

# Ben Hourahine

## List of Publications by Year in descending order

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96  
papers

3,669  
citations

236612

25  
h-index

133063

59  
g-index

99  
all docs

99  
docs citations

99  
times ranked

4358  
citing authors

#	ARTICLE	IF	CITATIONS
1	Non-destructive imaging of residual strains in GaN and their effect on optical and electrical properties using correlative light-electron microscopy. <i>Journal of Applied Physics</i> , 2022, 131, 075303.	1.1	1
2	Kikuchi pattern simulations of backscattered and transmitted electrons. <i>Journal of Microscopy</i> , 2021, 284, 157-184.	0.8	10
3	Subgrain structure and dislocations in WC-Co hard metals revealed by electron channelling contrast imaging. <i>International Journal of Refractory Metals and Hard Materials</i> , 2020, 87, 105159.	1.7	13
4	Advances in electron channelling contrast imaging and electron backscatter diffraction for imaging and analysis of structural defects in the scanning electron microscope. <i>IOP Conference Series: Materials Science and Engineering</i> , 2020, 891, 012023.	0.3	0
5	A Real-Time Time-Dependent Density Functional Tight-Binding Implementation for Semiclassical Excited State Electron-Nuclear Dynamics and Pump-Probe Spectroscopy Simulations. <i>Journal of Chemical Theory and Computation</i> , 2020, 16, 4454-4469.	2.3	36
6	DFTB+, a software package for efficient approximate density functional theory based atomistic simulations. <i>Journal of Chemical Physics</i> , 2020, 152, 124101.	1.2	589
7	ELSI - An open infrastructure for electronic structure solvers. <i>Computer Physics Communications</i> , 2020, 256, 107459.	3.0	27
8	Structural and luminescence imaging and characterisation of semiconductors in the scanning electron microscope. <i>Semiconductor Science and Technology</i> , 2020, 35, 054001.	1.0	7
9	Luminescence behavior of semipolar ( $10^{-1}$ Å <sup>-1</sup> ) InGaN/GaN structures on patterned Si substrates. <i>Journal of Applied Physics</i> , 2020, 127, 035705.	1.1	3
10	Imaging Extended Defects in Low Z materials using Electron Channelling Contrast Imaging - New Approaches and Challenges. <i>Microscopy and Microanalysis</i> , 2019, 25, 1760-1761.	0.2	0
11	Two beam toy model for dislocation contrast in ECCI. <i>Microscopy and Microanalysis</i> , 2019, 25, 1968-1969.	0.2	0
12	Determining GaN Nanowire Polarity and its Influence on Light Emission in the Scanning Electron Microscope. <i>Nano Letters</i> , 2019, 19, 3863-3870.	4.5	14
13	Collapsed carbon nanotubes: From nano to mesoscale via density functional theory-based tight-binding objective molecular modeling. <i>Carbon</i> , 2019, 143, 786-792.	5.4	12
14	Scanning electron microscopy as a flexible technique for investigating the properties of UV-emitting nitride semiconductor thin films. <i>Photonics Research</i> , 2019, 7, B73.	3.4	9
15	Energy-weighted dynamical scattering simulations of electron diffraction modalities in the scanning electron microscope. <i>Ultramicroscopy</i> , 2018, 187, 98-106.	0.8	11
16	Principal Modes of Maxwell's Equations. <i>Springer Series on Atomic, Optical, and Plasma Physics</i> , 2018, , 1-33.	0.1	1
17	Dislocation contrast in electron channelling contrast images as projections of strain-like components. <i>Materials Today: Proceedings</i> , 2018, 5, 14652-14661.	0.9	7
18	Theory of SERS enhancement: general discussion. <i>Faraday Discussions</i> , 2017, 205, 173-211.	1.6	27

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19	Coherent control of plasmons in nanoparticles with nonlocal response. Optics Communications, 2017, 382, 258-265.	1.0	6
20	Non-destructive Imaging of Extend Defects in III-nitride Thin film Structures Using Electron Channelling Contrast Imaging. Microscopy and Microanalysis, 2017, 23, 570-571.	0.2	0
21	Dynamical Simulations of Transmission Kikuchi Diffraction (TKD) Patterns. Microscopy and Microanalysis, 2017, 23, 540-541.	0.2	0
22	Enhancing ultraviolet spontaneous emission with a designed quantum vacuum. Optics Express, 2017, 25, 4162.	1.7	3
23	Reprint of: Electron channelling contrast imaging for III-nitride thin film structures. Materials Science in Semiconductor Processing, 2016, 55, 19-25.	1.9	0
24	Directional-dependent thickness and bending rigidity of phosphorene. Physical Review B, 2016, 94, .	1.1	16
25	Electron channelling contrast imaging for III-nitride thin film structures. Materials Science in Semiconductor Processing, 2016, 47, 44-50.	1.9	21
26	Critical impact of Ehrlichâ€“SchwÃ¼bel barrier on GaN surface morphology during homoepitaxial growth. Journal of Crystal Growth, 2016, 433, 36-42.	0.7	61
27	Dataset on coherent control of fields and induced currents in nonlinear multiphoton processes in a nanosphere. Scientific Data, 2015, 2, 150064.	2.4	1
28	Coherent control of radiation patterns of nonlinear multiphoton processes in nanoparticles. Scientific Reports, 2015, 5, 12040.	1.6	10
29	Electron Channeling Contrast Imaging of Defects in III-Nitride Semiconductors. Microscopy and Microanalysis, 2014, 20, 1024-1025.	0.2	0
30	Plasmon modes in single gold nanodiscs. Optics Express, 2014, 22, 12189.	1.7	35
31	Formation of Helices in Graphene Nanoribbons under Torsion. Journal of Physical Chemistry Letters, 2014, 5, 4083-4087.	2.1	14
32	Coincident Electron Channeling and Cathodoluminescence Studies of Threading Dislocations in GaN. Microscopy and Microanalysis, 2014, 20, 55-60.	0.2	27
33	Evaluation of E. M. Fields and Energy Transport in Metallic Nanoparticles with Near Field Excitation. Physical Science International Journal, 2014, 4, 565-575.	0.3	7
34	Electron channeling contrast imaging studies of nonpolar nitrides using a scanning electron microscope. Applied Physics Letters, 2013, 102, .	1.5	16
35	Optical control of scattering, absorption and lineshape in nanoparticles. Optics Express, 2013, 21, 20322.	1.7	9
36	Ewald summation on a helix: A route to self-consistent charge density-functional based tight-binding objective molecular dynamics. Journal of Chemical Physics, 2013, 139, 094110.	1.2	9

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37	Mode control of light scattering by nanoparticles. , 2013, , .		0
38	Strong near field coupling and enhanced energy extraction in metal nanostructures. , 2013, , .		0
39	The geometrical nature of optical resonances: from a sphere to fused dimer nanoparticles. Measurement Science and Technology, 2012, 23, 084002.	1.4	8
40	Rapid Nondestructive Analysis of Threading Dislocations in Wurtzite Materials Using the Scanning Electron Microscope. Physical Review Letters, 2012, 108, 135503.	2.9	56
41	Defect evolution and interplay in n-type InN. Applied Physics Letters, 2012, 100, 091907.	1.5	10
42	Applications of electron channeling contrast imaging for characterizing nitride semiconductor thin films. Microscopy and Microanalysis, 2012, 18, 684-685.	0.2	1
43	Accurate light scattering for non spherical particles from Mie-type theory. Journal of Physics: Conference Series, 2012, 367, 012010.	0.3	5
44	Global search for stable screw dislocation cores in III-V semiconductors. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 71-74.	0.8	2
45	Simple models for InGaN alloys. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 79-82.	0.8	2
46	Imaging and identifying defects in nitride semiconductor thin films using a scanning electron microscope. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 424-426.	0.8	16
47	Geometrical Mie theory for resonances in nanoparticles of any shape. Optics Express, 2011, 19, 21432.	1.7	44
48	CLEO<sup>#x00AE;</sup>/europe-EQEC 2009 electromagnetic resonances in nanoparticles of arbitrary shape. , 2011, , .		0
49	Excited Multiplets of Eu in GaN. Materials Research Society Symposia Proceedings, 2011, 1290, 1.	0.1	2
50	DFTB<sup>+</sup>and lanthanides. Journal of Physics: Conference Series, 2010, 242, 012005.	0.3	9
51	Luminescence of Eu ions in $\text{Al}_{x-1}\text{Ga}_x$ the entire alloy composition range. Physical Review B, 2009, 80, .		
52	Calculation of internal and scattered fields of axisymmetric nanoparticles at any point in space. Journal of Optics, 2009, 11, 054009.	1.5	30
53	Theoretical study of rare earth point defects in GaN. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 2358-2360.	0.8	23
54	Luminescence spectroscopy of Eu-implanted zincblende GaN. Physica Status Solidi (B): Basic Research, 2008, 245, 170-173.	0.7	3

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55	Efficient tight-binding approach for the study of strongly correlated systems. Physical Review B, 2007, 76, .	1.1	20
56	Treatment of Collinear and Noncollinear Electron Spin within an Approximate Density Functional Based Method. Journal of Physical Chemistry A, 2007, 111, 5622-5629.	1.1	55
57	An Efficient LDA+U Based Tight Binding Approach. Journal of Physical Chemistry A, 2007, 111, 5665-5670.	1.1	15
58	Initial Steps toward Automating the Fitting of DFTB Rep(r). Journal of Physical Chemistry A, 2007, 111, 5637-5641.	1.1	28
59	Self-Interaction and Strong Correlation in DFTB. Journal of Physical Chemistry A, 2007, 111, 5671-5677.	1.1	52
60	DFTB+, a Sparse Matrix-Based Implementation of the DFTB Method. Journal of Physical Chemistry A, 2007, 111, 5678-5684.	1.1	1,523
61	Rare earth doped III-nitrides for optoelectronics. EPJ Applied Physics, 2006, 36, 91-103.	0.3	59
62	Hydrogen molecules and platelets in germanium. Physica B: Condensed Matter, 2006, 376-377, 105-108.	1.3	8
63	A theoretical study of erbium in GaN. Physica B: Condensed Matter, 2006, 376-377, 512-515.	1.3	25
64	Characterization of the blue emission of Tm/Er co-implanted GaN. Materials Research Society Symposia Proceedings, 2005, 892, 544.	0.1	3
65	Development of radiation tolerant semiconductor detectors for the Super-LHC. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 546, 99-107.	0.7	29
66	Radiation-hard semiconductor detectors for SuperLHC. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 541, 189-201.	0.7	55
67	Recent advancements in the development of radiation hard semiconductor detectors for S-LHC. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2005, 552, 7-19.	0.7	33
68	Vibrational properties of elemental hydrogen centres in Si, Ge and dilute SiGe alloys. Journal of Physics Condensed Matter, 2005, 17, S2155-S2164.	0.7	13
69	Interstitial H <sub>2</sub> in germanium by Raman scattering and ab initio calculations. Physical Review B, 2005, 72, .	1.1	19
70	Electronic behavior of rare-earth dopants in AlN: A density-functional study. Physical Review B, 2005, 72, .	1.1	36
71	Hydrogen-related photoluminescent centers in SiC. Physical Review B, 2004, 70, .	1.1	2
72	SITE MULTIPLICITY OF RARE EARTH IONS IN III-NITRIDES. Materials Research Society Symposia Proceedings, 2004, 831, 714.	0.1	5

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73	Platinum and gold dihydrides in silicon. <i>Physica B: Condensed Matter</i> , 2003, 340-342, 668-672.	1.3	4
74	Structure and electrical activity of rare-earth dopants in selected III-Vs. <i>Materials Research Society Symposia Proceedings</i> , 2003, 798, 502.	0.1	0
75	Stable Hydrogen Pair Trapped at Carbon Impurities in Silicon. <i>Defect and Diffusion Forum</i> , 2003, 221-223, 1-10.	0.4	2
76	Infrared activity of hydrogen molecules trapped in Si. <i>Physical Review B</i> , 2003, 67, .	1.1	19
77	Germaniumâ€“hydrogen pairs in silicon. <i>Journal of Physics Condensed Matter</i> , 2003, 15, S2803-S2807.	0.7	7
78	Electrical activity of carbon-hydrogen centers in Si. <i>Physical Review B</i> , 2002, 66, .	1.1	37
79	Glide dislocations in diamond: first-principles calculations of similarities with and differences from silicon and the effects of hydrogen. <i>Journal of Physics Condensed Matter</i> , 2002, 14, 12689-12696.	0.7	11
80	Piezospectroscopic analysis of the hydrogenâ€“carbon complexes in silicon. <i>Physica B: Condensed Matter</i> , 2001, 308-310, 139-142.	1.3	5
81	Evidence for trapped by carbon impurities in silicon. <i>Physica B: Condensed Matter</i> , 2001, 308-310, 197-201.	1.3	23
82	p-type surface doping of diamond: a first-principles study. <i>Journal of Physics Condensed Matter</i> , 2001, 13, 8973-8978.	0.7	26
83	A molecular radical model for hydrogen and muonium in graphite. <i>Journal of Physics Condensed Matter</i> , 2001, 13, 2169-2175.	0.7	13
84	The Interaction of Hydrogen with Deep Level Defects in Silicon. <i>Solid State Phenomena</i> , 2000, 71, 173-248.	0.3	50
85	Combined infrared absorption and modeling study of a dicarbon-dihydrogen defect in silicon. <i>Physical Review B</i> , 2000, 62, 12859-12867.	1.1	14
86	Identification of the hexavacancy in silicon with theB804optical center. <i>Physical Review B</i> , 2000, 61, 12594-12597.	1.1	38
87	Weakly bound carbon-hydrogen complex in silicon. <i>Physical Review B</i> , 2000, 61, 16659-16666.	1.1	14
88	Local vibrational modes of two neighboring substitutional carbon atoms in silicon. <i>Physical Review B</i> , 2000, 62, 158-165.	1.1	21
89	Self-interstitialâ€“hydrogen complexes in silicon. <i>Physical Review B</i> , 1999, 59, 15729-15732.	1.1	7
90	Optically active hydrogen dimers in silicon. <i>Physica B: Condensed Matter</i> , 1999, 273-274, 176-179.	1.3	2

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91	Molecular hydrogen traps within silicon. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 1999, 58, 24-25.	1.7	5
92	Ab Initio Studies of Hydrogen Molecules in Silicon. , 1999, , 155-163.		0
93	A theoretical study of O chemisorption on GaN (0001)/(0001̄) surfaces. Solid State Communications, 1998, 108, 953-958.	0.9	18
94	Hydrogen molecules in silicon located at interstitial sites and trapped in voids. Physical Review B, 1998, 57, R12666-R12669.	1.1	89
95	Local Vibrational Modes of Weakly Bound O-H Complexes in Si. Materials Science Forum, 1997, 258-263, 391-398.	0.3	22
96	Anomalous Shift of the 1075 cm <sup>-1</sup> ; Oxygen-Hydrogen Defect in Silicon. Materials Science Forum, 1997, 258-263, 277-282.	0.3	12