

Laurent Pedesseau

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

84
papers

8,007
citations

28
h-index

89
g-index

98
ext. papers

9,250
ext. citations

7.1
avg, IF

6.03
L-index

#	Paper	IF	Citations
84	Dangling Octahedra Enable Edge States in 2D Lead Halide Perovskites.. <i>Advanced Materials</i> , 2022 , e2201666	16.6	3
83	Electronic structure and stability of Cs ₂ TiX ₆ and Cs ₂ ZrX ₆ (X = Br, I) vacancy ordered double perovskites. <i>Applied Physics Letters</i> , 2021 , 119, 181903	3.4	2
82	Epitaxial III-V/Si Vertical Heterostructures with Hybrid 2D-Semimetal/Semiconductor Ambipolar and Photoactive Properties. <i>Advanced Science</i> , 2021 , e2101661	13.6	5
81	Nonadiabatic molecular dynamics analysis of hybrid Dion-Jacobson 2D leads iodide perovskites. <i>Applied Physics Letters</i> , 2021 , 119, 201102	3.4	3
80	Negative Pressure Engineering with Large Cage Cations in 2D Halide Perovskites Causes Lattice Softening. <i>Journal of the American Chemical Society</i> , 2020 , 142, 11486-11496	16.4	41
79	Detrimental effects of ion migration in the perovskite and hole transport layers on the efficiency of inverted perovskite solar cells. <i>Journal of Photonics for Energy</i> , 2020 , 10, 1	1.2	2
78	Importance of Vacancies and Doping in the Hole-Transporting Nickel Oxide Interface with Halide Perovskites. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 6633-6640	9.5	15
77	Fully Inorganic Mixed Cation Lead Halide Perovskite Nanoparticles: A Study at the Atomic Level. <i>Chemistry of Materials</i> , 2020 , 32, 1467-1474	9.6	9
76	Strong Electron-Phonon Interaction in 2D Vertical Homovalent III-V Singularities. <i>ACS Nano</i> , 2020 , 14, 13127-13136	16.7	3
75	Charge carrier dynamics in two-dimensional hybrid perovskites: Dion-Jacobson vs. Ruddlesden-Popper phases. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 22009-22022	13	39
74	Shape transition in InAs nanostructures formed by Stranski-Krastanow growth mode on InP (001) substrate. <i>Applied Physics Letters</i> , 2019 , 114, 173102	3.4	4
73	Cation Alloying Delocalizes Polarons in Lead Halide Perovskites. <i>Journal of Physical Chemistry Letters</i> , 2019 , 10, 3516-3524	6.4	26
72	A study of the strain distribution by scanning X-ray diffraction on GaP/Si for III-V monolithic integration on silicon. <i>Journal of Applied Crystallography</i> , 2019 , 52, 809-815	3.8	2
71	Structural and thermodynamic limits of layer thickness in 2D halide perovskites. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 58-66	11.5	152
70	Hybrid Dion-Jacobson 2D Lead Iodide Perovskites. <i>Journal of the American Chemical Society</i> , 2018 , 140, 3775-3783	16.4	426
69	Density of States Broadening in CH ₃ NH ₃ PbI ₃ Hybrid Perovskites Understood from ab Initio Molecular Dynamics Simulations. <i>ACS Energy Letters</i> , 2018 , 3, 787-793	20.1	21
68	Composite Nature of Layered Hybrid Perovskites: Assessment on Quantum and Dielectric Confinements and Band Alignment. <i>ACS Nano</i> , 2018 , 12, 3321-3332	16.7	94

67	Computational analysis of hybrid perovskite on silicon 2-T tandem solar cells based on a Si tunnel junction. <i>Optical and Quantum Electronics</i> , 2018 , 50, 1	2.4	14
66	A new approach to modelling Kelvin probe force microscopy of hetero-structures in the dark and under illumination. <i>Optical and Quantum Electronics</i> , 2018 , 50, 1	2.4	2
65	Anharmonicity and Disorder in the Black Phases of Cesium Lead Iodide Used for Stable Inorganic Perovskite Solar Cells. <i>ACS Nano</i> , 2018 , 12, 3477-3486	16.7	359
64	Concept of Lattice Mismatch and Emergence of Surface States in Two-dimensional Hybrid Perovskite Quantum Wells. <i>Nano Letters</i> , 2018 , 18, 5603-5609	11.5	67
63	Scaling law for excitons in 2D perovskite quantum wells. <i>Nature Communications</i> , 2018 , 9, 2254	17.4	372
62	Universal description of III-V/Si epitaxial growth processes. <i>Physical Review Materials</i> , 2018 , 2,	3.2	30
61	Anharmonicity and Disorder in the Black Phases of CsPbI ₃ used for Stable Inorganic Perovskite Solar Cells 2018 ,		1
60	Geometry Distortion and Small Polaron Binding Energy Changes with Ionic Substitution in Halide Perovskites. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 7130-7136	6.4	41
59	Multiscale in modelling and validation for solar photovoltaics. <i>EPJ Photovoltaics</i> , 2018 , 9, 10	0.7	5
58	A Stress-Free and Textured GaP Template on Silicon for Solar Water Splitting. <i>Advanced Functional Materials</i> , 2018 , 28, 1801585	15.6	11
57	Extremely efficient internal exciton dissociation through edge states in layered 2D perovskites. <i>Science</i> , 2017 , 355, 1288-1292	33.3	648
56	Influence of Schottky contact on the C-V and J-V characteristics of HTM-free perovskite solar cells. <i>EPJ Photovoltaics</i> , 2017 , 8, 85501	0.7	16
55	Al ₄ SiC ₄ vibrational properties: density functional theory calculations compared to Raman and infrared spectroscopy measurements. <i>Journal of Raman Spectroscopy</i> , 2017 , 48, 891-896	2.3	4
54	Decreasing the electronic confinement in layered perovskites through intercalation. <i>Chemical Science</i> , 2017 , 8, 1960-1968	9.4	85
53	Advances and Promises of Layered Halide Hybrid Perovskite Semiconductors. <i>ACS Nano</i> , 2016 , 10, 9776-9786	17.8	276
52	Quantum confinement and dielectric profiles of colloidal nanoplatelets of halide inorganic and hybrid organic-inorganic perovskites. <i>Nanoscale</i> , 2016 , 8, 6369-78	7.7	106
51	Theoretical insights into hybrid perovskites for photovoltaic applications 2016 ,		6
50	Dielectric properties of hybrid perovskites and drift-diffusion modeling of perovskite cells 2016 ,		6

49	Theoretical studies of Rashba and Dresselhaus effects in hybrid organic-inorganic perovskites for optoelectronic applications 2016 ,		2
48	Chapter 7:Electronic Properties of Metal Halide Perovskites. <i>RSC Energy and Environment Series</i> , 2016 , 202-233	0.6	2
47	High-efficiency two-dimensional Ruddlesden-Popper perovskite solar cells. <i>Nature</i> , 2016 , 536, 312-6	50.4	2161
46	Polaron Stabilization by Cooperative Lattice Distortion and Cation Rotations in Hybrid Perovskite Materials. <i>Nano Letters</i> , 2016 , 16, 3809-16	11.5	203
45	Interplay of spin-orbit coupling and lattice distortion in metal substituted 3D tri-chloride hybrid perovskites. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 9232-9240	13	80
44	First-principles study of a sodium borosilicate glass-former. II. The glass state. <i>Physical Review B</i> , 2015 , 91,	3.3	28
43	Solid-State Physics Perspective on Hybrid Perovskite Semiconductors. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 10161-10177	3.8	175
42	Ab initio calculations of polarization, piezoelectric constants, and elastic constants of InAs and InP in the wurtzite phase. <i>Journal of Experimental and Theoretical Physics</i> , 2015 , 121, 246-249	1	7
41	First-principles calculations of band offsets and polarization effects at InAs/InP interfaces. <i>Journal Physics D: Applied Physics</i> , 2015 , 48, 355105	3	3
40	Rashba and Dresselhaus Effects in Hybrid Organic-Inorganic Perovskites: From Basics to Devices. <i>ACS Nano</i> , 2015 , 9, 11557-67	16.7	232
39	First-principles study of a sodium borosilicate glass-former. I. The liquid state. <i>Physical Review B</i> , 2015 , 91,	3.3	24
38	Al ₄ Si ₄ wurtzite crystal: Structural, optoelectronic, elastic, and piezoelectric properties. <i>APL Materials</i> , 2015 , 3, 121101	5.7	13
37	Strain-induced fundamental optical transition in (In,Ga)As/GaP quantum dots. <i>Applied Physics Letters</i> , 2014 , 104, 011908	3.4	9
36	Analysis of Multivalley and Multibandgap Absorption and Enhancement of Free Carriers Related to Exciton Screening in Hybrid Perovskites. <i>Journal of Physical Chemistry C</i> , 2014 , 118, 11566-11572	3.8	404
35	Electronic properties of 2D and 3D hybrid organic/inorganic perovskites for optoelectronic and photovoltaic applications. <i>Optical and Quantum Electronics</i> , 2014 , 46, 1225-1232	2.4	49
34	DFT and $k \cdot p$ modelling of the phase transitions of lead and tin halide perovskites for photovoltaic cells. <i>Physica Status Solidi - Rapid Research Letters</i> , 2014 , 8, 31-35	2.5	158
33	Comment on "Density functional theory analysis of structural and electronic properties of orthorhombic perovskite CH ₃ NH ₃ PbI ₃ " by Y. Wang et al., Phys. Chem. Chem. Phys., 2014, 16, 1424-1429. <i>Physical Chemistry Chemical Physics</i> , 2014 , 16, 8697-8	3.6	12
32	Understanding quantum confinement of charge carriers in layered 2D hybrid perovskites. <i>ChemPhysChem</i> , 2014 , 15, 3733-41	3.2	175

31	Design of a lattice-matched III/V/Si photovoltaic tandem cell monolithically integrated on silicon substrate. <i>Optical and Quantum Electronics</i> , 2014 , 46, 1397-1403	2.4	19
30	Density Functional Theory Simulations of Semiconductors for Photovoltaic Applications: Hybrid Organic-Inorganic Perovskites and III/V Heterostructures. <i>International Journal of Photoenergy</i> , 2014 , 2014, 1-11	2.1	14
29	Electronic surface states and dielectric self-energy profiles in colloidal nanoscale platelets of CdSe. <i>Physical Chemistry Chemical Physics</i> , 2014 , 16, 25182-90	3.6	24
28	Theoretical study of optical properties of anti phase domains in GaP. <i>Journal of Applied Physics</i> , 2014 , 115, 063502	2.5	13
27	Monolithic Integration of Diluted-Nitride III/V-N Compounds on Silicon Substrates: Toward the III/V/Si Concentrated Photovoltaics. <i>Energy Harvesting and Systems</i> , 2014 , 1,	4.4	8
26	Theoretical insights into multibandgap hybrid perovskites for photovoltaic applications 2014 ,		8
25	Importance of Spin-Orbit Coupling in Hybrid Organic/Inorganic Perovskites for Photovoltaic Applications. <i>Journal of Physical Chemistry Letters</i> , 2013 , 4, 2999-3005	6.4	853
24	Vibrational properties of 2H-PbI ₂ semiconductors studied via Density Functional Theory calculations. <i>Thin Solid Films</i> , 2013 , 541, 9-11	2.2	5
23	Vibrational properties of SrCu ₂ O ₂ studied via Density Functional Theory calculations and compared to Raman and infrared spectroscopy measurements. <i>Thin Solid Films</i> , 2013 , 541, 113-116	2.2	4
22	Raman investigation of GaP/Bi interfaces grown by molecular beam epitaxy. <i>Thin Solid Films</i> , 2013 , 541, 72-75	2.2	3
21	Evaluation of InGaPN and GaAsPN materials lattice-matched to Si for multi-junction solar cells. <i>Journal of Applied Physics</i> , 2013 , 113, 123509	2.5	39
20	First-principles density functional theory study of strained wurtzite InP and InAs. <i>Journal Physics D: Applied Physics</i> , 2013 , 46, 505106	3	11
19	Non-linear electro-elastic coupling in highly strained zinc-blende compounds: InGaP/GaP [111] quantum wells. <i>Physica Status Solidi (B): Basic Research</i> , 2013 , 250, 765-768	1.3	
18	Electronic model for self-assembled hybrid organic/perovskite semiconductors: Reverse band edge electronic states ordering and spin-orbit coupling. <i>Physical Review B</i> , 2012 , 86,	3.3	143
17	Theoretical and experimental studies of (In,Ga)As/GaP quantum dots. <i>Nanoscale Research Letters</i> , 2012 , 7, 643	5	4
16	On the entanglement of electrostriction and non-linear piezoelectricity in non-centrosymmetric materials. <i>Applied Physics Letters</i> , 2012 , 100, 031903	3.4	20
15	Non-linear electro-elastic coupling in non-centrosymmetric materials. <i>Journal of Physics: Conference Series</i> , 2012 , 367, 012005	0.3	1
14	30-band k <p> method for quantum semiconductor heterostructures. <i>Applied Physics Letters</i>, 2011, 98, 251913</p>	3.4	11

13	Fell/FeIII mixed-valence state induced by Li-insertion into the metal-organic-framework Mil53(Fe): A DFT+U study. <i>Journal of Power Sources</i> , 2011 , 196, 3426-3432	8.9	46
12	Design of Electrode Materials for Lithium-Ion Batteries: The Example of Metal-Organic Frameworks. <i>Journal of Physical Chemistry C</i> , 2010 , 114, 9518-9527	3.8	75
11	Light emitting diodes on silicon substrates: preliminary results. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2009 , 6, 2212-2216		2
10	Semianalytical model for simulation of electronic properties of narrow-gap strained semiconductor quantum nanostructures. <i>Physical Review B</i> , 2008 , 77,	3.3	14
9	Polarization Insensibility of Columnar Quantum Dot Structure Emitting at : A Theoretical Study. <i>Research Letters in Physics</i> , 2008 , 2008, 1-4		
8	Theoretical study of highly strained InAs material from first-principles modelling: application to an ideal QD. <i>Journal Physics D: Applied Physics</i> , 2008 , 41, 165505	3	11
7	From k \cdot p to atomic calculations applied to semiconductor heterostructures. <i>Journal of Physics: Conference Series</i> , 2008 , 107, 012009	0.3	
6	InAs QDs on InP: polarization insensitive SOA and non-radiative Auger processes. <i>Optical and Quantum Electronics</i> , 2008 , 40, 1233-1238	2.4	2
5	Mass and momentum interface equilibrium by molecular modeling. Simulating AFM adhesion between (120) gypsum faces in a saturated solution and consequences on gypsum cohesion. <i>Cement and Concrete Research</i> , 2008 , 38, 290-299	10.3	8
4	Atomic Calculations Applied to Semiconductor Hetero Structures. <i>AIP Conference Proceedings</i> , 2007 ,	0	3
3	Semianalytical evaluation of linear and nonlinear piezoelectric potentials for quantum nanostructures with axial symmetry. <i>Applied Physics Letters</i> , 2007 , 91, 122112	3.4	21
2	Phases, periphases, and interphases equilibrium by molecular modeling. I. Mass equilibrium by the semianalytical stochastic perturbations method and application to a solution between (120) gypsum faces. <i>Journal of Chemical Physics</i> , 2004 , 121, 12511-22	3.9	3
1	Partial stresses in heterogeneous media by a direct statistical approach. <i>Comptes Rendus - Mecanique</i> , 2004 , 332, 305-312	2.1	3