Vladimir Bulovic

List of Publications by Citations

135 papers	19,289 citations	59 h-index	138 g-index
148 ext. papers	21,879 ext. citations	15.3 avg, IF	7.02 L-index

#	Paper	IF	Citations
135	Electroluminescence from single monolayers of nanocrystals in molecular organic devices. *Nature*, **2002**, 420, 800-3	50.4	2182
134	Emergence of colloidal quantum-dot light-emitting technologies. *Nature Photonics*, **2013**, 7, 13-23	33.9	1760
133	Improved performance and stability in quantum dot solar cells through band alignment engineering. *Nature Materials*, **2014**, 13, 796-801	27	1282
132	High-efficiency quantum-dot light-emitting devices with enhanced charge injection. *Nature Photonics*, **2013**, 7, 407-412	33.9	860
131	Efficient perovskite solar cells via improved carrier management. *Nature*, **2021**, 590, 587-593	50.4	809
130	Quantum dot light-emitting devices with electroluminescence tunable over the entire visible spectrum. *Nano Letters*, **2009**, 9, 2532-6	11.5	713
129	Photo-induced halide redistribution in organic-inorganic perovskite films. *Nature Communications*, **2016**, 7, 11683	17.4	621
128	Colloidal PbS quantum dot solar cells with high fill factor. *ACS Nano*, **2010**, 4, 3743-52	16.7	385
127	Consensus statement for stability assessment and reporting for perovskite photovoltaics based on ISOS procedures. *Nature Energy*, **2020**, 5, 35-49	62.3	369
126	Electroluminescence from a mixed red-green-blue colloidal quantum dot monolayer. *Nano Letters*, **2007**, 7, 2196-200	11.5	367
125	Blue luminescence from (CdS)ZnS core-shell nanocrystals. *Angewandte Chemie - International Edition*, **2004**, 43, 2154-8	16.4	355
124	An interface stabilized perovskite solar cell with high stabilized efficiency and low voltage loss. *Energy and Environmental Science*, **2019**, 12, 2192-2199	35.4	353
123	Inkjet-Printed Quantum Dot–Polymer Composites for Full-Color AC-Driven Displays. *Advanced Materials*, **2009**, 21, 2151-2155	24	319
122	Direct-indirect character of the bandgap in methylammonium lead iodide perovskite. *Nature Materials*, **2017**, 16, 115-120	27	298
121	Colloidal quantum dot light-emitting devices. *Nano Reviews*, **2010**, 1,		297
120	Pathways for solar photovoltaics. *Energy and Environmental Science*, **2015**, 8, 1200-1219	35.4	293
119	Contact printing of quantum dot light-emitting devices. *Nano Letters*, **2008**, 8, 4513-7	11.5	245

118	Effect of synthetic accessibility on the commercial viability of organic photovoltaics. *Energy and Environmental Science*, **2013**, 6, 711	35.4	237
117	Improved current extraction from ZnO/PbS quantum dot heterojunction photovoltaics using a MoO3 interfacial layer. *Nano Letters*, **2011**, 11, 2955-61	11.5	237
116	Color-saturated green-emitting QD-LEDs. *Angewandte Chemie - International Edition*, **2006**, 45, 5796-9	16.4	233
115	Large-Area Ordered Quantum-Dot Monolayers via Phase Separation During Spin-Casting. *Advanced Functional Materials*, **2005**, 15, 1117-1124	15.6	232
114	An ingestible bacterial-electronic system to monitor gastrointestinal health. *Science*, **2018**, 360, 915-918	33.3	232
113	Transparent, near-infrared organic photovoltaic solar cells for window and energy-scavenging applications. *Applied Physics Letters*, **2011**, 98, 113305	3.4	230
112	ZnO nanowire arrays for enhanced photocurrent in PbS quantum dot solar cells. *Advanced Materials* , **2013**, 25, 2790-6	24	226
111	Metal Halide Perovskite Polycrystalline Films Exhibiting Properties of Single Crystals. *Joule*, **2017**, 1, 155-167	21.8	222
110	Direct monolithic integration of organic photovoltaic circuits on unmodified paper. *Advanced Materials*, **2011**, 23, 3499-3505	24	221
109	Lattice strain causes non-radiative losses in halide perovskites. *Energy and Environmental Science*, **2019**, 12, 596-606	35.4	211
108	Stable Light-Emitting Diodes Using Phase-Pure Ruddlesden-Popper Layered Perovskites. *Advanced Materials*, **2018**, 30, 1704217	24	210
107	Photodetectors based on treated CdSe quantum-dot films. *Applied Physics Letters*, **2005**, 87, 213505	3.4	210
106	NiO as an inorganic hole-transporting layer in quantum-dot light-emitting devices. *Nano Letters*, **2006**, 6, 2991-4	11.5	204
105	Tuning the performance of hybrid organic/inorganic quantum dot light-emitting devices. *Organic Electronics*, **2003**, 4, 123-130	3.5	197
104	Open-circuit voltage deficit, radiative sub-bandgap states, and prospects in quantum dot solar cells. *Nano Letters*, **2015**, 15, 3286-94	11.5	193
103	Strong coupling in a microcavity LED. *Physical Review Letters*, **2005**, 95, 036401	7.4	187
102	Tailoring metal halide perovskites through metal substitution: influence on photovoltaic and material properties. *Energy and Environmental Science*, **2017**, 10, 236-246	35.4	185
101	Graphene cathode-based ZnO nanowire hybrid solar cells. *Nano Letters*, **2013**, 13, 233-9	11.5	179

100	Controllable Perovskite Crystallization via Antisolvent Technique Using Chloride Additives for Highly Efficient Planar Perovskite Solar Cells. *Advanced Energy Materials*, **2019**, 9, 1803587	21.8	174
99	QLEDs for displays and solid-state lighting. *MRS Bulletin*, **2013**, 38, 703-711	3.2	154
98	Practical roadmap and limits to nanostructured photovoltaics. *Advanced Materials*, **2011**, 23, 5712-27	24	150
97	Air-stable operation of transparent, colloidal quantum dot based LEDs with a unipolar device architecture. *Nano Letters*, **2010**, 10, 24-9	11.5	133
96	Origin of efficiency roll-off in colloidal quantum-dot light-emitting diodes. *Physical Review Letters*, **2013**, 110, 217403	7.4	124
95	Low-temperature solution-processed solar cells based on PbS colloidal quantum dot/CdS heterojunctions. *Nano Letters*, **2013**, 13, 994-9	11.5	118
94	The Impact of Atmosphere on the Local Luminescence Properties of Metal Halide Perovskite Grains. *Advanced Materials*, **2018**, 30, e1706208	24	116
93	Improving the performance of P3HT-fullerene solar cells with side-chain-functionalized poly(thiophene) additives: a new paradigm for polymer design. *ACS Nano*, **2012**, 6, 3044-56	16.7	115
92	Charge-Carrier Recombination in Halide Perovskites. *Chemical Reviews*, **2019**, 119, 11007-11019	68.1	113
91	All vapor-deposited lead-free doped CsSnBr3 planar solar cells. *Nano Energy*, **2016**, 28, 469-474	17.1	108
90	Photo-assisted water oxidation with cobalt-based catalyst formed from thin-film cobalt metal on silicon photoanodes. *Energy and Environmental Science*, **2011**, 4, 2058	35.4	103
89	Triplet exciton dissociation in singlet exciton fission photovoltaics. *Advanced Materials*, **2012**, 24, 6169-74	24	100
88	Speed Limit for Triplet-Exciton Transfer in Solid-State PbS Nanocrystal-Sensitized Photon Upconversion. *ACS Nano*, **2017**, 11, 7848-7857	16.7	97
87	Solid state cavity QED: Strong coupling in organic thin films. *Organic Electronics*, **2007**, 8, 94-113	3.5	94
86	Triplet-Sensitization by Lead Halide Perovskite Thin Films for Near-Infrared-to-Visible Upconversion. *ACS Energy Letters*, **2019**, 4, 888-895	20.1	83
85	Spin-dependent charge transfer state design rules in organic photovoltaics. *Nature Communications*, **2015**, 6, 6415	17.4	76
84	Synthesis cost dictates the commercial viability of lead sulfide and perovskite quantum dot photovoltaics. *Energy and Environmental Science*, **2018**, 11, 2295-2305	35.4	75
83	Electrophoretic deposition of CdSe/ZnS quantum dots for light-emitting devices. *Advanced Materials*, **2013**, 25, 1420-3	24	72

82	Photovoltaic Performance of PbS Quantum Dots Treated with Metal Salts. *ACS Nano*, **2016**, 10, 3382-8	16.7	70
81	Organic solar cells with graphene electrodes and vapor printed poly(3,4-ethylenedioxythiophene) as the hole transporting layers. *ACS Nano*, **2012**, 6, 6370-7	16.7	69
80	Quantum dot/J-aggregate blended films for light harvesting and energy transfer. *Nano Letters*, **2010**, 10, 3995-9	11.5	68
79	Synthesis of J-aggregating dibenz[a,j]anthracene-based macrocycles. *Journal of the American Chemical Society*, **2009**, 131, 5659-66	16.4	67
78	Heterojunction photovoltaics using printed colloidal quantum dots as a photosensitive layer. *Nano Letters*, **2009**, 9, 860-3	11.5	66
77	p-i-n Heterojunction solar cells with a colloidal quantum-dot absorber layer. *Advanced Materials*, **2014**, 26, 4845-50	24	64
76	Direct formation of a water oxidation catalyst from thin-film cobalt. *Energy and Environmental Science*, **2010**, 3, 1726	35.4	55
75	Bias-induced photoluminescence quenching of single colloidal quantum dots embedded in organic semiconductors. *Nano Letters*, **2007**, 7, 3781-6	11.5	55
74	Interfacial recombination for fast operation of a planar organic/QD infrared photodetector. *Advanced Materials*, **2010**, 22, 5250-4	24	54
73	Plexciton Dirac points and topological modes. *Nature Communications*, **2016**, 7, 11783	17.4	52
72	The Impact of Phase Retention on the Structural and Optoelectronic Properties of Metal Halide Perovskites. *Advanced Materials*, **2016**, 28, 10757-10763	24	52
71	Forming oriented organic crystals from amorphous thin films on patterned substrates via solvent-vapor annealing. *Organic Electronics*, **2005**, 6, 211-220	3.5	51
70	Bilayer heterojunction polymer solar cells using unsubstituted polythiophene via oxidative chemical vapor deposition. *Solar Energy Materials and Solar Cells*, **2012**, 99, 190-196	6.4	49
69	An Organic Active-Matrix Imager. *IEEE Transactions on Electron Devices*, **2008**, 55, 527-532	2.9	49
68	In situ vapor-deposited parylene substrates for ultra-thin, lightweight organic solar cells. *Organic Electronics*, **2016**, 31, 120-126	3.5	45
67	Interfacial Effects of Tin Oxide Atomic Layer Deposition in Metal Halide Perovskite Photovoltaics. *Advanced Energy Materials*, **2018**, 8, 1800591	21.8	44
66	Electroluminescence from nanoscale materials via field-driven ionization. *Nano Letters*, **2011**, 11, 2927-32	11.5	42
65	The Role of Electron–Hole Separation in Thermally Activated Delayed Fluorescence in Donor–Acceptor Blends. *Journal of Physical Chemistry C*, **2015**, 119, 25591-25597	3.8	40

64	Top-illuminated Organic Photovoltaics on a Variety of Opaque Substrates with Vapor-printed Poly(3,4-ethylenedioxythiophene) Top Electrodes and MoO3 Buffer Layer. *Advanced Energy Materials*, **2012**, 2, 1404-1409	21.8	34
63	Paper Electronics: Direct Monolithic Integration of Organic Photovoltaic Circuits on Unmodified Paper (Adv. Mater. 31/2011). *Advanced Materials*, **2011**, 23, 3499-3499	24	34
62	Probing buried recombination pathways in perovskite structures using 3D photoluminescence tomography. *Energy and Environmental Science*, **2018**, 11, 2846-2852	35.4	32
61	Cyclobutadiene C60 Adducts: N-Type Materials for Organic Photovoltaic Cells with High VOC. *Advanced Functional Materials*, **2013**, 23, 3061-3069	15.6	32
60	Near-infrared photodetector consisting of J-aggregating cyanine dye and metal oxide thin films. *Applied Physics Letters*, **2012**, 101, 113303	3.4	32
59	Impact of microstructure on the electron Hole interaction in lead halide perovskites. *Energy and Environmental Science*, **2017**, 10, 1358-1366	35.4	31
58	Benefit from Photon Recycling at the Maximum-Power Point of State-of-the-Art Perovskite Solar Cells. *Physical Review Applied*, **2019**, 12,	4.3	30
57	Study of field driven electroluminescence in colloidal quantum dot solids. *Journal of Applied Physics* , **2012**, 111, 113701	2.5	30
56	Photoluminescence quenching of tris-(8-hydroxyquinoline) aluminum thin films at interfaces with metal oxide films of different conductivities. *Physical Review B*, **2009**, 79,	3.3	30
55	Micropatterning metal electrode of organic light emitting devices using rapid polydimethylsiloxane lift-off. *Applied Physics Letters*, **2007**, 91, 043102	3.4	30
54	Lateral heterojunction photodetector consisting of molecular organic and colloidal quantum dot thin films. *Applied Physics Letters*, **2009**, 94, 043307	3.4	29
53	Photoluminescent Arrays of Nanopatterned Monolayer MoS2. *Advanced Functional Materials*, **2017**, 27, 1703688	15.6	28
52	Terahertz-Driven Luminescence and Colossal Stark Effect in CdSe-CdS Colloidal Quantum Dots. *Nano Letters*, **2017**, 17, 5375-5380	11.5	28
51	Twenty-fold enhancement of molecular fluorescence by coupling to a J-aggregate critically coupled resonator. *ACS Nano*, **2012**, 6, 467-71	16.7	26
50	Lasing through a strongly-coupled mode by intra-cavity pumping. *Optics Express*, **2013**, 21, 12122-8	3.3	26
49	The application of oxidative chemical vapor deposited (oCVD) PEDOT to textured and non-planar photovoltaic device geometries for enhanced light trapping. *Organic Electronics*, **2013**, 14, 2257-2268	3.5	25
48	Contact-printed microelectromechanical systems. *Advanced Materials*, **2010**, 22, 1840-4	24	25
47	Cathode buffer layers based on vacuum and solution deposited poly(3,4-ethylenedioxythiophene) for efficient inverted organic solar cells. *Applied Physics Letters*, **2012**, 100, 183301	3.4	24

46	Nanoscale morphology revealed at the interface between colloidal quantum dots and organic semiconductor films. *Nano Letters*, **2010**, 10, 2421-6	11.5	23
45	Performance Comparison of Different Organic Molecular Floating-Gate Memories. *IEEE Nanotechnology Magazine*, **2011**, 10, 594-599	2.6	23
44	Micron-Scale Patterning of High Quantum Yield Quantum Dot LEDs. *Advanced Materials Technologies*, **2019**, 4, 1800727	6.8	22
43	All-vacuum-deposited inorganic cesium lead halide perovskite light-emitting diodes. *APL Materials*, **2020**, 8, 051113	5.7	22
42	Tunable Infrared Emission From Printed Colloidal Quantum Dot/Polymer Composite Films on Flexible Substrates. *Journal of Display Technology*, **2010**, 6, 90-93		22
41	Intracavity optical pumping of J-aggregate microcavity exciton polaritons. *Physical Review B*, **2010**, 82,	3.3	20
40	Oxidative Chemical Vapor Deposition of Neutral Hole Transporting Polymer for Enhanced Solar Cell Efficiency and Lifetime. *Advanced Materials*, **2016**, 28, 6399-404	24	19
39	Bulk recrystallization for efficient mixed-cation mixed-halide perovskite solar cells. *Journal of Materials Chemistry A*, **2019**, 7, 25511-25520	13	19
38	Lateral organic bilayer heterojunction photoconductors. *Applied Physics Letters*, **2008**, 93, 063305	3.4	18
37	Sub-50 mV NEM relay operation enabled by self-assembled molecular coating **2016**,		18
36	Color-Saturated Green-Emitting QD-LEDs. *Angewandte Chemie*, **2006**, 118, 5928-5931	3.6	16
35	Multijunction organic photovoltaics with a broad spectral response. *Physical Chemistry Chemical Physics*, **2012**, 14, 14548-53	3.6	14
34	M13 Virus-Based Framework for High Fluorescence Enhancement. *Small*, **2019**, 15, e1901233	11	13
33	High-Speed Vapor Transport Deposition of Perovskite Thin Films. *ACS Applied Materials & Interfaces*, **2019**, 11, 32928-32936	9.5	13
32	Contact printing of colloidal nanocrystal thin films for hybrid organic/quantum dot optoelectronic devices. *Nano Reviews*, **2012**, 3,		13
31	Method for fabrication of saturated RGB quantum dot light-emitting devices **2005**,		13
30	Tunneling Nanoelectromechanical Switches Based on Compressible Molecular Thin Films. *ACS Nano* , **2015**, 9, 7886-94	16.7	12
29	Silver Nanowire Back Electrode Stabilized with Graphene Oxide Encapsulation for Inverted Semitransparent Organic Solar Cells with Longer Lifetime. *ACS Applied Energy Materials*, **2021**, 4, 1431-1441	6.1	12

28	Graphene–Perovskite Schottky Barrier Solar Cells. *Advanced Sustainable Systems*, **2018**, 2, 1700106	5.9	11
27	Nanocrystal-Sensitized Infrared-to-Visible Upconversion in a Microcavity under Subsolar Flux. *Nano Letters*, **2021**, 21, 1011-1016	11.5	10
26	V OC enhancement in polymer solar cells with isobenzofulvene–C 60 adducts. *Organic Electronics*, **2016**, 31, 48-55	3.5	8
25	Decreased Synthesis Costs and Waste Product Toxicity for Lead Sulfide Quantum Dot Ink Photovoltaics. *Advanced Sustainable Systems*, **2019**, 3, 1900061	5.9	8
24	Solid-State Solvation and Enhanced Exciton Diffusion in Doped Organic Thin Films under Mechanical Pressure. *ACS Nano*, **2015**, 9, 4412-8	16.7	7
23	Predicting the linear optical response of J-aggregate microcavity exciton-polariton devices. *Physical Review B*, **2008**, 78,	3.3	7
22	Electrically tunable organic vertical-cavity surface-emitting laser. *Applied Physics Letters*, **2014**, 105, 073303	3.4	6
21	Terahertz-Driven Stark Spectroscopy of CdSe and CdSe-CdS Core-Shell Quantum Dots. *Nano Letters* , **2019**, 19, 8125-8131	11.5	4
20	Colloidal quantum dot light emitting devices148-172		4
19	Maximizing the external radiative efficiency of hybrid perovskite solar cells. *Pure and Applied Chemistry*, **2020**, 92, 697-706	2.1	4
18	Predicting Low Toxicity and Scalable Solvent Systems for High-Speed Roll-to-Roll Perovskite Manufacturing. *Solar Rrl*,2100567	7.1	4
17	Morphology control of perovskite films: a two-step, all solution process for conversion of lead selenide into methylammonium lead iodide. *Materials Chemistry Frontiers*, **2021**, 5, 1410-1417	7.8	4
16	Luminescence of III-IV-V thin film alloys grown by metalorganic chemical vapor deposition. *Journal of Applied Physics*, **2018**, 123, 175101	2.5	2
15	ZnO Nanowire Arrays for Enhanced Photocurrent in PbS Quantum Dot Solar Cells (Adv. Mater. 20/2013). *Advanced Materials*, **2013**, 25, 2789-2789	24	2
14	Micron-Scale Molecular Organic Microcavity Arrays Patterned With Thin-Film Contact-Patterning. *IEEE Photonics Technology Letters*, **2012**, 24, 104-106	2.2	2
13	Quantum Dot–Polymer Composites for Displays: Inkjet-Printed Quantum Dot–Polymer Composites for Full-Color AC-Driven Displays (Adv. Mater. 21/2009). *Advanced Materials*, **2009**, 21, NA-NA	24	2
12	Using Integrated Optical Feedback to Counter Pixel Aging and Stabilize Light Output of Organic LED Display Technology. *Journal of Display Technology*, **2008**, 4, 308-313		2
11	Hybrid Approach to Fabricate Uniform and Active Molecular Junctions. *Nano Letters*, **2021**, 21, 1606-1612	11.5	2

10	Voltage-controlled reversible modulation of colloidal quantum dot thin film photoluminescence. *Applied Physics Letters*, **2022**, 120, 211104	3.4	2
9	Coarsening and solidification via solvent-annealing in thin liquid films. *Journal of Fluid Mechanics*, **2013**, 723, 69-90	3.7	1
8	Morphology of contact printed colloidal quantum dots in organic semiconductor films: Implications for QD-LEDs. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2011**, 8, 120-123		1
7	35.1: Invited Paper: Quantum Dot Light Emitting Devices for Pixelated Full Color Displays. *Digest of Technical Papers SID International Symposium*, **2006**, 37, 1368	0.5	1
6	Polymer-on-Polymer Stamping on Micro- and Nano-Scales. *Materials Research Society Symposia Proceedings*, **2002**, 736, 1		1
5	Impact of Photon Recycling, Grain Boundaries, and Nonlinear Recombination on Energy Transport in Semiconductors. *ACS Photonics*, **2022**, 9, 110-122	6.3	1
4	Monolayer Hexagonal Boron Nitride: An Efficient Electron Blocking Layer in Organic Photovoltaics. *Advanced Functional Materials*, **2021**, 31, 2101238	15.6	0
3	Planarization in Electrochemically Fabricated Nanodimensional Films. *Journal of Physical Chemistry C*, **2008**, 112, 7318-7325	3.8	
2	Predicting Low Toxicity and Scalable Solvent Systems for High-Speed Roll-to-Roll Perovskite Manufacturing. *Solar Rrl*, **2022**, 6, 2270034	7.1	
1	An Ultra-Thin Flexible Loudspeaker Based on a Piezoelectric Micro-Dome Array. *IEEE Transactions on Industrial Electronics*, **2022**, 1-1	8.9	