

# Iwan Moreels

## List of Publications by Year in descending order

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127  
papers

8,696  
citations

43973

48  
h-index

43802

91  
g-index

131  
all docs

131  
docs citations

131  
times ranked

9802  
citing authors

#	ARTICLE	IF	CITATIONS
1	Size-Dependent Optical Properties of Colloidal PbS Quantum Dots. ACS Nano, 2009, 3, 3023-3030.	7.3	1,024
2	Composition and Size-Dependent Extinction Coefficient of Colloidal PbSe Quantum Dots. Chemistry of Materials, 2007, 19, 6101-6106.	3.2	475
3	Size-Tunable, Bright, and Stable PbS Quantum Dots: A Surface Chemistry Study. ACS Nano, 2011, 5, 2004-2012.	7.3	446
4	Continuous-wave biexciton lasing at room temperature using solution-processed quantum wells. Nature Nanotechnology, 2014, 9, 891-895.	15.6	433
5	Role of Acid-Base Equilibria in the Size, Shape, and Phase Control of Cesium Lead Bromide Nanocrystals. ACS Nano, 2018, 12, 1704-1711.	7.3	395
6	Surface Chemistry of Colloidal PbSe Nanocrystals. Journal of the American Chemical Society, 2008, 130, 15081-15086.	6.6	352
7	Luminescence in Sulfides: A Rich History and a Bright Future. Materials, 2010, 3, 2834-2883.	1.3	228
8	Short-Chain Alcohols Strip X-Type Ligands and Quench the Luminescence of PbSe and CdSe Quantum Dots, Acetonitrile Does Not. Journal of the American Chemical Society, 2012, 134, 20705-20712.	6.6	221
9	In Situ Observation of Rapid Ligand Exchange in Colloidal Nanocrystal Suspensions Using Transfer NOE Nuclear Magnetic Resonance Spectroscopy. Journal of the American Chemical Society, 2009, 131, 3024-3032.	6.6	190
10	From Binary Cu <sub>2</sub> S to Ternary Cu <sub>2</sub> In <sub>2</sub> S and Quaternary Cu <sub>2</sub> In <sub>2</sub> Zn <sub>2</sub> S Nanocrystals with Tunable Composition via Partial Cation Exchange. ACS Nano, 2015, 9, 521-531.	7.3	173
11	Light absorption by colloidal semiconductor quantum dots. Journal of Materials Chemistry, 2012, 22, 10406.	6.7	153
12	Probing the Wave Function Delocalization in CdSe/CdS Dot-in-Rod Nanocrystals by Time- and Temperature-Resolved Spectroscopy. ACS Nano, 2011, 5, 4031-4036.	7.3	148
13	Optical Properties of Zincblende Cadmium Selenide Quantum Dots. Journal of Physical Chemistry C, 2010, 114, 6371-6376.	1.5	143
14	Giant exciton oscillator strength and radiatively limited dephasing in two-dimensional platelets. Physical Review B, 2015, 91, .	1.1	143
15	Synthesis of Uniform Disk-Shaped Copper Telluride Nanocrystals and Cation Exchange to Cadmium Telluride Quantum Disks with Stable Red Emission. Journal of the American Chemical Society, 2013, 135, 12270-12278.	6.6	138
16	Chloride-Induced Thickness Control in CdSe Nanoplatelets. Nano Letters, 2018, 18, 6248-6254.	4.5	135
17	Two-Dimensional Material Interface Engineering for Efficient Perovskite Large-Area Modules. ACS Energy Letters, 2019, 4, 1862-1871.	8.8	125
18	PbTe   CdTe Core   Shell Particles by Cation Exchange, a HR-TEM study. Chemistry of Materials, 2009, 21, 778-780.	3.2	121

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19	Two Photon Absorption in II-VI Semiconductors: The Influence of Dimensionality and Size. Nano Letters, 2015, 15, 4985-4992.	4.5	120
20	A sustainable future for photonic colloidal nanocrystals. Chemical Society Reviews, 2015, 44, 5897-5914.	18.7	115
21	Epitaxially Connected PbSe Quantum-Dot Films: Controlled Neck Formation and Optoelectronic Properties. ACS Nano, 2014, 8, 11499-11511.	7.3	114
22	Nuclear Magnetic Resonance Spectroscopy Demonstrating Dynamic Stabilization of CdSe Quantum Dots by Alkylamines. Journal of Physical Chemistry Letters, 2010, 1, 2577-2581.	2.1	102
23	Synthesis of Air-Stable CdSe/ZnS Core-Shell Nanoplatelets with Tunable Emission Wavelength. Chemistry of Materials, 2017, 29, 5671-5680.	3.2	96
24	Solution-Processed Hybrid Graphene Flake/2H-MoS <sub>2</sub> Quantum Dot Heterostructures for Efficient Electrochemical Hydrogen Evolution. Chemistry of Materials, 2017, 29, 5782-5786.	3.2	93
25	Shape control of zincblende CdSe nanoplatelets. Chemical Communications, 2016, 52, 11975-11978.	2.2	92
26	In Situ <sup>1</sup> H NMR Study on the Trioctylphosphine Oxide Capping of Colloidal InP Nanocrystals. ChemPhysChem, 2005, 6, 2578-2584.	1.0	91
27	Synthesis of highly luminescent wurtzite CdSe/CdS giant-shell nanocrystals using a fast continuous injection route. Journal of Materials Chemistry C, 2014, 2, 3439.	2.7	90
28	The Different Nature of Band Edge Absorption and Emission in Colloidal PbSe/CdSe Core/Shell Quantum Dots. ACS Nano, 2011, 5, 58-66.	7.3	84
29	Ligand Adsorption/Desorption on Sterically Stabilized InP Colloidal Nanocrystals: Observation and Thermodynamic Analysis. ChemPhysChem, 2006, 7, 1028-1031.	1.0	81
30	Nearly Temperature-Independent Threshold for Amplified Spontaneous Emission in Colloidal CdSe/CdS Quantum Dot Nanorods. Advanced Materials, 2012, 24, OP231-5.	11.1	74
31	Graphene-based technologies for energy applications, challenges and perspectives. 2D Materials, 2015, 2, 030204.	2.0	74
32	Single-Mode Lasing from Colloidal Water-Soluble CdSe/CdS Quantum Dot Nanorods. Small, 2015, 11, 1328-1334.	5.2	70
33	High-Efficiency All-Solution-Processed Light-Emitting Diodes Based on Anisotropic Colloidal Heterostructures with Polar Polymer Injecting Layers. Nano Letters, 2015, 15, 5455-5464.	4.5	69
34	$\langle \text{mml:mrow} \langle \text{mml:mi} \rangle \text{p} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:math} \rangle$ -State Luminescence in CdSe Nanoplatelets: Role of Lateral Confinement and a Longitudinal Optical Phonon Bottleneck. Physical Review Letters, 2016, 116, 116802.	2.9	68
35	Reduction of moisture sensitivity of PbS quantum dot solar cells by incorporation of reduced graphene oxide. Solar Energy Materials and Solar Cells, 2018, 183, 1-7.	3.0	68
36	Colloidal CsX (X = Cl, Br, I) Nanocrystals and Their Transformation to CsPbX <sub>3</sub> Nanocrystals by Cation Exchange. Chemistry of Materials, 2018, 30, 79-83.	3.2	67

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37	Dielectric function of colloidal lead chalcogenide quantum dots obtained by a Kramers-Krönig analysis of the absorbance spectrum. <i>Physical Review B</i> , 2010, 81, .	1.1	66
38	Reversed oxygen sensing using colloidal quantum wells towards highly emissive photoresponsive varnishes. <i>Nature Communications</i> , 2015, 6, 6434.	5.8	66
39	CuIn <sub>x</sub> Ga <sub>1-x</sub> S <sub>2</sub> Nanocrystals with Tunable Composition and Band Gap Synthesized via a Phosphine-Free and Scalable Procedure. <i>Chemistry of Materials</i> , 2013, 25, 3180-3187.	3.2	65
40	Band structure engineering via piezoelectric fields in strained anisotropic CdSe/CdS nanocrystals. <i>Nature Communications</i> , 2015, 6, 7905.	5.8	65
41	Tunable and Efficient Red to Near-Infrared Photoluminescence by Synergistic Exploitation of Core and Surface Silver Doping of CdSe Nanoplatelets. <i>Chemistry of Materials</i> , 2019, 31, 1450-1459.	3.2	64
42	Band-Edge Exciton Fine Structure of Small, Nearly Spherical Colloidal CdSe/ZnS Quantum Dots. <i>ACS Nano</i> , 2011, 5, 8033-8039.	7.3	60
43	Effect of Core/Shell Interface on Carrier Dynamics and Optical Gain Properties of Dual-Color Emitting CdSe/CdS Nanocrystals. <i>ACS Nano</i> , 2016, 10, 6877-6887.	7.3	57
44	Synthesis of Highly Fluorescent Copper Clusters Using Living Polymer Chains as Combined Reducing Agents and Ligands. <i>ACS Nano</i> , 2015, 9, 11886-11897.	7.3	53
45	On the use of CdSe scintillating nanoplatelets as time taggers for high-energy gamma detection. <i>Npj 2D Materials and Applications</i> , 2019, 3, .	3.9	53
46	Langmuir-Blodgett monolayers of colloidal lead chalcogenide quantum dots: morphology and photoluminescence. <i>Nanotechnology</i> , 2010, 21, 295606.	1.3	51
47	The dielectric function of PbS quantum dots in a glass matrix. <i>Optical Materials Express</i> , 2012, 2, 496.	1.6	49
48	PbSe quantum dots: Finite, off-stoichiometric, and structurally distorted. <i>Physical Review B</i> , 2010, 81, .	1.1	48
49	Controlling the Exciton Fine Structure Splitting in CdSe/CdS Dot-in-Rod Nanojunctions. <i>ACS Nano</i> , 2012, 6, 1979-1987.	7.3	48
50	Solution NMR techniques for investigating colloidal nanocrystal ligands: A case study on trioctylphosphine oxide at InP quantum dots. <i>Sensors and Actuators B: Chemical</i> , 2007, 126, 283-288.	4.0	46
51	Two-Photon-Induced Blue Shift of Core and Shell Optical Transitions in Colloidal CdSe/CdS Quasi-Type II Quantum Rods. <i>ACS Nano</i> , 2013, 7, 2443-2452.	7.3	46
52	Near-Infrared CuInSe-Based Colloidal Nanocrystals via Cation Exchange. <i>Chemistry of Materials</i> , 2018, 30, 2607-2617.	3.2	45
53	Efficient charge transfer in solution-processed PbS quantum dot-reduced graphene oxide hybrid materials. <i>Journal of Materials Chemistry C</i> , 2015, 3, 7088-7095.	2.7	43
54	Strong Exciton-Photon Coupling with Colloidal Nanoplatelets in an Open Microcavity. <i>Nano Letters</i> , 2016, 16, 7137-7141.	4.5	42

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55	Near-Infrared Emitting Colloidal PbS Nanoplatelets: Lateral Size Control and Optical Spectroscopy. <i>Chemistry of Materials</i> , 2017, 29, 2883-2889.	3.2	42
56	Ultrafast emission from colloidal nanocrystals under pulsed X-ray excitation. <i>Journal of Instrumentation</i> , 2016, 11, P10015-P10015.	0.5	41
57	Engineering the Spin-Flip Limited Exciton Dephasing in Colloidal CdSe/CdS Quantum Dots. <i>ACS Nano</i> , 2012, 6, 5227-5233.	7.3	40
58	Broadband Amplified Spontaneous Emission and Random Lasing from Wurtzite CdSe/CdS "Giant-Shell" Nanocrystals. <i>ACS Photonics</i> , 2016, 3, 2083-2088.	3.2	38
59	Extending the Colloidal Transition Metal Dichalcogenide Library to ReS <sub>2</sub> Nanosheets for Application in Gas Sensing and Electrocatalysis. <i>Small</i> , 2019, 15, e1904670.	5.2	38
60	Colloidal Synthesis of Laterally Confined Blue-Emitting 3.5 Monolayer CdSe Nanoplatelets. <i>Chemistry of Materials</i> , 2020, 32, 9260-9267.	3.2	37
61	Tuning trion binding energy and oscillator strength in a laterally finite 2D system: CdSe nanoplatelets as a model system for trion properties. <i>Nanoscale</i> , 2020, 12, 14448-14458.	2.8	37
62	Composition-, Size-, and Surface Functionalization-Dependent Optical Properties of Lead Bromide Perovskite Nanocrystals. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 2079-2085.	2.1	37
63	CdSe/CdS/CdTe Core/Barrier/Crown Nanoplatelets: Synthesis, Optoelectronic Properties, and Multiphoton Fluorescence Upconversion. <i>ACS Nano</i> , 2020, 14, 4206-4215.	7.3	36
64	Disentangling the Role of Shape, Ligands, and Dielectric Constants in the Absorption Properties of Colloidal CdSe/CdS Nanocrystals. <i>ACS Photonics</i> , 2016, 3, 58-67.	3.2	34
65	Spectroscopy of the nonlinear refractive index of colloidal PbSe nanocrystals. <i>Applied Physics Letters</i> , 2006, 89, 193106.	1.5	33
66	Electrical control of single-photon emission in highly charged individual colloidal quantum dots. <i>Science Advances</i> , 2020, 6, .	4.7	33
67	Surface spin magnetism controls the polarized exciton emission from CdSe nanoplatelets. <i>Nature Nanotechnology</i> , 2020, 15, 277-282.	15.6	32
68	Graphene-Based Hole-Selective Layers for High-Efficiency, Solution-Processed, Large-Area, Flexible, Hydrogen-Evolving Organic Photocathodes. <i>Journal of Physical Chemistry C</i> , 2017, 121, 21887-21903.	1.5	30
69	Polymer assisted deposition of high-quality CsPbI <sub>2</sub> Br film with enhanced film thickness and stability. <i>Nano Research</i> , 2020, 13, 684-690.	5.8	30
70	Localization-limited exciton oscillator strength in colloidal CdSe nanoplatelets revealed by the optically induced stark effect. <i>Light: Science and Applications</i> , 2021, 10, 112.	7.7	30
71	Exciton Binding Energy in CdSe Nanoplatelets Measured by One- and Two-Photon Absorption. <i>Nano Letters</i> , 2021, 21, 10525-10531.	4.5	27
72	On the Interpretation of Colloidal Quantum Dot Absorption Spectra. <i>Small</i> , 2008, 4, 1866-1868.	5.2	26

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73	Quantum Dot Micropatterning on Si. Langmuir, 2008, 24, 5961-5966.	1.6	25
74	Piezoelectric Control of the Exciton Wave Function in Colloidal CdSe/CdS Nanocrystals. Journal of Physical Chemistry Letters, 2016, 7, 2182-2188.	2.1	25
75	Near-Edge Ligand Stripping and Robust Radiative Exciton Recombination in CdSe/CdS Core/Crown Nanoplatelets. Journal of Physical Chemistry Letters, 2020, 11, 3339-3344.	2.1	24
76	A comparative study demonstrates strong size tunability of carrier-phonon coupling in CdSe-based 2D and OD nanocrystals. Nanoscale, 2019, 11, 3958-3967.	2.8	24
77	Exciton Dynamics within the Band-Edge Manifold States: The Onset of an Acoustic Phonon Bottleneck. Nano Letters, 2012, 12, 5224-5229.	4.5	23
78	Langmuir-Blodgett monolayers of InP quantum dots with short chain ligands. Journal of Colloid and Interface Science, 2006, 300, 597-602.	5.0	21
79	Exciton dephasing in lead sulfide quantum dots by $X$ -point phonons. Physical Review B, 2011, 83, .	1.1	21
80	Energy transfer is speeded up in 2D. Nature Materials, 2015, 14, 464-465.	13.3	21
81	Preferred Growth Direction by PbS Nanoplatelets Preserves Perovskite Infrared Light Harvesting for Stable, Reproducible, and Efficient Solar Cells. Advanced Energy Materials, 2020, 10, 2002422.	10.2	20
82	Self-Assembled Dense Colloidal $\text{Cu}_2\text{Te}$ Nanodisk Networks in P3HT Thin Films with Enhanced Photocurrent. Advanced Functional Materials, 2016, 26, 4535-4542.	7.8	19
83	Size-dependent exciton substructure in CdSe nanoplatelets and its relation to photoluminescence dynamics. Nanoscale, 2019, 11, 12230-12241.	2.8	19
84	Rapid and robust control of single quantum dots. Light: Science and Applications, 2017, 6, e16239-e16239.	7.7	18
85	Increasing responsivity and air stability of PbS colloidal quantum dot photoconductors with iodine surface ligands. Nanotechnology, 2019, 30, 405204.	1.3	18
86	Role of interband and photoinduced absorption in the nonlinear refraction and absorption of resonantly excited PbS quantum dots around 1550 nm. Physical Review B, 2012, 85, .	1.1	17
87	Oxygen Sensitivity of Atomically Passivated CdS Nanocrystal Films. ACS Applied Materials & Interfaces, 2014, 6, 9517-9523.	4.0	17
88	Revisiting the Anion Framework Conservation in Cation Exchange Processes. Chemistry of Materials, 2016, 28, 7872-7877.	3.2	15
89	Four-wave-mixing imaging and carrier dynamics of PbS colloidal quantum dots. Physical Review B, 2010, 82, .	1.1	13
90	Solution-processed silver sulphide nanocrystal film for resistive switching memories. Journal of Materials Chemistry C, 2018, 6, 13128-13135.	2.7	13

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91	Impact of the Band-Edge Fine Structure on the Energy Transfer between Colloidal Quantum Dots. <i>Advanced Optical Materials</i> , 2014, 2, 126-130.	3.6	12
92	Dye-Sensitized Ternary Copper Chalcogenide Nanocrystals: Optoelectronic Properties, Air Stability, and Photosensitivity. <i>Chemistry of Materials</i> , 2019, 31, 2443-2449.	3.2	12
93	Core/Shell CdSe/CdS Bone-Shaped Nanocrystals with a Thick and Anisotropic Shell as Optical Emitters. <i>Advanced Optical Materials</i> , 2020, 8, 1901463.	3.6	12
94	The non-linear refractive index of colloidal PbSe nanocrystals: Spectroscopy and saturation behaviour. <i>Journal of Luminescence</i> , 2006, 121, 369-374.	1.5	11
95	Two-photon based pulse autocorrelation with CdSe nanoplatelets. <i>Nanoscale</i> , 2019, 11, 17293-17300.	2.8	11
96	Giant-Shell CdSe/CdS Nanocrystals: Exciton Coupling to Shell Phonons Investigated by Resonant Raman Spectroscopy. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 399-405.	2.1	11
97	Mechanically flexible and optically transparent three-dimensional nanofibrous amorphous aerocellulose. <i>Carbohydrate Polymers</i> , 2016, 149, 217-223.	5.1	10
98	Ultrafast stimulated emission microscopy of single nanocrystals. <i>Science</i> , 2019, 366, 1240-1243.	6.0	10
99	Band-edge oscillator strength of colloidal CdSe/CdS dot-in-rods: comparison of absorption and time-resolved fluorescence spectroscopy. <i>Nanoscale</i> , 2017, 9, 4730-4738.	2.8	9
100	Van Hove Singularities and Trap States in Two-Dimensional CdSe Nanoplatelets. <i>Nano Letters</i> , 2021, 21, 1702-1708.	4.5	9
101	Transmission of a quantum-dot-silicon-on-insulator hybrid notch filter. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2009, 26, 1243.	0.9	7
102	Ligands for Nanoparticles. , 2011, , 21-49.		7
103	Synthesis of Anisotropic CdSe/CdS Dot-in-Giant-Rod Nanocrystals with Persistent Blue-Shifted Biexciton Emission. <i>ACS Photonics</i> , 2018, 5, 4561-4568.	3.2	7
104	Comment on "Size-Dependent Composition and Molar Extinction Coefficient of PbSe Semiconductor Nanocrystals". <i>ACS Nano</i> , 2009, 3, 2053-2053.	7.3	4
105	Objective-free excitation of quantum emitters with a laser-written micro parabolic mirror. <i>APL Photonics</i> , 2020, 5, 071302.	3.0	3
106	Stimulated Emission through an Electron-Hole Plasma in Colloidal CdSe Quantum Rings. <i>Nano Letters</i> , 2021, 21, 10062-10069.	4.5	3
107	Semiconductor Nanostructures for Electronic and Optoelectronic Device Applications. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2020, 217, 2000065.	0.8	2
108	Electrically Pumped QD Light Emission from LEDs to Lasers. <i>Information Display</i> , 2021, 37, 6-17.	0.1	2

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109	Semiconductor Nanostructures towards Electronic and Optoelectronic Device Applications. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2014, 11, 193-194.	0.8	1
110	Let There Be Order, in Films of Colloidal CdSe 2D Nanocrystals. <i>Nano Letters</i> , 2020, 20, 2941-2942.	4.5	1
111	InP-nanocrystal monolayer deposition onto silicon-on-insulator structures. , 2005, , .		0
112	Solution NMR Spectroscopy as a Useful Tool to Investigate Colloidal Nanocrystal Dispersions from the Capping Ligand's Point of View. <i>Materials Research Society Symposia Proceedings</i> , 2006, 984, 1.	0.1	0
113	Ultrafast exciton dephasing in PbS colloidal quantum dots. , 2011, , .		0
114	Semiconductor nanostructures towards electronic and opto-electronic device applications V. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2015, 12, 1365-1366.	0.8	0
115	Ligands for Nanoparticles. , 2016, , 171-200.		0
116	Tuning the Optoelectronic Properties of Colloidal 2D Nanocrystals for Photonic and Energy Applications. , 0, , .		0
117	Gain Spectroscopy and Tunable Single Mode Lasing of Solution-Based Quantum Dots and Nanoplatelets Using Tunable Open Microcavities. , 2016, , .		0
118	Spectral Dynamics of Linearly Polarized Bright Exciton in InP/ZnSe Colloidal Quantum Dots. , 0, , .		0
119	Tunable Emission Fine Structure and Origin of Quadratic TPA in 2D CdSe Nanoplatelets. , 0, , .		0
120	Silver Doping in Cadmium Chalcogenide Colloidal Nanoplatelets. , 0, , .		0
121	Ultrafast Stimulated Emission Microscopy of Single Nanocrystals. , 2020, , .		0
122	Fluorescence Quantum Efficiency Enhancement in Size-Controlled 3.5 Monolayer Cadmium Telluride Nanoplatelets. , 0, , .		0
123	COLLOIDAL SYNTHESIS OF FLUORESCENT MoX <sub>2</sub> (X = S, Se) NANOSHEETS VIA A DESIGN OF EXPERIMENTS APPROACH. , 0, , .		0
124	CROWN SIZE EFFECT on the LIGHT AMPLIFICATION FEATURES of CORE/CROWN (CdSe/CdS) NANOPATELETS. , 0, , .		0
125	Colloidal Synthesis Of Fluorescent MoX <sub>2</sub> (X = S, Se) Nanosheets Via a Design Of Experiments Approach. , 0, , .		0
126	Disruptive Full Spectrum Optical Gain in Bulk-Like CdS/Se Quantum Dots through Strong Band Gap Renormalization. , 0, , .		0



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127	Development of CdSe CdS core shell nanocrystals with near unity fluorescence efficiency. , 0, , .		0