Chih-Kang Shih

List of Publications by Year
in descending order

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143 papers	10,545 citations	44066 48 h-index	31843 101 g-index
145 all docs	145 docs citations	145 times ranked	12416 citing authors

#	Article	IF	Citations
1	Plasmonic Nanolaser Using Epitaxially Grown Silver Film. Science, 2012, 337, 450-453.	12.6	686
2	Determination of band alignment in the single-layer MoS2/WSe2 heterojunction. Nature Communications, 2015, 6, 7666.	12.8	524
3	Scanning Probe-Based Frequency-Dependent Microrheology of Polymer Gels and Biological Cells. Physical Review Letters, 2000, 85, 880-883.	7.8	443
4	Interlayer couplings, MoirÃ© patterns, and 2D electronic superlattices in MoS ₂ /WSe ₂ hetero-bilayers. Science Advances, 2017, 3, e1601459.	10.3	414
5	Quantitative Analysis of the Viscoelastic Properties of Thin Regions of Fibroblasts Using Atomic Force Microscopy. Biophysical Journal, 2004, 86, 1777-1793.	0.5	407
6	Direct Imaging of Band Profile in Single Layer MoS₂ on Graphite: Quasiparticle Energy Gap, Metallic Edge States, and Edge Band Bending. Nano Letters, 2014, 14, 2443-2447.	9.1	402
7	â€œElectronic Growthâ€•of Metallic Overlayers on Semiconductor Substrates. Physical Review Letters, 1998, 80, 5381-5384.	7.8	359
8	Observation of topological surface state quantum Hall effect in an intrinsic three-dimensional topological insulator. Nature Physics, 2014, 10, 956-963.	16.7	352
9	Superconductivity at the Two-Dimensional Limit. Science, 2009, 324, 1314-1317.	12.6	294
10	Resonance Fluorescence from a Coherently Driven Semiconductor Quantum Dot in a Cavity. Physical Review Letters, 2007, 99, 187402.	7.8	293
11	Resonantly driven coherent oscillations in a solid-state quantum emitter. Nature Physics, 2009, 5, 203-207.	16.7	284
12	Interplay of Rabi Oscillations and Quantum Interference in Semiconductor Quantum Dots. Physical Review Letters, 2002, 88, 087401.	7.8	271
13	Persistent Superconductivity in Ultrathin Pb Films: A Scanning Tunneling Spectroscopy Study. Physical Review Letters, 2006, 96, 027005.	7.8	257
14	Nonuniform Composition Profile inIn0.5Ga0.5AsAlloy Quantum Dots. Physical Review Letters, 2000, 84, 334-337.	7.8	256
15	Strain distributions and their influence on electronic structures of WSe2â€“MoS2 laterally strained heterojunctions. Nature Nanotechnology, 2018, 13, 152-158.	31.5	206
16	All-Color Plasmonic Nanolasers with Ultralow Thresholds: Autotuning Mechanism for Single-Mode Lasing. Nano Letters, 2014, 14, 4381-4388.	9.1	201
17	Propagating Surface Plasmon Induced Photon Emission from Quantum Dots. Nano Letters, 2009, 9, 4168-4171.	9.1	181
18	Probing Critical Point Energies of Transition Metal Dichalcogenides: Surprising Indirect Gap of Single Layer WSe₂. Nano Letters, 2015, 15, 6494-6500.	9.1	175

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19	Electronic structure of NiO: Correlation and band effects. Physical Review B, 1991, 44, 3604-3626.	3.2	166
20	Profiling the Thermoelectric Power of Semiconductor Junctions with Nanometer Resolution. Science, 2004, 303, 816-818.	12.6	159
21	Separation of valley excitons in a MoS2 monolayer using a subwavelength asymmetric groove array. Nature Photonics, 2019, 13, 180-184.	31.4	147
22	Cell Motility and Local Viscoelasticity of Fibroblasts. Biophysical Journal, 2005, 89, 4330-4342.	0.5	128
23	Intrinsic Optical Properties and Enhanced Plasmonic Response of Epitaxial Silver. Advanced Materials, 2014, 26, 6106-6110.	21.0	122
24	Phonon renormalization in reconstructed MoS2 moirÃ© superlattices. Nature Materials, 2021, 20, 1100-1105.	27.5	121
25	Visualizing band offsets and edge states in bilayerâ€“monolayer transition metal dichalcogenides lateral heterojunction. Nature Communications, 2016, 7, 10349.	12.8	120
26	Excitons in semiconductor moirÃ© superlattices. Nature Nanotechnology, 2022, 17, 227-238.	31.5	105
27	Bond-length relaxation in pseudobinary alloys. Physical Review B, 1985, 31, 1139-1140.	3.2	92
28	Surface structural and electronic properties of cleaved single crystals ofBi2.15Sr1.7CaCu2O8+Î´compounds: A scanning tunneling microscopy study. Physical Review B, 1989, 40, 2682-2685.	3.2	90
29	Aspects of the correlation effects, antiferromagnetic order, and translational symmetry of the electronic structure of NiO and CoO. Physical Review Letters, 1990, 64, 2442-2445.	7.8	87
30	Decoherence processes during optical manipulation of excitonic qubits in semiconductor quantum dots. Physical Review B, 2005, 72, .	3.2	87
31	Determination of a natural valence-band offset: The case of HgTe-CdTe. Physical Review Letters, 1987, 58, 2594-2597.	7.8	84
32	MoirÃ© potential impedes interlayer exciton diffusion in van der Waals heterostructures. Science Advances, 2020, 6, .	10.3	83
33	Epitaxial Growth of Atomically Smooth Aluminum on Silicon and Its Intrinsic Optical Properties. ACS Nano, 2016, 10, 9852-9860.	14.6	75
34	Semiconductor plasmonic nanolasers: current status and perspectives. Reports on Progress in Physics, 2016, 79, 086501.	20.1	75
35	Contrasting Structural Reconstructions, Electronic Properties, and Magnetic Orderings along Different Edges of Zigzag Transition Metal Dichalcogenide Nanoribbons. Nano Letters, 2017, 17, 1097-1101.	9.1	75
36	Carrier relaxation and quantum decoherence of excited states in self-assembled quantum dots. Physical Review B, 2001, 63, .	3.2	73

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37	Visualization of geometric influences on proximity effects in heterogeneous superconductor thin films. Nature Physics, 2012, 8, 464-469.	16.7	73
38	Scanning tunneling microscopy and spectroscopy of Bi-Sr-Ca-Cu-O 2:2:1:2 high-temperature superconductors. Physical Review B, 1991, 43, 7913-7922.	3.2	72
39	Fabrication of MoSe2 nanoribbons via an unusual morphological phase transition. Nature Communications, 2017, 8, 15135.	12.8	70
40	Electrical characterization of individual carbon nanotubes grown in nanoporous anodic alumina templates. Applied Physics Letters, 2004, 84, 1177-1179.	3.3	68
41	Quantum size effects on the work function of metallic thin film nanostructures. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12761-12765.	7.1	61
42	Determination of anisotropic dipole moments in self-assembled quantum dots using Rabi oscillations. Applied Physics Letters, 2004, 84, 981-983.	3.3	60
43	Thermal formation of Zn-dopant-vacancy defect complexes on InP(110) surfaces. Physical Review B, 1996, 53, 4580-4590.	3.2	59
44	Coherent Control of a V-Type Three-Level System in a Single Quantum Dot. Physical Review Letters, 2005, 95, 187404.	7.8	58
45	Direct mapping of electronic structure acrossAl0.3Ga0.7As/GaAs heterojunctions: Band offsets, asymmetrical transition widths, and multiple-valley band structures. Physical Review Letters, 1993, 71, 1883-1886.	7.8	57
46	Tailoring excitonic states of van der Waals bilayers through stacking configuration, band alignment, and valley spin. Science Advances, 2019, 5, eaax7407.	10.3	56
47	Bandgap renormalization and work function tuning in MoSe2/hBN/Ru(0001) heterostructures. Nature Communications, 2016, 7, 13843.	12.8	55
48	Time-resolved photoluminescence spectroscopy of individual Te impurity centers inZnSe. Physical Review B, 2006, 73, .	3.2	50
49	Direct determination of exact charge states of surface point defects using scanning tunneling microscopy: As vacancies on GaAs (110). Physical Review B, 1996, 53, 6935-6938.	3.2	49
50	Energy Transfer within Ultralow Density Twin InAs Quantum Dots Grown by Droplet Epitaxy. ACS Nano, 2008, 2, 2219-2224.	14.6	48
51	Strain relaxation in single crystal SrTiO3 grown on Si (001) by molecular beam epitaxy. Journal of Applied Physics, 2012, 111, .	2.5	48
52	Ultrathin two-dimensional superconductivity with strong spinâ€“orbit coupling. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10513-10517.	7.1	48
53	Dimer-vacancyâ€“dimer-vacancy interaction on the Si(001) surface: The nature of the 2Ã—nstructure. Physical Review B, 1995, 52, R8650-R8653.	3.2	47
54	Mapping the 3D surface potential in Bi2Se3. Nature Communications, 2013, 4, 2277.	12.8	46

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55	Enhanced Photoluminescence of Monolayer WS₂ on Ag Films and Nanowireâ€“WS₂â€“Film Composites. ACS Photonics, 2017, 4, 1421-1430.	6.6	46
56	Dielectric impact on exciton binding energy and quasiparticle bandgap in monolayer WS ₂ and WSe ₂. 2D Materials, 2019, 6, 025028.	4.4	44
57	Determination of 2D Pair Correlations and Pair Interaction Energies of In Atoms in Molecular Beam Epitaxially Grown InGaAs Alloys. Physical Review Letters, 1997, 79, 4822-4825.	7.8	43
58	Quantum Growth of Magnetic Nanoplatelets of Co on Si with High Blocking Temperature. Nano Letters, 2005, 5, 87-90.	9.1	43
59	Epitaxial Aluminum-on-Sapphire Films as a Plasmonic Material Platform for Ultraviolet and Full Visible Spectral Regions. ACS Photonics, 2018, 5, 2624-2630.	6.6	43
60	Double-tip scanning tunneling microscope for surface analysis. Physical Review B, 1995, 51, 5502-5505.	3.2	42
61	Epitaxial Growth of Two-Dimensional Insulator Monolayer Honeycomb BeO. ACS Nano, 2021, 15, 2497-2505.	14.6	42
62	Quantitative Determination of the Metastability of Flat Ag Overlayers on GaAs(110). Physical Review Letters, 2001, 88, 016102.	7.8	41
63	Spatial correlation-anticorrelation in strain-driven self-assembled InGaAs quantum dots. Applied Physics Letters, 2004, 85, 1356-1358.	3.3	40
64	Structural Characterization and Temperatureâ€Đependent Photoluminescence of Linear CdTe/CdSe/CdTe Heterostructure Nanorods. ChemPhysChem, 2008, 9, 1158-1163.	2.1	40
65	Site-selective imaging in scanning tunneling microscopy of graphite: The nature of site asymmetry. Physical Review B, 1993, 47, 13059-13062.	3.2	39
66	Monolayer 1T-NbSe ₂ as a 2D-correlated magnetic insulator. Science Advances, 2021, 7, eabi6339.	10.3	39
67	Crossâ€sectional scanning tunneling microscopy study of GaAs/AlAs short period superlattices: The influence of growth interrupt on the interfacial structure. Applied Physics Letters, 1995, 66, 478-480.	3.3	38
68	Tailoring Plasmonic Enhanced Upconversion in Single NaYF4:Yb3+/Er3+ Nanocrystals. Scientific Reports, 2015, 5, 10196.	3.3	38
69	Engineering Point-Defect States in Monolayer WSe₂. ACS Nano, 2019, 13, 1595-1602.	14.6	35
70	A new highâ€resolution twoâ€dimensional micropositioning device for scanning probe microscopy applications. Review of Scientific Instruments, 1994, 65, 3216-3219.	1.3	34
71	Tuning Band Gap and Work Function Modulations in Monolayer hBN/Cu(111) Heterostructures with MoirÃ© Patterns. ACS Nano, 2018, 12, 9355-9362.	14.6	33
72	Cascaded exciton energy transfer in a monolayer semiconductor lateral heterostructure assisted by surface plasmon polariton. Nature Communications, 2017, 8, 35.	12.8	32

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73	Giant Enhancement of Defect-Bound Exciton Luminescence and Suppression of Band-Edge Luminescence in Monolayer WSe₂â€“Ag Plasmonic Hybrid Structures. Nano Letters, 2017, 17, 4317-4322.	9.1	31
74	Photophysics of Thermally-Assisted Photobleaching in â€œGiantâ€•Quantum Dots Revealed in Single Nanocrystals. ACS Nano, 2018, 12, 4206-4217.	14.6	31
75	Direct Spectroscopic Evidence for the Formation of One-Dimensional Wetting Wires During the Growth of InGaAs/GaAs Quantum Dot Chains. Nano Letters, 2006, 6, 1847-1851.	9.1	30
76	Polarization conversion in a silica microsphere. Optics Express, 2007, 15, 7000.	3.4	30
77	Scanning tunneling microscopy of GaAs multiplepnjunctions. Applied Physics Letters, 1992, 61, 1104-1106.	3.3	28
78	Alloy ordering in GaInP alloys: A cross-sectional scanning tunneling microscopy study. Applied Physics Letters, 1998, 73, 1979-1981.	3.3	28
79	Correlating Electronic Transport to Atomic Structures in Self-Assembled Quantum Wires. Nano Letters, 2012, 12, 938-942.	9.1	28
80	Time-resolved ARPES Determination of a Quasi-Particle Band Gap and Hot Electron Dynamics in Monolayer MoS₂. Nano Letters, 2021, 21, 7363-7370.	9.1	28
81	Single dot spectroscopy of site-controlled InAs quantum dots nucleated on GaAs nanopyramids. Applied Physics Letters, 2007, 91, 133104.	3.3	27
82	Low-Threshold Plasmonic Lasers on a Single-Crystalline Epitaxial Silver Platform at Telecom Wavelength. ACS Photonics, 2017, 4, 1431-1439.	6.6	27
83	Photoluminescence properties of single CdS nanorods. Journal of Applied Physics, 2004, 95, 1056-1063.	2.5	26
84	Whispering gallery mode microresonators as polarization converters. Optics Letters, 2007, 32, 2224.	3.3	26
85	Unveiling defect-mediated carrier dynamics in monolayer semiconductors by spatiotemporal microwave imaging. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 13908-13913.	7.1	24
86	Quantum dots at the nanometer scale:â€ƒInterdot carrier shuffling and multiparticle states. Physical Review B, 1999, 60, 11026-11029.	3.2	23
87	Compact low temperature scanning tunneling microscope with in-situ sample preparation capability. Review of Scientific Instruments, 2015, 86, 093707.	1.3	23
88	Three-dimensional modeling of nanoscale Seebeck measurements by scanning thermoelectric microscopy. Applied Physics Letters, 2005, 87, 053115.	3.3	22
89	Universal quenching of the superconducting state of two-dimensional nanosize Pb-island structures. Physical Review B, 2011, 84, .	3.2	22
90	Vacancy migration, adatom motion, and atomic bistability on the GaAs(110) surface studied by scanning tunneling microscopy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1993, 11, 1644-1648.	2.1	21

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91	Factors influencing the interfacial roughness of InGaAs/GaAs heterostructures: A scanning tunneling microscopy study. Applied Physics Letters, 1999, 75, 1703-1705.	3.3	21
92	VLS growth of Si nanocones using Ga and Al catalysts. Journal of Crystal Growth, 2008, 310, 4407-4411.	1.5	21
93	Tailoring Semiconductor Lateral Multijunctions for Giant Photoconductivity Enhancement. Advanced Materials, 2017, 29, 1703680.	21.0	21
94	Tuning of Two-Dimensional Plasmonâ€“Exciton Coupling in Full Parameter Space: A Polaritonic Non-Hermitian System. Nano Letters, 2021, 21, 2596-2602.	9.1	21
95	Cross-sectional nanophotoluminescence studies of Stark effects in self-assembled quantum dots. Applied Physics Letters, 2000, 76, 700-702.	3.3	20
96	Epitaxial Growth of Optically Thick, Single Crystalline Silver Films for Plasmonics. ACS Applied Materials & Interfaces, 2019, 11, 3189-3195.	8.0	20
97	Dislocations, Phason Defects, and Domain Walls in a One-Dimensional Quasiperiodic Superstructure of a Metallic Thin Film. Physical Review Letters, 1999, 83, 3222-3225.	7.8	19
98	Role of thermal processes in dewetting of epitaxial Ag(111) film on Si(111). Surface Science, 2014, 630, 168-173.	1.9	17
99	Engineering Giant Rabi Splitting via Strong Coupling between Localized and Propagating Plasmon Modes on Metal Surface Lattices: Observation of âˆšN Scaling Rule. Nano Letters, 2021, 21, 605-611.	9.1	17
100	Temperature dependent compensation of Znâ€dopant atoms by vacancies in IIIâ€“V semiconductor surfaces. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1996, 14, 1807-1811.	2.1	15
101	Terahertz Faraday and Kerr rotation spectroscopy of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Bi</mml:mi><mml:mrow><mml:mn>2</mml:mn><mml:mn>1</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math> films in high magnetic fields up to 30 tesla. Physical Review B, 2019, 100, .	3.2	15
102	Microscopic investigation of Bi2-xSbxTe3-ySey systems: On the origin of a robust intrinsic topological insulator. Journal of Physics and Chemistry of Solids, 2019, 128, 251-257.	4.0	15
103	New variable lowâ€temperature scanning tunneling microscope for use in ultrahigh vacuum. Review of Scientific Instruments, 1995, 66, 2499-2503.	1.3	14
104	Site-controlled formation of InGaAs quantum nanostructures-Tailoring the dimensionality and the quantum confinement. Nano Research, 2013, 6, 235-242.	10.4	14
105	Optical dielectric constants of single crystalline silver films in the long wavelength range. Optical Materials Express, 2020, 10, 693.	3.0	13
106	Epitaxial aluminum plasmonics covering full visible spectrum. Nanophotonics, 2020, 10, 627-637.	6.0	13
107	Crossâ€sectional scanning tunneling microscopy of doped and undoped AlGaAs/GaAs heterostructures. Applied Physics Letters, 1994, 64, 493-495.	3.3	12
108	Contrast between Surface Plasmon Polariton-Mediated Extraordinary Optical Transmission Behavior in Epitaxial and Polycrystalline Ag Films in the Mid- and Far-Infrared Regimes. Nano Letters, 2012, 12, 6187-6191.	9.1	11

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109	Anomalous phase relations of quantum size effects in ultrathin Pb films on Si(111). Physical Review B, 2013, 87, .	3.2	11
110	Zeeman-limited superconductivity in crystalline Al films. Physical Review B, 2017, 95, .	3.2	11
111	Geometric quenching of orbital pair breaking in a single crystalline superconducting nanomesh network. Nature Communications, 2018, 9, 5431.	12.8	11
112	Observation of Coulomb repulsion between Cu intercalants inCuxBi2Se3. Physical Review B, 2014, 89, .	3.2	10
113	Microscopic Real-Space Resistance Mapping Across CdTe Solar Cell Junctions by Scanning Spreading Resistance Microscopy. IEEE Journal of Photovoltaics, 2015, 5, 395-400.	2.5	9
114	Enhancement of Plasmonic Performance in Epitaxial Silver at Low Temperature. Scientific Reports, 2017, 7, 8917.	3.3	9
115	Adsorbate-induced restructuring of Pb mesas grown on vicinal Si(111) in the quantum regime. Physical Review B, 2009, 80, .	3.2	8
116	In situ/non-contact superfluid density measurement apparatus. Review of Scientific Instruments, 2018, 89, 043901.	1.3	8
117	Application of scanning tunneling microscopy to determine the exact charge states of surface point defects. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1996, 14, 948.	1.6	6
118	Interrogating the superconductor Ca10(Pt4As8)(Fe2â^'xPtxAs2)5 Layer-by-layer. Scientific Reports, 2016, 6, 35365.	3.3	6
119	PTCDA Molecular Monolayer on Pb Thin Films: An Unusual <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Ï€</mml:mi></mml:math> -Electron Kondo System and Its Interplay with a Quantum-Confined Superconductor. Physical Review Letters, 2021, 127, 186805.	7.8	6
120	Visualizing quantum well state perturbations of metallic thin films near stacking fault defects. Physical Review B, 2010, 81, .	3.2	5
121	Influence of quantum well states on the formation of Auâ€“Pb alloy in ultra-thin Pb films. Surface Science, 2015, 632, 174-179.	1.9	5
122	Behavior of superconductivity in a Pb/Ag heterostructure. Physical Review B, 2019, 100, .	3.2	5
123	Influence of Nanosize Hole Defects and their Geometric Arrangements on the Superfluid Density in Atomically Thin Single Crystals of Indium Superconductor. Physical Review Letters, 2021, 127, 127003.	7.8	5
124	Giant Up-Conversion Efficiency of InGaAs Quantum Dots in a Planar Microcavity. Scientific Reports, 2015, 4, 3953.	3.3	4
125	Tuning the Proximity Effect through Interface Engineering in a Pb/Graphene/Pt Trilayer System. ACS Nano, 2016, 10, 4520-4524.	14.6	4
126	Pattern formation of nanoflowers during the vaporâ€“liquidâ€“solid growth of silicon nanowires. Physica B: Condensed Matter, 2008, 403, 3514-3518.	2.7	3

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127	Atomic-scale tailoring of spin susceptibility via non-magnetic spin-orbit impurities. Communications Physics, 2018, 1, .	5.3	2
128	Momentum-Resolved Electronic Structures of a Monolayer-MoS2/Multilayer-MoSe2 Heterostructure. Journal of Physical Chemistry C, 2021, 125, 16591-16597.	3.1	2
129	All-color plasmonic nanolasers with ultralow thresholds. , 2013, , .		1
130	Coherently coupled quantum-well states in bimetallic Pb/Ag thin films. Physical Review B, 2020, 102, .	3.2	1
131	MoirÃ© excitons at line defects in transition metal dichalcogenides heterobilayers. Comptes Rendus Physique, 2021, 22, 53-68.	0.9	1
132	Critical role of parallel momentum in quantum well state couplings in multi-stacked nanofilms: An angle resolved photoemission study. AIP Advances, 2020, 10, 125211.	1.3	1
133	Growing atomically flat metal films on semiconductor substrates. Series on Directions in Condensed Matter Physics, 1999, , 438-449.	0.1	0
134	Nano-Photoluminescence Studies of Self-Assembled Quantum Dots. Materials Research Society Symposia Proceedings, 1999, 583, 105.	0.1	0
135	Non-thermal emission from InGaAs quantum dots in a microcavity: A novel cavity-bottleneck effect. , 2006, , .		0
136	Internal and external polarization memory loss in single quantum dots. , 2006, , .		0
137	Supercurrents Get Lean. Physics Magazine, 2011, 4, .	0.1	0
138	Polarization-resolved resonant fluorescence of a single semiconductor quantum dot. Applied Physics Letters, 2012, 101, 251118.	3.3	0
139	Atomic scale control of catalytic process in oxidation of Pb thin films. Surface Science, 2012, 606, 450-455.	1.9	0
140	Nanometer-scale study of resistance on CdTe solar cell devices. , 2014, , .		0
141	Photoconductivity: Tailoring Semiconductor Lateral Multijunctions for Giant Photoconductivity Enhancement (Adv. Mater. 41/2017). Advanced Materials, 2017, 29, .	21.0	0
142	Quantum upside-down cake. Nature, 2018, 555, 36-37.	27.8	0
143	Quantum Effect in Metal Overlayers on Semiconductor Substrates. Series on Directions in Condensed Matter Physics, 1999, , 149-173.	0.1	0