Emmanuel Lhuillier

List of Publications by Year
in descending order

142	5,502	76326	88630
papers	citations	40 h-index	70 g-index

144	144	144	5561
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Two-Dimensional Colloidal Nanocrystals. Chemical Reviews, 2016, 116, 10934-10982.	47.7	412
2	Mid-infrared HgTe colloidal quantum dot photodetectors. Nature Photonics, 2011, 5, 489-493.	31.4	389
3	Synthesis of Colloidal HgTe Quantum Dots for Narrow Mid-IR Emission and Detection. Journal of the American Chemical Society, 2011, 133, 16422-16424.	13.7	248
4	Two-Dimensional Colloidal Metal Chalcogenides Semiconductors: Synthesis, Spectroscopy, and Applications. Accounts of Chemical Research, 2015, 48, 22-30.	15.6	248
5	A colloidal quantum dot infrared photodetector and its use for intraband detection. Nature Communications, 2019, 10, 2125.	12.8	155
6	van der Waals Epitaxy of GaSe/Graphene Heterostructure: Electronic and Interfacial Properties. ACS Nano, 2016, 10, 9679-9686.	14.6	154
7	Infrared Photodetection Based on Colloidal Quantum-Dot Films with High Mobility and Optical Absorption up to THz. Nano Letters, 2016, 16, 1282-1286.	9.1	150
8	Midâ€Infrared HgTe/As₂S₃ Field Effect Transistors and Photodetectors. Advanced Materials, 2013, 25, 137-141.	21.0	108
9	Fine structure of excitons and electronâ€“hole exchange energy in polymorphic CsPbBr₃single nanocrystals. Nanoscale, 2018, 10, 6393-6401.	5.6	108
10	Terahertz HgTe Nanocrystals: Beyond Confinement. Journal of the American Chemical Society, 2018, 140, 5033-5036.	13.7	107
11	Negatively Charged and Dark Excitons in CsPbBr₃ Perovskite Nanocrystals Revealed by High Magnetic Fields. Nano Letters, 2017, 17, 6177-6183.	9.1	103
12	Optimized Synthesis of CdTe Nanoplatelets and Photoresponse of CdTe Nanoplatelets Films. Chemistry of Materials, 2013, 25, 2455-2462.	6.7	99
13	Strongly Confined HgTe 2D Nanoplatelets as Narrow Near-Infrared Emitters. Journal of the American Chemical Society, 2016, 138, 10496-10501.	13.7	98
14	Spin-Orbit induced phase-shift in Bi2Se3 Josephson junctions. Nature Communications, 2019, 10, 126.	12.8	97
15	Electrolyte-Gated Colloidal Nanoplatelets-Based Phototransistor and Its Use for Bicolor Detection. Nano Letters, 2014, 14, 2715-2719.	9.1	94
16	Optical properties of HgTe colloidal quantum dots. Nanotechnology, 2012, 23, 175705.	2.6	87
17	Recent Progresses in Mid Infrared Nanocrystal Optoelectronics. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 1-8.	2.9	83
18	Large area molybdenum disulphide- epitaxial graphene vertical Van der Waals heterostructures. Scientific Reports, 2016, 6, 26656.	3.3	73

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19	1/f noise in semiconductor and metal nanocrystal solids. Journal of Applied Physics, 2014, 115, .	2.5	72
20	Halide Ligands To Release Strain in Cadmium Chalcogenide Nanoplatelets and Achieve High Brightness. ACS Nano, 2019, 13, 5326-5334.	14.6	71
21	Mercury Chalcogenide Quantum Dots: Material Perspective for Device Integration. Chemical Reviews, 2021, 121, 3627-3700.	47.7	70
22	Exciton-phonon coupling in a CsPbBr3 single nanocrystal. Applied Physics Letters, 2018, 112, .	3.3	67
23	Surface Control of Doping in Self-Doped Nanocrystals. ACS Applied Materials & Interfaces, 2016, 8, 27122-27128.	8.0	66
24	Electronic band structure of Two-Dimensional <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">WS</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> /Graphene van der Waals Heterostructures. Physical Review B, 2018, 97, .	3.2	63
25	Electrolyte-Gated Field Effect Transistor to Probe the Surface Defects and Morphology in Films of Thick CdSe Colloidal Nanoplatelets. ACS Nano, 2014, 8, 3813-3820.	14.6	61
26	Reconfigurable 2D/0D pâ€“n Graphene/HgTe Nanocrystal Heterostructure for Infrared Detection. ACS Nano, 2020, 14, 4567-4576.	14.6	60
27	Nanoplatelets Bridging a Nanotrench: A New Architecture for Photodetectors with Increased Sensitivity. Nano Letters, 2015, 15, 1736-1742.	9.1	59
28	Intraband Mid-Infrared Transitions in Ag₂Se Nanocrystals: Potential and Limitations for Hg-Free Low-Cost Photodetection. Journal of Physical Chemistry C, 2018, 122, 18161-18167.	3.1	59
29	Investigating the n- and p-Type Electrolytic Charging of Colloidal Nanoplatelets. Journal of Physical Chemistry C, 2015, 119, 21795-21799.	3.1	57
30	Interface dipole and band bending in the hybrid <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>p</mml:mi><mml:mo>â^'</mml:mo><mml:mi>n</mml:mi> heterojunction <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mo>/</mml:mo><mml:mi>GaN</mml:mi></mml:mrow>< Physical Review B, 2017, 96, .	3.2	57
31	HgTe Nanocrystals for SWIR Detection and Their Integration up to the Focal Plane Array. ACS Applied Materials & Interfaces, 2019, 11, 33116-33123.	8.0	53
32	Road Map for Nanocrystal Based Infrared Photodetectors. Frontiers in Chemistry, 2018, 6, 575.	3.6	52
33	HgTe Nanocrystal Inks for Extended Shortâ€Wave Infrared Detection. Advanced Optical Materials, 2019, 7, 1900348.	7.3	52
34	Design of a Unipolar Barrier for a Nanocrystal-Based Short-Wave Infrared Photodiode. ACS Photonics, 2018, 5, 4569-4576.	6.6	49
35	Short Wave Infrared Devices Based on HgTe Nanocrystals with Air Stable Performances. Journal of Physical Chemistry C, 2018, 122, 14979-14985.	3.1	49
36	Charge Dynamics and Optolectronic Properties in HgTe Colloidal Quantum Wells. Nano Letters, 2017, 17, 4067-4074.	9.1	48

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37	Doping as a Strategy to Tune Color of 2D Colloidal Nanoplatelets. ACS Applied Materials & Interfaces, 2019, 11, 10128-10134.	8.0	48
38	Valence band inversion and spin-orbit effects in the electronic structure of monolayer GaSe. Physical Review B, 2018, 98, .	3.2	47
39	Near Unity Absorption in Nanocrystal Based Short Wave Infrared Photodetectors Using Guided Mode Resonators. ACS Photonics, 2019, 6, 2553-2561.	6.6	44
40	Thermal properties of mid-infrared colloidal quantum dot detectors. Journal of Applied Physics, 2011, 110, .	2.5	43
41	Electrolytic phototransistor based on graphene-MoS2 van der Waals p-n heterojunction with tunable photoresponse. Applied Physics Letters, 2016, 109, .	3.3	41
42	HgSe Self-Doped Nanocrystals as a Platform to Investigate the Effects of Vanishing Confinement. ACS Applied Materials & Interfaces, 2017, 9, 36173-36180.	8.0	40
43	Strong interlayer hybridization in the aligned SnS2/WSe2 hetero-bilayer structure. Npj 2D Materials and Applications, 2019, 3, .	7.9	39
44	A mirage study of CdSe colloidal quantum dot films, Urbach tail, and surface states. Journal of Chemical Physics, 2012, 137, 154704.	3.0	37
45	Probing Charge Carrier Dynamics to Unveil the Role of Surface Ligands in HgTe Narrow Band Gap Nanocrystals. Journal of Physical Chemistry C, 2018, 122, 859-865.	3.1	37
46	Selective Electrophoretic Deposition of CdSe Nanoplatelets. Chemistry of Materials, 2014, 26, 4514-4520.	6.7	36
47	Complex Optical Index of HgTe Nanocrystal Infrared Thin Films and Its Use for Short Wave Infrared Photodiode Design. Advanced Optical Materials, 2021, 9, 2002066.	7.3	36
48	Infrared photoconduction at the diffusion length limit in HgTe nanocrystal arrays. Nature Communications, 2021, 12, 1794.	12.8	35
49	Coupled HgSe Colloidal Quantum Wells through a Tunable Barrier: A Strategy To Uncouple Optical and Transport Band Gap. Chemistry of Materials, 2018, 30, 4065-4072.	6.7	32
50	Indirect to direct band gap crossover in two-dimensional WS2(1â^'x)Se2x alloys. Npj 2D Materials and Applications, 2021, 5, .	7.9	31
51	Metallic Functionalization of CdSe 2D Nanoplatelets and Its Impact on Electronic Transport. Journal of Physical Chemistry C, 2016, 120, 12351-12361.	3.1	29
52	Electronic structure robustness and design rules for 2D colloidal heterostructures. Journal of Applied Physics, 2018, 123, .	2.5	29
53	The Strong Confinement Regime in HgTe Two-Dimensional Nanoplatelets. Journal of Physical Chemistry C, 2020, 124, 23460-23468.	3.1	29
54	Autocorrelation Analysis for the Unbiased Determination of Power-Law Exponents in Single-Quantum-Dot Blinking. ACS Nano, 2015, 9, 886-893.	14.6	28

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55	Electroluminescence from HgTe Nanocrystals and Its Use for Active Imaging. Nano Letters, 2020, 20, 6185-6190.	9.1	28
56	Photoconductive focal plane array based on HgTe quantum dots for fast and cost-effective short-wave infrared imaging. Nanoscale, 2022, 14, 9359-9368.	5.6	28
57	Emergence of intraband transitions in colloidal nanocrystals [Invited]. Optical Materials Express, 2018, 8, 1174.	3.0	27
58	Engineering Bicolor Emission in 2D Core/Crown CdSe/CdSe_{1â€“x}Te_x Nanoplatelet Heterostructures Using Band-Offset Tuning. Journal of Physical Chemistry C, 2017, 121, 24816-24823.	3.1	26
59	Evidence for a narrow band gap phase in 1Tâ€² WS2 nanosheet. Applied Physics Letters, 2019, 115, .	3.3	25
60	Electroluminescence from nanocrystals above 2â€‰Âµm. Nature Photonics, 2022, 16, 38-44.	31.4	25
61	Wave-Function Engineering in HgSe/HgTe Colloidal Heterostructures To Enhance Mid-infrared Photoconductive Properties. Nano Letters, 2018, 18, 4590-4597.	9.1	24
62	Ionic Glassâ€“Gated 2D Materialâ€“Based Phototransistor: MoSe₂ over LaF₃ as Case Study. Advanced Functional Materials, 2019, 29, 1902723.	14.9	24
63	Transport in a Single Self-Doped Nanocrystal. ACS Nano, 2017, 11, 1222-1229.	14.6	23
64	Band Edge Dynamics and Multiexciton Generation in Narrow Band Gap HgTe Nanocrystals. ACS Applied Materials & Interfaces, 2018, 10, 11880-11887.	8.0	23
65	Field-Effect Transistor and Photo-Transistor of Narrow-Band-Gap Nanocrystal Arrays Using Ionic Glasses. Nano Letters, 2019, 19, 3981-3986.	9.1	23
66	Nanoplatelet-Based Light-Emitting Diode and Its Use in All-Nanocrystal LiFi-like Communication. ACS Applied Materials & Interfaces, 2020, 12, 22058-22065.	8.0	23
67	Ferroelectric Gating of Narrow Band-Gap Nanocrystal Arrays with Enhanced Lightâ€“Matter Coupling. ACS Photonics, 2021, 8, 259-268.	6.6	23
68	Surface Modification of CdE (E: S, Se, and Te) Nanoplatelets to Reach Thicker Nanoplatelets and Homostructures with Confinement-Induced Intraparticle Type I Energy Level Alignment. Journal of the American Chemical Society, 2021, 143, 1863-1872.	13.7	23
69	Correlating Structure and Detection Properties in HgTe Nanocrystal Films. Nano Letters, 2021, 21, 4145-4151.	9.1	23
70	Electronic structure of CdSe-ZnS 2D nanoplatelets. Applied Physics Letters, 2017, 110, .	3.3	21
71	Strategy to overcome recombination limited photocurrent generation in CsPbX3 nanocrystal arrays. Applied Physics Letters, 2018, 112, .	3.3	19
72	Transport in ITO Nanocrystals with Short- to Long-Wave Infrared Absorption for Heavy-Metal-Free Infrared Photodetection. ACS Applied Nano Materials, 2019, 2, 1621-1630.	5.0	19

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73	From Chains to Monolayers: Nanoparticle Assembly Driven by Smectic Topological Defects. Nano Letters, 2020, 20, 1598-1606.	9.1	19
74	Colloidal HgTe Material for Low-Cost Detection into the MWIR. Journal of Electronic Materials, 2012, 41, 2725-2729.	2.2	18
75	Colloidal quantum dots for mid-IR applications. Infrared Physics and Technology, 2013, 59, 133-136.	2.9	18
76	Optoelectronic properties of methyl-terminated germanane. Applied Physics Letters, 2019, 115, .	3.3	18
77	Impact of dimensionality and confinement on the electronic properties of mercury chalcogenide nanocrystals. Nanoscale, 2019, 11, 3905-3915.	5.6	18
78	Effect of Pressure on Interband and Intraband Transition of Mercury Chalcogenide Quantum Dots. Journal of Physical Chemistry C, 2019, 123, 13122-13130.	3.1	18
79	Pushing Absorption of Perovskite Nanocrystals into the Infrared. Nano Letters, 2020, 20, 3999-4006.	9.1	18
80	Coherent Spin Dynamics of Electrons and Holes in CsPbBr₃ Colloidal Nanocrystals. Nano Letters, 2021, 21, 8481-8487.	9.1	18
81	Polyoxometalate as Control Agent for the Doping in HgSe Self-Doped Nanocrystals. Journal of Physical Chemistry C, 2018, 122, 26680-26685.	3.1	16
82	Highly Photostable Perovskite Nanocubes: Toward Integrated Single Photon Sources Based on Tapered Nanofibers. ACS Photonics, 2020, 7, 2265-2272.	6.6	16
83	Seeded Growth of HgTe Nanocrystals for Shape Control and Their Use in Narrow Infrared Electroluminescence. Chemistry of Materials, 2021, 33, 2054-2061.	6.7	16
84	Gate tunable vertical geometry phototransistor based on infrared HgTe nanocrystals. Applied Physics Letters, 2020, 117, .	3.3	16
85	Optimized Infrared LED and Its Use in an Allâ€HgTe Nanocrystalâ€Based Active Imaging Setup. Advanced Optical Materials, 2022, 10, .	7.3	16
86	Interface roughness transport in terahertz quantum cascade detectors. Applied Physics Letters, 2010, 96, 061111.	3.3	15
87	Bias Tunable Spectral Response of Nanocrystal Array in a Plasmonic Cavity. Nano Letters, 2021, 21, 6671-6677.	9.1	15
88	Near- to Long-Wave-Infrared Mercury Chalcogenide Nanocrystals from Liquid Mercury. Journal of Physical Chemistry C, 2020, 124, 8423-8430.	3.1	14
89	Optimized Cation Exchange for Mercury Chalcogenide 2D Nanoplatelets and Its Application for Alloys. Chemistry of Materials, 2021, 33, 9252-9261.	6.7	14
90	Potential of Colloidal Quantum Dot Based Solar Cells for Near-Infrared Active Detection. ACS Photonics, 2020, 7, 272-278.	6.6	13

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91	HgTe Nanocrystal-Based Photodiode for Extended Short-Wave Infrared Sensing with Optimized Electron Extraction and Injection. ACS Applied Nano Materials, 2022, 5, 8602-8611.	5.0	13
92	Time-Resolved Photoemission to Unveil Electronic Coupling between Absorbing and Transport Layers in a Quantum Dot-Based Solar Cell. Journal of Physical Chemistry C, 2020, 124, 23400-23409.	3.1	12
93	Chiral Helices Formation by Self-Assembled Molecules on Semiconductor Flexible Substrates. ACS Nano, 2022, 16, 2901-2909.	14.6	12
94	Evidence for highly p-type doping and type II band alignment in large scale monolayer WSe₂/Se-terminated GaAs heterojunction grown by molecular beam epitaxy. Nanoscale, 2022, 14, 5859-5868.	5.6	12
95	Broadband Enhancement of Midâ€Wave Infrared Absorption in a Multiâ€Resonant Nanocrystalâ€Based Device. Advanced Optical Materials, 2022, 10, .	7.3	12
96	Split-Gate Photodiode Based on Graphene/HgTe Heterostructures with a Few Nanosecond Photoresponse. ACS Applied Electronic Materials, 2021, 3, 4681-4688.	4.3	11
97	Revealing the Band Structure of FAPI Quantum Dot Film and Its Interfaces with Electron and Hole Transport Layer Using Time Resolved Photoemission. Journal of Physical Chemistry C, 2020, 124, 3873-3880.	3.1	10
98	Few picosecond dynamics of intraband transitions in THz HgTe nanocrystals. Nanophotonics, 2021, 10, 2753-2763.	6.0	10
99	Guided-Mode Resonator Coupled with Nanocrystal Intraband Absorption. ACS Photonics, 2022, 9, 985-993.	6.6	10
100	Anisotropic shape of CsPbBr₃ colloidal nanocrystals: from 1D to 2D confinement effects. Nanoscale, 2020, 12, 18978-18986.	5.6	9
101	2D Monolayer of the 1Tâ€™ Phase of Alloyed WSSe from Colloidal Synthesis. Journal of Physical Chemistry C, 2021, 125, 11058-11065.	3.1	9
102	Investigation of charge transport properties of [1]Benzothieno[3,2-b][1]-benzothiophene single-crystals in field-effect transistor configuration. Organic Electronics, 2020, 78, 105605.	2.6	8
103	Spontaneous Emission of Vector Vortex Beams. Physical Review Applied, 2020, 14, .	3.8	8
104	The complex optical index of PbS nanocrystal thin films and their use for short wave infrared sensor design. Nanoscale, 2022, 14, 2711-2721.	5.6	8
105	Anomalous Absorption in Arrays of Metallic Nanoparticles: A Powerful Tool for Quantum Dot Optoelectronics. Nano Letters, 2022, 22, 2155-2160.	9.1	8
106	Electronic properties of (Sb;Bi)2Te3 colloidal heterostructured nanoplates down to the single particle level. Scientific Reports, 2017, 7, 9647.	3.3	7
107	Nanocrystal-Based Active Photonics Device through Spatial Design of Light-Matter Coupling. ACS Photonics, 2022, 9, 2528-2535.	6.6	7
108	Nondestructive Encapsulation of CdSe/CdS Quantum Dots in an Inorganic Matrix by Pulsed Laser Deposition. ACS Applied Materials & Interfaces, 2016, 8, 22361-22368.	8.0	6

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109	Structural and electronic transitions in few layers of isotopically pure hexagonal boron nitride. Physical Review B, 2020, 102, .	3.2	6
110	Identification of Two Regimes of Carrier Thermalization in PbS Nanocrystal Assemblies. Journal of Physical Chemistry Letters, 2021, 12, 5123-5131.	4.6	6
111	Quantum scattering engineering of quantum well infrared photodetectors in the tunneling regime. Journal of Applied Physics, 2010, 108, 113707.	2.5	5
112	Electronic coupling in the F4-TCNQ/single-layer GaSe heterostructure. Physical Review Materials, 2019, 3, .	2.4	5
113	15Î¼m Quantum Well Infrared Photodetector for thermometric imagery in cryogenic windtunnel. Infrared Physics and Technology, 2010, 53, 425-429.	2.9	4
114	Transport properties of mid-infrared colloidal quantum dot films. Proceedings of SPIE, 2012, , .	0.8	4
115	Investigation of the Selfâ€Doping Process in HgSe Nanocrystals. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1700294.	1.8	4
116	Electronic band gap of van der Waals Î±-As2Te3 crystals. Applied Physics Letters, 2021, 119, .	3.3	4
117	Colloidal IIâ€“VIâ€”Epitaxial IIIâ€“V heterostructure: A strategy to expand InGaAs spectral response. Applied Physics Letters, 2022, 120, .	3.3	4
118	Quantum well infrared photodetectors hardiness to the nonideality of the energy band profile. Journal of Applied Physics, 2010, 107, .	2.5	3
119	Azobenzenes as Light-Activable Carrier Density Switches in Nanocrystals. Journal of Physical Chemistry C, 2019, 123, 27257-27263.	3.1	3
120	Designing Photovoltaic Devices Using HgTe Nanocrystals for Short and Midâ€Wave Infrared Detection. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900449.	1.8	3
121	Dark current reduction in a long wavelength quantum well infrared photodetector operating at low temperature. Infrared Physics and Technology, 2011, 54, 189-193.	2.9	2
122	2D Colloidal Nanoplatelets based Optoelectronics. MRS Advances, 2016, 1, 2187-2192.	0.9	2
123	HgTe, the Most Tunable Colloidal Material: from the Strong Confinement Regime to THz Material. MRS Advances, 2018, 3, 2913-2921.	0.9	2
124	Interactions Between Topological Defects and Nanoparticles. Frontiers in Physics, 2020, 7, .	2.1	2
125	Shaping the spontaneous emission of extended incoherent sources into composite radial vector beams. Applied Physics Letters, 2021, 119, 181105.	3.3	1
126	Transport Properties of Methyl-Terminated Germanane Microcrystallites. Nanomaterials, 2022, 12, 1128.	4.1	1

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127	Broadband Enhancement of Midâ€Wave Infrared Absorption in a Multiâ€Resonant Nanocrystalâ€Based Device (Advanced Optical Materials 9/2022). Advanced Optical Materials, 2022, 10, .	7.3	1
128	Influence of Sawtooth Patterns on the Detection Properties of Quantum Well Infrared Photodetectors. IEEE Journal of Quantum Electronics, 2012, 48, 665-668.	1.9	0
129	Large HgTe nanocrystals for THz technology. , 2021, , .		0
130	Dynamics in Narrow Band Gap Nanocrystals. , 0, , .		0
131	Intraband transition in narrow band gap nanocrystals. , 0, , .		0
132	Engineering Bicolor Emission in 2D Core/Crown CdSe/CdSe1â€“xTex Nanoplatelet Heterostructures Using Band-Offset Tuning. , 0, , .		0
133	Designing Photovoltaic Devices Using HgTe Nanocrystals for SWIR and MWIR Detection. , 0, , .		0
134	Toward nanocrystal-based active nanophotonic device. , 0, , .		0
135	Control of carrier density in nanocrystal arrays applied to IR sensing. , 0, , .		0
136	Infrared active imaging using nanocrsytals. , 0, , .		0
137	Light-Matter Enhancement in Nanocrystal Film for Infrared Detection Using Guided Mode Resonance: Toward Unity Absorption. , 0, , .		0
138	Ionic glasses as an efficient gating strategy to tune the carrier density in narrow bandgap nanocrystal arrays. , 0, , .		0
139	Intraband transition in narrow band gap nanocrystals. , 0, , .		0
140	Engineering Bicolor Emission in 2D Core/Crown CdSe/CdSe1â€“xTex Nanoplatelet Heterostructures Using Band-Offset Tuning. , 0, , .		0
141	Dynamics in Narrow Band Gap Nanocrystals. , 0, , .		0
142	Designing Photovoltaic Devices Using HgTe Nanocrystals for SWIR and MWIR Detection. , 0, , .		0