Hedi Mattoussi

List of Publications by Year
in descending order

127 papers	26,593 citations	22099 59 h-index	21474 114 g-index
128 all docs	128 docs citations	128 times ranked	20956 citing authors

#	Article	IF	Citations
1	Quantum dot bioconjugates for imaging, labelling and sensing. Nature Materials, 2005, 4, 435-446.	13.3	5,774
2	Long-term multiple color imaging of live cells using quantum dot bioconjugates. Nature Biotechnology, 2003, 21, 47-51.	9.4	1,928
3	Self-Assembly of CdSeâ^'ZnS Quantum Dot Bioconjugates Using an Engineered Recombinant Protein. Journal of the American Chemical Society, 2000, 122, 12142-12150.	6.6	1,675
4	Self-assembled nanoscale biosensors based on quantum dot FRET donors. Nature Materials, 2003, 2, 630-638.	13.3	1,541
5	Fluorescence Resonance Energy Transfer Between Quantum Dot Donors and Dye-Labeled Protein Acceptors. Journal of the American Chemical Society, 2004, 126, 301-310.	6.6	1,255
6	Tracking metastatic tumor cell extravasation with quantum dot nanocrystals and fluorescence emission-scanning microscopy. Nature Medicine, 2004, 10, 993-998.	15.2	669
7	Multiplexed Toxin Analysis Using Four Colors of Quantum Dot Fluororeagents. Analytical Chemistry, 2004, 76, 684-688.	3.2	652
8	A Hybrid Quantum Dotâ^'Antibody Fragment Fluorescence Resonance Energy Transfer-Based TNT Sensor. Journal of the American Chemical Society, 2005, 127, 6744-6751.	6.6	562
9	Proteolytic activity monitored by fluorescence resonance energy transfer through quantum-dotâ€"peptide conjugates. Nature Materials, 2006, 5, 581-589.	13.3	537
10	FÃ¶rster Resonance Energy Transfer Investigations Using Quantum-Dot Fluorophores. ChemPhysChem, 2006, 7, 47-57.	1.0	537
11	Quantum dot-based resonance energy transfer and its growing application in biology. Physical Chemistry Chemical Physics, 2009, 11, 17-45.	1.3	537
12	Synthesis of Compact Multidentate Ligands to Prepare Stable Hydrophilic Quantum Dot Fluorophores. Journal of the American Chemical Society, 2005, 127, 3870-3878.	6.6	534
13	Electroluminescence from heterostructures of poly(phenylene vinylene) and inorganic CdSe nanocrystals. Journal of Applied Physics, 1998, 83, 7965-7974.	1.1	518
14	Enhancing the Stability and Biological Functionalities of Quantum Dots via Compact Multifunctional Ligands. Journal of the American Chemical Society, 2007, 129, 13987-13996.	6.6	486
15	On the Quenching of Semiconductor Quantum Dot Photoluminescence by Proximal Gold Nanoparticles. Nano Letters, 2007, 7, 3157-3164.	4.5	480
16	Quantum-dot/dopamine bioconjugates function as redox coupled assemblies for in vitro and intracellular pH sensing. Nature Materials, 2010, 9, 676-684.	13.3	433
17	Conjugation of Luminescent Quantum Dots with Antibodies Using an Engineered Adaptor Protein To Provide New Reagents for Fluoroimmunoassays. Analytical Chemistry, 2002, 74, 841-847.	3.2	430
18	Luminescent quantum dots as platforms for probing in vitro and in vivo biological processes. Advanced Drug Delivery Reviews, 2012, 64, 138-166.	6.6	386

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19	Delivering quantum dots into cells: strategies, progress and remaining issues. Analytical and Bioanalytical Chemistry, 2009, 393, 1091-1105.	1.9	312
20	Hydrodynamic Dimensions, Electrophoretic Mobility, and Stability of Hydrophilic Quantum Dots. Journal of Physical Chemistry B, 2006, 110, 20308-20316.	1.2	280
21	Solution-Phase Single Quantum Dot Fluorescence Resonance Energy Transfer. Journal of the American Chemical Society, 2006, 128, 15324-15331.	6.6	272
22	Can Luminescent Quantum Dots Be Efficient Energy Acceptors with Organic Dye Donors?. Journal of the American Chemical Society, 2005, 127, 1242-1250.	6.6	269
23	Kinetics of Metal-Affinity Driven Self-Assembly between Proteins or Peptides and CdSeâ˘ZnS Quantum Dots. Journal of Physical Chemistry C, 2007, 111, 11528-11538.	1.5	257
24	Capping of CdSeâ€"ZnS quantum dots with DHLA and subsequent conjugation with proteins. Nature Protocols, 2006, 1, 1258-1266.	5.5	248
25	Self-Assembled Quantum Dotâ˘Peptide Bioconjugates for Selective Intracellular Delivery. Bioconjugate Chemistry, 2006, 17, 920-927.	1.8	246
26	On the pH-Dependent Quenching of Quantum Dot Photoluminescence by Redox Active Dopamine. Journal of the American Chemical Society, 2012, 134, 6006-6017.	6.6	213
27	The State of Nanoparticle-Based Nanoscience and Biotechnology: Progress, Promises, and Challenges. ACS Nano, 2012, 6, 8468-8483.	7.3	211
28	Modular poly(ethylene glycol) ligands for biocompatible semiconductor and gold nanocrystals with extended pH and ionic stability. Journal of Materials Chemistry, 2008, 18, 4949.	6.7	205
29	Growth of Highly Fluorescent Polyethylene Glycol- and Zwitterion-Functionalized Gold Nanoclusters. ACS Nano, 2013, 7, 2509-2521.	7.3	192
30	Polyethylene glycol-based bidentate ligands to enhance quantum dot and gold nanoparticle stability in biological media. Nature Protocols, 2009, 4, 412-423.	5.5	190
31	Strategies for interfacing inorganic nanocrystals with biological systems based on polymer-coating. Chemical Society Reviews, 2015, 44, 193-227.	18.7	189
32	Multidentate Poly(ethylene glycol) Ligands Provide Colloidal Stability to Semiconductor and Metallic Nanocrystals in Extreme Conditions. Journal of the American Chemical Society, 2010, 132, 9804-9813.	6.6	187
33	Multifunctional ligands based on dihydrolipoic acid and polyethylene glycol to promote biocompatibility of quantum dots. Nature Protocols, 2009, 4, 424-436.	5.5	186
34	Multidentate Catechol-Based Polyethylene Glycol Oligomers Provide Enhanced Stability and Biocompatibility to Iron Oxide Nanoparticles. ACS Nano, 2012, 6, 389-399.	7.3	174
35	Intracellular Delivery of Quantum Dotâ˘Protein Cargos Mediated by Cell Penetrating Peptides. Bioconjugate Chemistry, 2008, 19, 1785-1795.	1.8	155
36	One-Phase Synthesis of Water-Soluble Gold Nanoparticles with Control over Size and Surface Functionalities. Langmuir, 2010, 26, 7604-7613.	1.6	155

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37	Potential clinical applications of quantum dots. International Journal of Nanomedicine, 2008, 3, 151.	3.3	152
38	Multidentate Zwitterionic Ligands Provide Compact and Highly Biocompatible Quantum Dots. Journal of the American Chemical Society, 2013, 135, 13786-13795.	6.6	144
39	Effects of Ligand Coordination Number and Surface Curvature on the Stability of Gold Nanoparticles in Aqueous Solutions. Langmuir, 2009, 25, 10604-10611.	1.6	133
40	Delivering quantum dot-peptide bioconjugates to the cellular cytosol: escaping from the endolysosomal system. Integrative Biology (United Kingdom), 2010, 2, 265.	0.6	124
41	Growth of <i>In Situ</i> Functionalized Luminescent Silver Nanoclusters by Direct Reduction and Size Focusing. ACS Nano, 2012, 6, 8950-8961.	7.3	121
42	Interactions between Redox Complexes and Semiconductor Quantum Dots Coupled via a Peptide Bridge. Journal of the American Chemical Society, 2008, 130, 16745-16756.	6.6	115
43	Cytotoxicity of Quantum Dots Used for <i>In Vitro</i> Cellular Labeling: Role of QD Surface Ligand, Delivery Modality, Cell Type, and Direct Comparison to Organic Fluorophores. Bioconjugate Chemistry, 2013, 24, 1570-1583.	1.8	113
44	A Multifunctional Polymer Combining the Imidazole and Zwitterion Motifs as a Biocompatible Compact Coating for Quantum Dots. Journal of the American Chemical Society, 2015, 137, 14158-14172.	6.6	112
45	Resonance Energy Transfer Between Luminescent Quantum Dots and Diverse Fluorescent Protein Acceptors. Journal of Physical Chemistry C, 2009, 113, 18552-18561.	1.5	109
46	Enhanced Stabilization and Easy Phase Transfer of CsPbBr₃ Perovskite Quantum Dots Promoted by High-Affinity Polyzwitterionic Ligands. Journal of the American Chemical Society, 2020, 142, 12669-12680.	6.6	109
47	Photoinduced Phase Transfer of Luminescent Quantum Dots to Polar and Aqueous Media. Journal of the American Chemical Society, 2012, 134, 16370-16378.	6.6	102
48	Understanding the Self-Assembly of Proteins onto Gold Nanoparticles and Quantum Dots Driven by Metal-Histidine Coordination. ACS Nano, 2013, 7, 10197-10210.	7.3	102
49	Properties of CdSe nanocrystal dispersions in the dilute regime: Structure and interparticle interactions. Physical Review B, 1998, 58, 7850-7863.	1.1	101
50	Self-assembled luminescent CdSeâ€“ZnS quantum dot bioconjugates prepared using engineered poly-histidine terminated proteins. Analytica Chimica Acta, 2005, 534, 63-67.	2.6	96
51	Quantum dot/peptide-MHC biosensors reveal strong CD8-dependent cooperation between self and viral antigens that augment the T cell response. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 16846-16851.	3.3	96
52	Monitoring of enzymatic proteolysis on a electroluminescent-CCD microchip platform using quantum dot-peptide substrates. Sensors and Actuators B: Chemical, 2009, 139, 13-21.	4.0	91
53	Surface Ligand Effects on Metal-Affinity Coordination to Quantum Dots: Implications for Nanoprobe Self-Assembly. Bioconjugate Chemistry, 2010, 21, 1160-1170.	1.8	91
54	Photoligation of an Amphiphilic Polymer with Mixed Coordination Provides Compact and Reactive Quantum Dots. Journal of the American Chemical Society, 2015, 137, 5438-5451.	6.6	91

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55	Designer Variable Repeat Length Polypeptides as Scaffolds for Surface Immobilization of Quantum Dots. Journal of Physical Chemistry B, 2006, 110, 10683-10690.	1.2	81
56	Rapid Covalent Ligation of Fluorescent Peptides to Water Solubilized Quantum Dots. Journal of the American Chemical Society, 2010, 132, 10027-10033.	6.6	78
57	Design of a Multi-Dopamine-Modified Polymer Ligand Optimally Suited for Interfacing Magnetic Nanoparticles with Biological Systems. Langmuir, 2014, 30, 6197-6208.	1.6	63
58	Poly(ethylene glycol)-Based Multidentate Oligomers for Biocompatible Semiconductor and Gold Nanocrystals. Langmuir, 2012, 28, 2761-2772.	1.6	62
59	Investigating Biological Processes at the Single Molecule Level Using Luminescent Quantum Dots. Annals of Biomedical Engineering, 2009, 37, 1934-1959.	1.3	59
60	Preparation of compact biocompatible quantum dots using multicoordinating molecular-scale ligands based on a zwitterionic hydrophilic motif and lipoic acid anchors. Nature Protocols, 2015, 10, 859-874.	5.5	59
61	Quenching of Quantum Dot Emission by Fluorescent Gold Clusters: What It Does and Does Not Share with the FÃ¶rster Formalism. Journal of Physical Chemistry C, 2013, 117, 15429-15437.	1.5	56
62	Engineering the Bioâ€“Nano Interface Using a Multifunctional Coordinating Polymer Coating. Accounts of Chemical Research, 2020, 53, 1124-1138.	7.6	51
63	Multifunctional and High Affinity Polymer Ligand that Provides Bio-Orthogonal Coating of Quantum Dots. Bioconjugate Chemistry, 2016, 27, 2024-2036.	1.8	50
64	Characterization of the Ligand Capping of Hydrophobic CdSeâ€“ZnS Quantum Dots Using NMR Spectroscopy. Chemistry of Materials, 2018, 30, 225-238.	3.2	49
65	UV and Sunlight Driven Photoligation of Quantum Dots: Understanding the Photochemical Transformation of the Ligands. Journal of the American Chemical Society, 2015, 137, 2704-2714.	6.6	45
66	Modification of Poly(maleic anhydride)-Based Polymers with H₂Nâ€“R Nucleophiles: Addition or Substitution Reaction?. Bioconjugate Chemistry, 2019, 30, 871-880.	1.8	45
67	Bio-orthogonal Coupling as a Means of Quantifying the Ligand Density on Hydrophilic Quantum Dots. Journal of the American Chemical Society, 2016, 138, 3190-3201.	6.6	44
68	Modification of Poly(ethylene glycol)-Capped Quantum Dots with Nickel Nitrilotriacetic Acid and Self-Assembly with Histidine-Tagged Proteins. Journal of Physical Chemistry C, 2010, 114, 13526-13531.	1.5	43
69	Controlling the spectroscopic properties of quantum dots via energy transfer and charge transfer interactions: Concepts and applications. Nano Today, 2016, 11, 98-121.	6.2	43
70	Combining Ligand Design with Photoligation to Provide Compact, Colloidally Stable, and Easy to Conjugate Quantum Dots. ACS Applied Materials & Interfaces, 2013, 5, 2861-2869.	4.0	42
71	Self-Assembled Gold Nanoparticleâ€“Fluorescent Protein Conjugates as Platforms for Sensing Thiolate Compounds via Modulation of Energy Transfer Quenching. Bioconjugate Chemistry, 2017, 28, 678-687.	1.8	38
72	Gold-doped silver nanoclusters with enhanced photophysical properties. Physical Chemistry Chemical Physics, 2018, 20, 12992-13007.	1.3	38

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73	Competition of Charge and Energy Transfer Processes in Donorâ€“Acceptor Fluorescence Pairs: Calibrating the Spectroscopic Ruler. ACS Nano, 2018, 12, 5657-5665.	7.3	38
74	Aqueous Growth of Gold Clusters with Tunable Fluorescence Using Photochemically Modified Lipoic Acid-Based Ligands. Langmuir, 2016, 32, 6445-6458.	1.6	35
75	Enhanced Colloidal Stability of Various Gold Nanostructures Using a Multicoordinating Polymer Coating. Journal of Physical Chemistry C, 2017, 121, 22901-22913.	1.5	32
76	Self-Organized Tubular Structures as Platforms for Quantum Dots. Journal of the American Chemical Society, 2014, 136, 6463-6469.	6.6	31
77	Fluoroimmunoassays Using Antibody-Conjugated Quantum Dots. , 2005, 303, 019-034.		30
78	Elucidating the Role of Surface Coating in the Promotion or Prevention of Protein Corona around Quantum Dots. Bioconjugate Chemistry, 2019, 30, 2469-2480.	1.8	28
79	A Versatile Coordinating Ligand for Coating Semiconductor, Metal, and Metal Oxide Nanocrystals. Chemistry of Materials, 2018, 30, 7269-7279.	3.2	26
80	Delayed Photoluminescence in Metal-Conjugated Fluorophores. Journal of the American Chemical Society, 2019, 141, 11286-11297.	6.6	26
81	Rapid Photoligation of Gold Nanocolloids with Lipoic Acid-Based Ligands. Chemistry of Materials, 2020, 32, 7469-7483.	3.2	26
82	Luminescent Quantum Dots Stabilized by N-Heterocyclic Carbene Polymer Ligands. Journal of the American Chemical Society, 2021, 143, 1873-1884.	6.6	26
83	Characterizing the Brownian Diffusion of Nanocolloids and Molecular Solutions: Diffusion-Ordered NMR Spectroscopy vs Dynamic Light Scattering. Journal of Physical Chemistry B, 2020, 124, 4631-4650.	1.2	25
84	N-Heterocyclic Carbene-Stabilized Gold Nanoparticles: Mono- Versus Multidentate Ligands. Chemistry of Materials, 2021, 33, 921-933.	3.2	24
85	Electrostatic and screening effects on the dynamic aspects of polyelectrolyte solutions. Journal of Chemical Physics, 1990, 93, 3593-3603.	1.2	22
86	Design of Biotin-Functionalized Luminescent Quantum Dots. Journal of Biomedicine and Biotechnology, 2007, 2007, 1-7.	3.0	22
87	Tuning the Redox Coupling between Quantum Dots and Dopamine in Hybrid Nanoscale Assemblies. Journal of Physical Chemistry C, 2015, 119, 3388-3399.	1.5	22
88	Effects of separation distance on the charge transfer interactions in quantum dotâ€“dopamine assemblies. Physical Chemistry Chemical Physics, 2015, 17, 10108-10117.	1.3	22
89	Controlling the Architecture, Coordination, and Reactivity of Nanoparticle Coating Utilizing an Amino Acid Central Scaffold. Journal of the American Chemical Society, 2015, 137, 16084-16097.	6.6	22
90	Intracellular Delivery of Gold Nanocolloids Promoted by a Chemically Conjugated Anticancer Peptide. ACS Omega, 2018, 3, 12754-12762.	1.6	22

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91	Non-Invasive Characterization of the Organic Coating of Biocompatible Quantum Dots Using Nuclear Magnetic Resonance Spectroscopy. Chemistry of Materials, 2018, 30, 3454-3466.	3.2	21
92	The roles of surface chemistry, dissolution rate, and delivered dose in the cytotoxicity of copper nanoparticles. Nanoscale, 2017, 9, 4739-4750.	2.8	20
93	A multifunctional amphiphilic polymer as a platform for surface-functionalizing metallic and other inorganic nanostructures. Faraday Discussions, 2014, 175, 137-151.	1.6	19
94	Compact, â€œClickableâ€• Quantum Dots Photoligated with Multifunctional Zwitterionic Polymers for Immunofluorescence and <i>In Vivo</i> Imaging. Bioconjugate Chemistry, 2020, 31, 1497-1509.	1.8	19
95	Singleâ€Molecule Colocalization Studies Shed Light on the Idea of Fully Emitting versus Dark Single Quantum Dots. Small, 2011, 7, 2101-2108.	5.2	18
96	FÃ¶rster Resonance Energy Transfer between Colloidal CuInS₂/ZnS Quantum Dots and Dark Quenchers. Journal of Physical Chemistry C, 2020, 124, 1717-1731.	1.5	18
97	Scaling Laws for Polymer Chains Grafted onto Nanoparticles. Macromolecular Chemistry and Physics, 2018, 219, 1700417.	1.1	16
98	Photochemical transformation of lipoic acid-based ligands: probing the effects of solvent, ligand structure, oxygen and pH. Physical Chemistry Chemical Physics, 2018, 20, 3895-3902.	1.3	15
99	The dualâ€“function of lipoic acid groups as surface anchors and sulfhydryl reactive sites on polymerâ€“stabilized QDs and Au nanocolloids. Journal of Chemical Physics, 2019, 151, 164703.	1.2	15
100	Olfactory bulbâ€targeted quantum dot (QD) bioconjugate and Kv1.3 blocking peptide improve metabolic health in obese male mice. Journal of Neurochemistry, 2021, 157, 1876-1896.	2.1	15
101	Polysalt ligands achieve higher quantum yield and improved colloidal stability for CsPbBr₃ quantum dots. Nanoscale, 2021, 13, 16705-16718.	2.8	15
102	Engineering Highly Fluorescent and Colloidally Stable Blue-Emitting CsPbBr₃ Nanoplatelets Using Polysalt/PbBr₂ Ligands. Chemistry of Materials, 2022, 34, 4924-4936.	3.2	15
103	Highly fluorescent hybrid Au/Ag nanoclusters stabilized with poly(ethylene glycol)- and zwitterion-modified thiolate ligands. Physical Chemistry Chemical Physics, 2019, 21, 21317-21328.	1.3	14
104	A multi-coordinating polymer ligand optimized for the functionalization of metallic nanocrystals and nanorods. Faraday Discussions, 2016, 191, 481-494.	1.6	12
105	Intracellular Delivery of Luminescent Quantum Dots Mediated by a Virus-Derived Lytic Peptide. Bioconjugate Chemistry, 2017, 28, 64-74.	1.8	12
106	Enhanced Uptake of Luminescent Quantum Dots by Live Cells Mediated by a Membrane-Active Peptide. ACS Omega, 2018, 3, 17164-17172.	1.6	12
107	Margatoxinâ€bound quantum dots as a novel inhibitor of the voltageâ€gated ion channel Kv1.3. Journal of Neurochemistry, 2017, 140, 404-420.	2.1	10
108	Efficient Assembly of Quantum Dots with Homogenous Glycans Derived from Natural <i>N</i>-Linked Glycoproteins. Bioconjugate Chemistry, 2018, 29, 3144-3153.	1.8	7

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109	Nanoscale Encapsulation of Hybrid Perovskites Using Hybrid Atomic Layer Deposition. Journal of Physical Chemistry Letters, 2022, 13, 4082-4089.	2.1	5
110	Functional-Group-Dependent Formation of Bioactive Fluorescent-Plasmonic Nanohybrids. Journal of Physical Chemistry C, 2016, 120, 25732-25741.	1.5	3
111	A Multifunctional Contrast Agent for ¹⁹F-Based Magnetic Resonance Imaging. Bioconjugate Chemistry, 2022, 33, 881-891.	1.8	3
112	Small protein sequences can induce cellular uptake of complex nanohybrids. Beilstein Journal of Nanotechnology, 2019, 10, 2477-2482.	1.5	2
113	Photoligation Combined with Zwitterion-Modified Lipoic Acid Ligands Provides Compact and Biocompatible Quantum Dots. Methods in Molecular Biology, 2014, 1199, 13-31.	0.4	2
114	Quantifying the density of surface capping ligands on semiconductor quantum dots. Proceedings of SPIE, 2015, , .	0.8	1
115	Surface-Functionalizing Metal, Metal Oxide and Semiconductor Nanocrystals with a Multi-coordinating Polymer Platform. MRS Advances, 2016, 1, 3741-3747.	0.5	1
116	N-Heterocyclic carbene-stabilized gold nanoparticles and luminescent quantum dots. , 2022, , .		1
117	Multidentate oligomeric ligands to enhance the biocompatibility of iron oxide and other metal nanoparticles. Proceedings of SPIE, 2014, , .	0.8	0
118	Combining ligand design and photo-ligation to provide optimal quantum dot-bioconjugates for sensing and imaging. Proceedings of SPIE, 2014, , .	0.8	0
119	Understanding the redox coupling between quantum dots and the neurotransmitter dopamine in hybrid self-assemblies. Proceedings of SPIE, 2015, , .	0.8	0
120	Design of a multi-coordinating polymer as a platform for functionalizing metal, metal oxide and semiconductor nanocrystals. Proceedings of SPIE, 2016, , .	0.8	0
121	Peptide mediated intracellular delivery of semiconductor quantum dots. , 2017, , .		0
122	Macromol. Chem. Phys. 8/2018. Macromolecular Chemistry and Physics, 2018, 219, 1870022.	1.1	0
123	N-Heterocyclic Carbene-stabilized QDs and Gold Nanoparticles: Effects of the Ligand Coordination. , 0, , .		0
124	Compact Quantum Dots Photoligated with Multifunctional Zwitterionic Coating for Immunofluorescence and Imaging. , 2021, , .		0
125	Optimizing QDs and Other Inorganic Probes for Imaging and Sensing. , 2017, , .		0
126	Characterization of the ligand structure and stoichiometry on quantum dots and gold nanocrystals using NMR spectroscopy. , 2018, , .		0

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127	FÃ¶rster Resonance Energy Transfer between Colloidal CuInS2/ZnS Quantum Dots and Dark Quenchers. , 0, , .		0