 5, eaaw3180.	10.3	22
64	Control of bonding and epitaxy at copper/sapphire interface. Applied Physics Letters, 2007, 91, 141912.	3.3	21
65	Enhanced surface hardening of AISI D2 steel by atomic attrition during ion nitriding. Surface and Coatings Technology, 2014, 251, 115-121.	4.8	21
66	Cooperative evolution of polar distortion and nonpolar rotation of oxygen octahedra in oxide heterostructures. Science Advances, 2021, 7, .	10.3	20
67	Highly fluidic liquid at homointerface generates grain-boundary dislocation arrays for high-performance bulk thermoelectrics. Acta Materialia, 2018, 159, 266-275.	7.9	19
68	Creation of two-dimensional layered Zintl phase by dimensional manipulation of crystal structure. Science Advances, 2019, 5, eaax0390.	10.3	19
69	<i>In situ</i> TEM observation of void formation and migration in phase change memory devices with confined nanoscale Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> . Nanoscale Advances, 2020, 2, 3841-3848.	4.6	19
70	Microstructure-dependent DC set switching behaviors of GeSbTe-based phase-change random access memory devices accessed by in situ TEM. NPG Asia Materials, 2015, 7, e194-e194.	7.9	18
71	Correlative High-Resolution Mapping of Strain and Charge Density in a Strained Piezoelectric Multilayer. Advanced Materials Interfaces, 2015, 2, 1400281.	3.7	18
72	Disordered-Layer-Mediated Reverse Metal-Oxide Interactions for Enhanced Photocatalytic Water Splitting. Nano Letters, 2021, 21, 5247-5253.	9.1	18

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73	Metal-ZnO Heterostructure Nanorods with an Abrupt Interface. Japanese Journal of Applied Physics, 2002, 41, L1206-L1208.	1.5	17
74	In Operando Stacking of Reduced Graphene Oxide for Active Hydrogen Evolution. ACS Applied Materials & Interfaces, 2019, 11, 43460-43465.	8.0	17
75	Enhanced power conversion efficiency of quantum dot sensitized solar cells with near single-crystalline TiO <sub>2</sub> nanohelices used as photoanodes. Optics Express, 2014, 22, A867.	3.4	16
76	Fabrication of a Stable New Polymorph Gold Nanowire with Sixfold Rotational Symmetry. Advanced Materials, 2018, 30, e1706261.	21.0	16
77	Insights into fundamental deformation processes from advanced in situ transmission electron microscopy. MRS Bulletin, 2019, 44, 443-449.	3.5	16
78	Electronically reconfigurable complex oxide heterostructure freestanding membranes. Science Advances, 2021, 7, .	10.3	15
79	Growth behavior and defects in conductive SrRuO <sub>3</sub> thin films grown on a Si(100) substrate by sputtering. Journal of Materials Research, 2001, 16, 1998-2006.	2.6	13
80	Strain mapping of LED devices by dark-field inline electron holography: Comparison between deterministic and iterative phase retrieval approaches. Ultramicroscopy, 2013, 127, 119-125.	1.9	13
81	Defect engineered MoWS alloy catalyst boost the polysulfide conversion in lithium-sulfur battery. Journal of Power Sources, 2021, 511, 230426.	7.8	13
82	Direct observation of an electrically degenerate interface layer in a GaN/sapphire heterostructure. Nanoscale, 2019, 11, 8281-8292.	5.6	12
83	Atomically Conformal Metal Laminations on Plasmonic Nanocrystals for Efficient Catalysis. Journal of the American Chemical Society, 2021, 143, 10582-10589.	13.7	12
84	<i>c</i> -Axis-Oriented Platelets of Crystalline Hydroxyapatite in Biomimetic Intrafibrillar Mineralization of Polydopamine-Functionalized Collagen Type I. ACS Omega, 2022, 7, 4821-4831.	3.5	12
85	High-Resolution Mapping of Strain Partitioning and Relaxation in InGaN/GaN Nanowire Heterostructures. Advanced Science, 2022, 9, .	11.2	12
86	Dislocation plasticity of Al film on polyimide investigated by cross-sectional in situ transmission electron microscopy straining. Scripta Materialia, 2011, 65, 456-459.	5.2	11
87	Effect of spacer layer thickness on magnetic interactions in self-assembled single domain iron nanoparticles. Journal of Applied Physics, 2008, 103, 07D515.	2.5	10
88	A suspended nanogap formed by field-induced atomically sharp tips. Applied Physics Letters, 2012, 101, .	3.3	10
89	Critical evaluation and thermodynamic optimization of Mg-Ga system and effect of low pressure on phase equilibria. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2014, 46, 168-175.	1.6	10
90	Dipolar interactions and their influence on the critical single domain grain size of Ni in layered Ni/Al <sub>2</sub> O <sub>3</sub> composites. Journal of Physics Condensed Matter, 2008, 20, 385213.	1.8	9

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91	Microstructural refinement of Ni/Ce <sub>0.8</sub> Gd <sub>0.2</sub> O <sub>2</sub> anodes for low-temperature solid oxide fuel cell by wet infiltration loading of PdCl <sub>2</sub> . <i>Ceramics International</i> , 2014, 40, 12299-12312.	4.8	9
92	A Study on Dislocation Mechanisms of Toughening in Cu-Graphene Nanolayered Composite. <i>Nano Letters</i> , 2022, 22, 188-195.	9.1	9
93	The effect of matrix and substrate on the coercivity and blocking temperature of self-assembled Ni nanoparticles. <i>Journal of Applied Physics</i> , 2008, 104, .	2.5	8
94	Coexistence of Surface Superconducting and Three-Dimensional Topological Dirac States in Semimetal KZnBi. <i>Physical Review X</i> , 2021, 11, .	8.9	8
95	Shape-Tuned Multiphoton-Emitting InP Nanotetrapods. <i>Advanced Materials</i> , 2022, 34, e2110665.	21.0	8
96	Microstructural evolution of a focused ion beam fabricated Mg nanopillar at high temperatures: Defect annihilation and sublimation. <i>Scripta Materialia</i> , 2014, 86, 44-47.	5.2	7
97	Strain-induced indium clustering in non-polar a-plane InGaN quantum wells. <i>Acta Materialia</i> , 2018, 145, 109-122.	7.9	7
98	Crystallographic Orientation Analysis of Nanocrystalline Tungsten Thin Film Using TEM Precession Electron Diffraction and SEM Transmission Kikuchi Diffraction. <i>Microscopy and Microanalysis</i> , 2021, 27, 237-249.	0.4	7
99	Oxide Two-Dimensional Electron Gas with High Mobility at Room-Temperature. <i>Advanced Science</i> , 2022, 9, e2105652.	11.2	7
100	Nanoscale characterization of interfacial reactions in SrRuO <sub>3</sub> thin film on Si substrate. <i>Surface and Interface Analysis</i> , 2001, 31, 796-798.	1.8	6
101	Microstructural accommodation of excess Ru in epitaxial SrRuO <sub>3</sub> films. <i>Philosophical Magazine</i> , 2003, 83, 1307-1327.	1.6	6
102	Prospects of Using Small Scale Testing to Examine Different Deformation Mechanisms in Nanoscale Single Crystals—A Case Study in Mg. <i>Crystals</i> , 2021, 11, 61.	2.2	6
103	Atomic-scale operando observation of oxygen diffusion during topotactic phase transition of a perovskite oxide. <i>Matter</i> , 2022, 5, 3009-3022.	10.0	6
104	Reaction of Co and capping layers and its effect on CoSi <sub>2</sub> formation in Si/SiO <sub>x</sub> /Co system. <i>Applied Physics Letters</i> , 2000, 77, 1443-1445.	3.3	5
105	Microstructural Changes in (1-x)Nd <sub>2</sub> /3TiO <sub>3</sub> -xNdAlO <sub>3</sub> System. <i>Japanese Journal of Applied Physics</i> , 2004, 43, 7587-7591.	1.5	5
106	Surface evolution of strained SrRuO <sub>3</sub> films deposited at various temperatures on SrTiO <sub>3</sub> (001) substrates. <i>Journal of Materials Research</i> , 2006, 21, 1550-1560.	2.6	5
107	Structural and flux-pinning properties of laser ablated YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> thin films: Effects of self-assembled CeO <sub>2</sub> nanodots on LaAlO <sub>3</sub> substrates. <i>Physica C: Superconductivity and Its Applications</i> , 2008, 468, 2313-2316.	1.2	5
108	Synthesis and Mechanical Characterisation of an Ultra-Fine Grained Ti-Mg Composite. <i>Materials</i> , 2016, 9, 688.	2.9	5

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109	Effects of neutralizers on the crystal orientation of YSZ films grown by using ion beam sputtering. Vacuum, 2004, 74, 423-430.	3.5	4
110	Scaling exponent within the side-jump mechanism of Hall effect size-dependence in Ni nanocrystals. Applied Physics Letters, 2008, 93, 133105.	3.3	4
111	In situ TEM observation of phase transition of the nanoscopic patterns on baroplastic block copolymer films during nanoindentation. Nanoscale, 2013, 5, 4351.	5.6	4
112	Analysis of Local Charges at Hetero-interfaces by Electron Holography – A Comparative Study of Different Techniques. Ultramicroscopy, 2021, 231, 113236.	1.9	4
113	Improvement of the SiO <sub>2</sub> /Si interface characteristics by two-step deposition with intermediate plasma treatment using O <sub>2</sub> /He gas. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2001, 19, 2067.	1.6	3
114	Microstructures in Complex Perovskite (Li <sub>1/2</sub> Ln <sub>1/2</sub> )TiO <sub>3</sub> (Ln= Pr, Nd, Sm). Japanese Journal of Applied Physics, 2004, 43, 7592-7595.	1.5	3
115	Electron Holography: Correlative High-Resolution Mapping of Strain and Charge Density in a Strained Piezoelectric Multilayer (Adv. Mater. Interfaces 1/2015). Advanced Materials Interfaces, 2015, 2, .	3.7	3
116	Defects in Strained Epitaxial SrRuO <sub>3</sub> Films on SrTiO <sub>3</sub> Substrates. Materials Transactions, 2007, 48, 2556-2562.	1.2	2
117	Microstructural Analysis of Au/Ni/Al/Ti/Ta Ohmic Contact on AlGaIn/GaN Heterostructure. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 223-226.	0.8	1
118	In situ Negative Cs HRTEM Imaging of Topotactic Phase Transformation from Perovskite SrFeO <sub>3</sub> to Brownmillerite SrFeO <sub>2.5</sub> . Microscopy and Microanalysis, 2019, 25, 1482-1483.	0.4	1
119	Nano-scale Interfacial Reactions of SrRuO <sub>3</sub> Thin Film on Si (100) Substrate. Materials Research Society Symposia Proceedings, 2001, 666, 781.	0.1	0
120	Electrical Properties of Bi <sub>3.25</sub> La <sub>0.75</sub> Ti <sub>3</sub> O <sub>12</sub> Thin Films with Various Grain Orientations Deposited by r.f. Magnetron Sputtering. Materials Research Society Symposia Proceedings, 2003, 768, 3151.	0.1	0
121	In-situ TEM biasing experiments to study thickness-dependent ferroelectric domain switching of Pb(Zr,Ti)O <sub>3</sub> films. , 2011, , .		0
122	Two-dimensional mapping of strain and piezoelectric polarization in InGaIn/GaN MQWs by electron dark-field holography. , 2015, , .		0
123	Direct mapping of strain state in nonpolar InGaIn/GaN multilayers using dark-field inline electron holography. , 2015, , .		0
124	Direct Observation of Field-induced Modulation of Two-dimensional Electron Gas at Oxide Interfaces. Microscopy and Microanalysis, 2019, 25, 1848-1849.	0.4	0
125	Ghost-Template-Faceted Synthesis of Tunable Amorphous Hollow Silica Nanostructures and Their Ordered Mesoscale Assembly. Nano Letters, 2022, 22, 1159-1166.	9.1	0
126	Shape-Tuned Multiphoton-Emitting InP Nanotetrapods (Adv. Mater. 19/2022). Advanced Materials, 2022, 34, .	21.0	0