Emmanuel Lhuillier

List of Publications by Year
in descending order

142 papers	5,502 citations	76196 40 h-index	91712 69 g-index
144 all docs	144 docs citations	144 times ranked	5561 citing authors

#	Article	IF	Citations
1	Colloidal IIâ€“VIâ€”Epitaxial IIIâ€“V heterostructure: A strategy to expand InGaAs spectral response. Applied Physics Letters, 2022, 120, .	1.5	4
2	The complex optical index of PbS nanocrystal thin films and their use for short wave infrared sensor design. Nanoscale, 2022, 14, 2711-2721.	2.8	8
3	Anomalous Absorption in Arrays of Metallic Nanoparticles: A Powerful Tool for Quantum Dot Optoelectronics. Nano Letters, 2022, 22, 2155-2160.	4.5	8
4	Chiral Helices Formation by Self-Assembled Molecules on Semiconductor Flexible Substrates. ACS Nano, 2022, 16, 2901-2909.	7.3	12
5	Guided-Mode Resonator Coupled with Nanocrystal Intraband Absorption. ACS Photonics, 2022, 9, 985-993.	3.2	10
6	Electroluminescence from nanocrystals above 2â€‰Âµm. Nature Photonics, 2022, 16, 38-44.	15.6	25
7	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.	2.8	12
8	Transport Properties of Methyl-Terminated Germanane Microcrystallites. Nanomaterials, 2022, 12, 1128.	1.9	1
9	Broadband Enhancement of Midâ€Wave Infrared Absorption in a Multiâ€Resonant Nanocrystalâ€Based Device. Advanced Optical Materials, 2022, 10, .	3.6	12
10	Optimized Infrared LED and Its Use in an Allâ€HgTe Nanocrystalâ€Based Active Imaging Setup. Advanced Optical Materials, 2022, 10, .	3.6	16
11	Broadband Enhancement of Midâ€Wave Infrared Absorption in a Multiâ€Resonant Nanocrystalâ€Based Device (Advanced Optical Materials 9/2022). Advanced Optical Materials, 2022, 10, .	3.6	1
12	Photoconductive focal plane array based on HgTe quantum dots for fast and cost-effective short-wave infrared imaging. Nanoscale, 2022, 14, 9359-9368.	2.8	28
13	HgTe Nanocrystal-Based Photodiode for Extended Short-Wave Infrared Sensing with Optimized Electron Extraction and Injection. ACS Applied Nano Materials, 2022, 5, 8602-8611.	2.4	13
14	Nanocrystal-Based Active Photonics Device through Spatial Design of Light-Matter Coupling. ACS Photonics, 2022, 9, 2528-2535.	3.2	7
15	Ferroelectric Gating of Narrow Band-Gap Nanocrystal Arrays with Enhanced Lightâ€“Matter Coupling. ACS Photonics, 2021, 8, 259-268.	3.2	23
16	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.	6.6	23
17	Complex Optical Index of HgTe Nanocrystal Infrared Thin Films and Its Use for Short Wave Infrared Photodiode Design. Advanced Optical Materials, 2021, 9, 2002066.	3.6	36
18	Seeded Growth of HgTe Nanocrystals for Shape Control and Their Use in Narrow Infrared Electroluminescence. Chemistry of Materials, 2021, 33, 2054-2061.	3.2	16

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19	Infrared photoconduction at the diffusion length limit in HgTe nanocrystal arrays. Nature Communications, 2021, 12, 1794.	5.8	35
20	Mercury Chalcogenide Quantum Dots: Material Perspective for Device Integration. Chemical Reviews, 2021, 121, 3627-3700.	23.0	70
21	Correlating Structure and Detection Properties in HgTe Nanocrystal Films. Nano Letters, 2021, 21, 4145-4151.	4.5	23
22	Identification of Two Regimes of Carrier Thermalization in PbS Nanocrystal Assemblies. Journal of Physical Chemistry Letters, 2021, 12, 5123-5131.	2.1	6
23	2D Monolayer of the 1Tâ€™ Phase of Alloyed WSSe from Colloidal Synthesis. Journal of Physical Chemistry C, 2021, 125, 11058-11065.	1.5	9
24	Large HgTe nanocrystals for THz technology. , 2021, , .		0
25	Few picosecond dynamics of intraband transitions in THz HgTe nanocrystals. Nanophotonics, 2021, 10, 2753-2763.	2.9	10
26	Electronic band gap of van der Waals Î±-As2Te3 crystals. Applied Physics Letters, 2021, 119, .	1.5	4
27	Bias Tunable Spectral Response of Nanocrystal Array in a Plasmonic Cavity. Nano Letters, 2021, 21, 6671-6677.	4.5	15
28	Coherent Spin Dynamics of Electrons and Holes in CsPbBr₃ Colloidal Nanocrystals. Nano Letters, 2021, 21, 8481-8487.	4.5	18
29	Indirect to direct band gap crossover in two-dimensional WS2(1â^'x)Se2x alloys. Npj 2D Materials and Applications, 2021, 5, .	3.9	31
30	Split-Gate Photodiode Based on Graphene/HgTe Heterostructures with a Few Nanosecond Photoresponse. ACS Applied Electronic Materials, 2021, 3, 4681-4688.	2.0	11
31	Shaping the spontaneous emission of extended incoherent sources into composite radial vector beams. Applied Physics Letters, 2021, 119, 181105.	1.5	1
32	Optimized Cation Exchange for Mercury Chalcogenide 2D Nanoplatelets and Its Application for Alloys. Chemistry of Materials, 2021, 33, 9252-9261.	3.2	14
33	Designing Photovoltaic Devices Using HgTe Nanocrystals for Short and Midâ€Wave Infrared Detection. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900449.	0.8	3
34	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.	1.4	8
35	Potential of Colloidal Quantum Dot Based Solar Cells for Near-Infrared Active Detection. ACS Photonics, 2020, 7, 272-278.	3.2	13
36	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.	1.5	12

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37	Electroluminescence from HgTe Nanocrystals and Its Use for Active Imaging. Nano Letters, 2020, 20, 6185-6190.	4.5	28
38	Highly Photostable Perovskite Nanocubes: Toward Integrated Single Photon Sources Based on Tapered Nanofibers. ACS Photonics, 2020, 7, 2265-2272.	3.2	16
39	Structural and electronic transitions in few layers of isotopically pure hexagonal boron nitride. Physical Review B, 2020, 102, .	1.1	6
40	Anisotropic shape of CsPbBr₃ colloidal nanocrystals: from 1D to 2D confinement effects. Nanoscale, 2020, 12, 18978-18986.	2.8	9
41	Near- to Long-Wave-Infrared Mercury Chalcogenide Nanocrystals from Liquid Mercury. Journal of Physical Chemistry C, 2020, 124, 8423-8430.	1.5	14
42	Reconfigurable 2D/0D pâ€"n Graphene/HgTe Nanocrystal Heterostructure for Infrared Detection. ACS Nano, 2020, 14, 4567-4576.	7.3	60
43	Interactions Between Topological Defects and Nanoparticles. Frontiers in Physics, 2020, 7, .	1.0	2
44	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.	1.5	10
45	From Chains to Monolayers: Nanoparticle Assembly Driven by Smectic Topological Defects. Nano Letters, 2020, 20, 1598-1606.	4.5	19
46	Pushing Absorption of Perovskite Nanocrystals into the Infrared. Nano Letters, 2020, 20, 3999-4006.	4.5	18
47	Nanoplatelet-Based Light-Emitting Diode and Its Use in All-Nanocrystal LiFi-like Communication. ACS Applied Materials & Interfaces, 2020, 12, 22058-22065.	4.0	23
48	The Strong Confinement Regime in HgTe Two-Dimensional Nanoplatelets. Journal of Physical Chemistry C, 2020, 124, 23460-23468.	1.5	29
49	Gate tunable vertical geometry phototransistor based on infrared HgTe nanocrystals. Applied Physics Letters, 2020, 117, .	1.5	16
50	Spontaneous Emission of Vector Vortex Beams. Physical Review Applied, 2020, 14, .	1.5	8
51	Optoelectronic properties of methyl-terminated germanane. Applied Physics Letters, 2019, 115, .	1.5	18
52	HgTe Nanocrystals for SWIR Detection and Their Integration up to the Focal Plane Array. ACS Applied Materials & Interfaces, 2019, 11, 33116-33123.	4.0	53
53	Evidence for a narrow band gap phase in 1Tâ€² WS2 nanosheet. Applied Physics Letters, 2019, 115, .	1.5	25
54	Strong interlayer hybridization in the aligned SnS2/WSe2 hetero-bilayer structure. Npj 2D Materials and Applications, 2019, 3, .	3.9	39

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55	Azobenzenes as Light-Activable Carrier Density Switches in Nanocrystals. Journal of Physical Chemistry C, 2019, 123, 27257-27263.	1.5	3
56	Near Unity Absorption in Nanocrystal Based Short Wave Infrared Photodetectors Using Guided Mode Resonators. ACS Photonics, 2019, 6, 2553-2561.	3.2	44
57	Spin-Orbit induced phase-shift in Bi2Se3 Josephson junctions. Nature Communications, 2019, 10, 126.	5.8	97
58	Impact of dimensionality and confinement on the electronic properties of mercury chalcogenide nanocrystals. Nanoscale, 2019, 11, 3905-3915.	2.8	18
59	Ionic Glassâ€“Gated 2D Materialâ€“Based Phototransistor: MoSe₂ over LaF₃ as Case Study. Advanced Functional Materials, 2019, 29, 1902723.	7.8	24
60	HgTe Nanocrystal Inks for Extended Shortâ€Wave Infrared Detection. Advanced Optical Materials, 2019, 7, 1900348.	3.6	52
61	Field-Effect Transistor and Photo-Transistor of Narrow-Band-Gap Nanocrystal Arrays Using Ionic Glasses. Nano Letters, 2019, 19, 3981-3986.	4.5	23
62	A colloidal quantum dot infrared photodetector and its use for intraband detection. Nature Communications, 2019, 10, 2125.	5.8	155
63	Effect of Pressure on Interband and Intraband Transition of Mercury Chalcogenide Quantum Dots. Journal of Physical Chemistry C, 2019, 123, 13122-13130.	1.5	18
64	Halide Ligands To Release Strain in Cadmium Chalcogenide Nanoplatelets and Achieve High Brightness. ACS Nano, 2019, 13, 5326-5334.	7.3	71
65	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.	2.4	19
66	Doping as a Strategy to Tune Color of 2D Colloidal Nanoplatelets. ACS Applied Materials & Interfaces, 2019, 11, 10128-10134.	4.0	48
67	Electronic coupling in the F4-TCNQ/single-layer GaSe heterostructure. Physical Review Materials, 2019, 3, .	0.9	5
68	Fine structure of excitons and electronâ€“hole exchange energy in polymorphic CsPbBr₃single nanocrystals. Nanoscale, 2018, 10, 6393-6401.	2.8	108
69	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, .	1.1	63
70	Terahertz HgTe Nanocrystals: Beyond Confinement. Journal of the American Chemical Society, 2018, 140, 5033-5036.	6.6	107
71	Exciton-phonon coupling in a CsPbBr3 single nanocrystal. Applied Physics Letters, 2018, 112, .	1.5	67
72	Electronic structure robustness and design rules for 2D colloidal heterostructures. Journal of Applied Physics, 2018, 123, .	1.1	29

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73	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.	1.5	37
74	Band Edge Dynamics and Multiexciton Generation in Narrow Band Gap HgTe Nanocrystals. ACS Applied Materials & Interfaces, 2018, 10, 11880-11887.	4.0	23
75	Strategy to overcome recombination limited photocurrent generation in CsPbX3 nanocrystal arrays. Applied Physics Letters, 2018, 112, .	1.5	19
76	Investigation of the Selfâ€Doping Process in HgSe Nanocrystals. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1700294.	0.8	4
77	Road Map for Nanocrystal Based Infrared Photodetectors. Frontiers in Chemistry, 2018, 6, 575.	1.8	52
78	Polyoxometalate as Control Agent for the Doping in HgSe Self-Doped Nanocrystals. Journal of Physical Chemistry C, 2018, 122, 26680-26685.	1.5	16
79	Design of a Unipolar Barrier for a Nanocrystal-Based Short-Wave Infrared Photodiode. ACS Photonics, 2018, 5, 4569-4576.	3.2	49
80	Valence band inversion and spin-orbit effects in the electronic structure of monolayer GaSe. Physical Review B, 2018, 98, .	1.1	47
81	Wave-Function Engineering in HgSe/HgTe Colloidal Heterostructures To Enhance Mid-infrared Photoconductive Properties. Nano Letters, 2018, 18, 4590-4597.	4.5	24
82	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.	3.2	32
83	HgTe, the Most Tunable Colloidal Material: from the Strong Confinement Regime to THz Material. MRS Advances, 2018, 3, 2913-2921.	0.5	2
84	Emergence of intraband transitions in colloidal nanocrystals [Invited]. Optical Materials Express, 2018, 8, 1174.	1.6	27
85	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.	1.5	59
86	Short Wave Infrared Devices Based on HgTe Nanocrystals with Air Stable Performances. Journal of Physical Chemistry C, 2018, 122, 14979-14985.	1.5	49
87	Electronic structure of CdSe-ZnS 2D nanoplatelets. Applied Physics Letters, 2017, 110, .	1.5	21
88	Recent Progresses in Mid Infrared Nanocrystal Optoelectronics. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 1-8.	1.9	83
89	Charge Dynamics and Optolectronic Properties in HgTe Colloidal Quantum Wells. Nano Letters, 2017, 17, 4067-4074.	4.5	48
90	Transport in a Single Self-Doped Nanocrystal. ACS Nano, 2017, 11, 1222-1229.	7.3	23

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91	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>âˆ’</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, .	1.1	57
92	HgSe Self-Doped Nanocrystals as a Platform to Investigate the Effects of Vanishing Confinement. ACS Applied Materials & Interfaces, 2017, 9, 36173-36180.	4.0	40
93	Engineering Bicolor Emission in 2D Core/Crown CdSe/CdSe_{1â€“<i>x</i>}Te_{<i>x</i>} Nanoplatelet Heterostructures Using Band-Offset Tuning. Journal of Physical Chemistry C, 2017, 121, 24816-24823.	1.5	26
94	Electronic properties of (Sb;Bi)2Te3 colloidal heterostructured nanoplates down to the single particle level. Scientific Reports, 2017, 7, 9647.	1.6	7
95	Negatively Charged and Dark Excitons in CsPbBr₃ Perovskite Nanocrystals Revealed by High Magnetic Fields. Nano Letters, 2017, 17, 6177-6183.	4.5	103
96	Electrolytic phototransistor based on graphene-MoS2 van der Waals p-n heterojunction with tunable photoresponse. Applied Physics Letters, 2016, 109, .	1.5	41
97	2D Colloidal Nanoplatelets based Optoelectronics. MRS Advances, 2016, 1, 2187-2192.	0.5	2
98	van der Waals Epitaxy of GaSe/Graphene Heterostructure: Electronic and Interfacial Properties. ACS Nano, 2016, 10, 9679-9686.	7.3	154
99	Strongly Confined HgTe 2D Nanoplatelets as Narrow Near-Infrared Emitters. Journal of the American Chemical Society, 2016, 138, 10496-10501.	6.6	98
100	Nondestructive Encapsulation of CdSe/CdS Quantum Dots in an Inorganic Matrix by Pulsed Laser Deposition. ACS Applied Materials & Interfaces, 2016, 8, 22361-22368.	4.0	6
101	Surface Control of Doping in Self-Doped Nanocrystals. ACS Applied Materials & Interfaces, 2016, 8, 27122-27128.	4.0	66
102	Two-Dimensional Colloidal Nanocrystals. Chemical Reviews, 2016, 116, 10934-10982.	23.0	412
103	Large area molybdenum disulphide- epitaxial graphene vertical Van der Waals heterostructures. Scientific Reports, 2016, 6, 26656.	1.6	73
104	Metallic Functionalization of CdSe 2D Nanoplatelets and Its Impact on Electronic Transport. Journal of Physical Chemistry C, 2016, 120, 12351-12361.	1.5	29
105	Infrared Photodetection Based on Colloidal Quantum-Dot Films with High Mobility and Optical Absorption up to THz. Nano Letters, 2016, 16, 1282-1286.	4.5	150
106	Two-Dimensional Colloidal Metal Chalcogenides Semiconductors: Synthesis, Spectroscopy, and Applications. Accounts of Chemical Research, 2015, 48, 22-30.	7.6	248
107	Autocorrelation Analysis for the Unbiased Determination of Power-Law Exponents in Single-Quantum-Dot Blinking. ACS Nano, 2015, 9, 886-893.	7.3	28
108	Nanoplatelets Bridging a Nanotrench: A New Architecture for Photodetectors with Increased Sensitivity. Nano Letters, 2015, 15, 1736-1742.	4.5	59

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109	Investigating the n- and p-Type Electrolytic Charging of Colloidal Nanoplatelets. Journal of Physical Chemistry C, 2015, 119, 21795-21799.	1.5	57
110	1/f noise in semiconductor and metal nanocrystal solids. Journal of Applied Physics, 2014, 115, .	1.1	72
111	Electrolyte-Gated Colloidal Nanoplatelets-Based Phototransistor and Its Use for Bicolor Detection. Nano Letters, 2014, 14, 2715-2719.	4.5	94
112	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.	7.3	61
113	Selective Electrophoretic Deposition of CdSe Nanoplatelets. Chemistry of Materials, 2014, 26, 4514-4520.	3.2	36
114	Colloidal quantum dots for mid-IR applications. Infrared Physics and Technology, 2013, 59, 133-136.	1.3	18
115	Midâ€Infrared HgTe/As₂S₃ Field Effect Transistors and Photodetectors. Advanced Materials, 2013, 25, 137-141.	11.1	108
116	Optimized Synthesis of CdTe Nanoplatelets and Photoresponse of CdTe Nanoplatelets Films. Chemistry of Materials, 2013, 25, 2455-2462.	3.2	99
117	Optical properties of HgTe colloidal quantum dots. Nanotechnology, 2012, 23, 175705.	1.3	87
118	A mirage study of CdSe colloidal quantum dot films, Urbach tail, and surface states. Journal of Chemical Physics, 2012, 137, 154704.	1.2	37
119	Transport properties of mid-infrared colloidal quantum dot films. Proceedings of SPIE, 2012, , .	0.8	4
120	Colloidal HgTe Material for Low-Cost Detection into the MWIR. Journal of Electronic Materials, 2012, 41, 2725-2729.	1.0	18
121	Influence of Sawtooth Patterns on the Detection Properties of Quantum Well Infrared Photodetectors. IEEE Journal of Quantum Electronics, 2012, 48, 665-668.	1.0	0
122	Synthesis of Colloidal HgTe Quantum Dots for Narrow Mid-IR Emission and Detection. Journal of the American Chemical Society, 2011, 133, 16422-16424.	6.6	248
123	Mid-infrared HgTe colloidal quantum dot photodetectors. Nature Photonics, 2011, 5, 489-493.	15.6	389
124	Dark current reduction in a long wavelength quantum well infrared photodetector operating at low temperature. Infrared Physics and Technology, 2011, 54, 189-193.	1.3	2
125	Thermal properties of mid-infrared colloidal quantum dot detectors. Journal of Applied Physics, 2011, 110, .	1.1	43
126	15Î¼m Quantum Well Infrared Photodetector for thermometric imagery in cryogenic windtunnel. Infrared Physics and Technology, 2010, 53, 425-429.	1.3	4

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127	Quantum well infrared photodetectors hardiness to the nonideality of the energy band profile. Journal of Applied Physics, 2010, 107, .	1.1	3
128	Quantum scattering engineering of quantum well infrared photodetectors in the tunneling regime. Journal of Applied Physics, 2010, 108, 113707.	1.1	5
129	Interface roughness transport in terahertz quantum cascade detectors. Applied Physics Letters, 2010, 96, 061111.	1.5	15
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