

Per Erik Vullum

List of Publications by Year in descending order

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96
papers

1,790
citations

257450

24
h-index

345221

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98
all docs

98
docs citations

98
times ranked

2807
citing authors

#	ARTICLE	IF	CITATIONS
1	Atomap: a new software tool for the automated analysis of atomic resolution images using two-dimensional Gaussian fitting. <i>Advanced Structural and Chemical Imaging</i> , 2017, 3, 9.	4.0	159
2	Sponge-Like Porous Manganese(II,III) Oxide as a Highly Efficient Cathode Material for Rechargeable Magnesium Ion Batteries. <i>Chemistry of Materials</i> , 2016, 28, 6459-6470.	6.7	83
3	Silicon-Carbon composite anodes from industrial battery grade silicon. <i>Scientific Reports</i> , 2019, 9, 14814.	3.3	75
4	Thermal and mechanical properties of LaNbO ₄ -based ceramics. <i>Ceramics International</i> , 2009, 35, 2877-2883.	4.8	57
5	Effect of Mn and cooling rates on \hat{I}^{\pm} , \hat{I}^2 - and \hat{I}^{\pm} -Al \hat{I}^{\pm} -Fe \hat{I}^{\pm} -Si intermetallic phase formation in a secondary Al \hat{I}^{\pm} -Si alloy. <i>Materialia</i> , 2019, 5, 100198.	2.7	57
6	Monoclinic Ferroelastic Domains in LaCoO ₃ -Based Perovskites. <i>Advanced Materials</i> , 2007, 19, 4399-4403.	21.0	51
7	Electronic properties of polycrystalline LaFeO ₃ . Part I: Experimental results and the qualitative role of Schottky defects. <i>Solid State Ionics</i> , 2005, 176, 2783-2790.	2.7	50
8	Structural phases driven by oxygen vacancies at the La _{0.7} Sr _{0.3} MnO ₃ /SrTiO ₃ hetero-interface. <i>Applied Physics Letters</i> , 2015, 106, .	3.3	42
9	Positioning effects on quantum dot solar cells grown by molecular beam epitaxy. <i>Applied Physics Letters</i> , 2010, 96, .	3.3	41
10	GaN/AlGaN Nanocolumn Ultraviolet Light-Emitting Diode Using Double-Layer Graphene as Substrate and Transparent Electrode. <i>Nano Letters</i> , 2019, 19, 1649-1658.	9.1	39
11	Stress-Strain Behavior During Compression of Polycrystalline La _{1-x} Ca _x CoO ₃ Ceramics. <i>Journal of the American Ceramic Society</i> , 2005, 88, 726-730.	3.8	35
12	High capacity Mg batteries based on surface-controlled electrochemical reactions. <i>Nano Energy</i> , 2018, 48, 227-237.	16.0	35
13	Mechanical properties of mixed conducting La _{0.5} Sr _{0.5} Fe _{1-x} Co _x O ₃ (0 ≤ x ≤ 1) materials. <i>Journal of Solid State Electrochemistry</i> , 2006, 10, 635-642.	2.5	32
14	Structural and electronic properties of silver/silicon interfaces and implications for solar cell performance. <i>Physical Review B</i> , 2011, 83, .	3.2	32
15	Effect of Polar (111)-Oriented SrTiO ₃ on Initial Perovskite Growth. <i>Crystal Growth and Design</i> , 2016, 16, 2357-2362.	3.0	32
16	Surface stability of epitaxial La _{0.7} Sr _{0.3} MnO ₃ thin films on (111)-oriented SrTiO ₃ . <i>Journal of Applied Physics</i> , 2013, 113, .	2.5	31
17	Structural properties of the nanoscopic Al ₈ Ti ₁₅ solid solution observed in the hydrogen-cycled NaAlH ₄ + 0.1TiCl ₃ system. <i>Acta Materialia</i> , 2008, 56, 4691-4701.	7.9	30
18	TEM characterization of pure and transition metal enhanced NaAlH ₄ . <i>Journal of Alloys and Compounds</i> , 2011, 509, 281-289.	5.5	30

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19	Hydrogen Absorption Kinetics of the Transition-Metal-Chloride-Enhanced NaAlH ₄ System. Journal of Physical Chemistry C, 2012, 116, 14205-14217.	3.1	28
20	Inside the electrode: Looking at cycling products in Li/O ₂ batteries. Journal of Power Sources, 2019, 414, 130-140.	7.8	28
21	̂ ² - and ̂ ¹ -Al-Fe-Si intermetallic phase, their intergrowth and polytype formation. Journal of Alloys and Compounds, 2019, 780, 917-929.	5.5	27
22	High Interfacial Charge Storage Capability of Carbonaceous Cathodes for Mg Batteries. ACS Nano, 2018, 12, 2998-3009.	14.6	26
23	Prediction of elastic properties of nanofibrillated cellulose from micromechanical modeling and nano-structure characterization by transmission electron microscopy. Cellulose, 2013, 20, 761-770.	4.9	25
24	In situ synchrotron X-ray diffraction of ferroelastic La _{0.8} Ca _{0.2} CoO ₃ ceramics during uniaxial compression. Acta Materialia, 2006, 54, 2615-2624.	7.9	24
25	Impact of excess phosphorus doping and Si crystalline defects on Ag crystallite nucleation and growth in silver screen-printed Si solar cells. Progress in Photovoltaics: Research and Applications, 2015, 23, 367-375.	8.1	23
26	Titanium uptake and incorporation into silica nanostructures by the diatom Pinnularia sp. (Bacillariophyceae). Journal of Applied Phycology, 2015, 27, 777-786.	2.8	22
27	TEM observations of rhombohedral and monoclinic domains in LaCoO ₃ -based ceramics. Philosophical Magazine, 2008, 88, 1187-1208.	1.6	21
28	Hydrogen absorption kinetics and structural features of NaAlH ₄ enhanced with transition-metal and Ti-based nanoparticles. International Journal of Hydrogen Energy, 2012, 37, 15175-15186.	7.1	21
29	Reversibility of metal-hydride anodes in all-solid-state lithium secondary battery operating at room temperature. Solid State Ionics, 2018, 317, 263-267.	2.7	21
30	Vanadium Substitution in Li ₂ MnSiO ₄ /C as Positive Electrode for Li Ion Batteries. Journal of Physical Chemistry C, 2016, 120, 11359-11371.	3.1	20
31	Conductivity control via minimally invasive anti-Frenkel defects in a functional oxide. Nature Materials, 2020, 19, 1195-1200.	27.5	20
32	Formation of ZnO Nanosheets Grown by Catalyst-Assisted Pulsed Laser Deposition. Crystal Growth and Design, 2011, 11, 5298-5304.	3.0	19
33	Effect of Sb Segregation on Conductance and Catalytic Activity at Pt/Sb-Doped SnO ₂ Interface: A Synergetic Computational and Experimental Study. ACS Applied Materials & Interfaces, 2015, 7, 27782-27795.	8.0	19
34	The location of Ti containing phases after the completion of the NaAlH ₄ +xTiCl ₃ milling process. Journal of Alloys and Compounds, 2012, 513, 597-605.	5.5	18
35	Morphology effects in MgH ₂ anode for lithium ion batteries. International Journal of Hydrogen Energy, 2017, 42, 22551-22556.	7.1	18
36	Interfacial atomic structure and electrical activity of nano-facetted CSL grain boundaries in high-performance multi-crystalline silicon. Journal of Applied Physics, 2020, 127, .	2.5	18

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37	Assessing electron beam sensitivity for SrTiO ₃ and La _{0.7} Sr _{0.3} MnO ₃ using electron energy loss spectroscopy. Ultramicroscopy, 2016, 169, 98-106.	1.9	17
38	Quantitative strain analysis of InAs/GaAs quantum dot materials. Scientific Reports, 2017, 7, 45376.	3.3	17
39	Solvent-Controlled Charge Storage Mechanisms of Spinel Oxide Electrodes in Mg Organohaloaluminate Electrolytes. Nano Letters, 2018, 18, 763-772.	9.1	17
40	Epitaxial K _{0.5} Na _{0.5} NbO ₃ thin films by aqueous chemical solution deposition. Royal Society Open Science, 2019, 6, 180989.	2.4	17
41	On the biogenicity of Fe-oxhydroxide filaments in silicified low-temperature hydrothermal deposits: Implications for the identification of Fe-oxidizing bacteria in the rock record. Geobiology, 2020, 18, 31-53.	2.4	17
42	Selective area growth of AlGa _N nanopyramid arrays on graphene by metal-organic vapor phase epitaxy. Applied Physics Letters, 2018, 113, .	3.3	16
43	Interface microstructure and tensile properties of a third generation aluminium-steel butt weld produced using the Hybrid Metal Extrusion & Bonding (HYB) process. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 809, 140975.	5.6	16
44	Amorphous Al _{1-x} Ti _x , Al _{1-x} V _x , and Al _{1-x} Fe _x phases in the hydrogen cycled TiCl ₃ , VCl ₃ and FeCl ₃ enhanced NaAlH ₄ systems. Journal of Alloys and Compounds, 2012, 521, 112-120.	5.5	15
45	Functionality of the nanoscopic crystalline Al/amorphous Al ₅₀ Ti ₅₀ surface embedded composite observed in the NaAlH ₄ +xTiCl ₃ system after milling. Journal of Alloys and Compounds, 2012, 514, 163-169.	5.5	14
46	An analytical framework for modelling intermetallic compound (<i>IMC</i>) formation and optimising bond strength in aluminium-steel welds. Material Design and Processing Communications, 2019, 1, e57.	0.9	14
47	Nanocrystal segmentation in scanning precession electron diffraction data. Journal of Microscopy, 2020, 279, 158-167.	1.8	14
48	Dynamic observation of dislocation evolution and interaction with twin boundaries in silicon crystal growth using in situ synchrotron X-ray diffraction imaging. Acta Materialia, 2021, 210, 116819.	7.9	14
49	Abiotic and candidate biotic micro-alteration textures in subseafloor basaltic glass: A high-resolution in-situ textural and geochemical investigation. Chemical Geology, 2015, 410, 124-137.	3.3	13
50	Broadband infrared and THz transmitting silicon core optical fiber. Optical Materials Express, 2020, 10, 2491.	3.0	13
51	On intermetallic phases formed during interdiffusion between aluminium alloys and stainless steel. Intermetallics, 2022, 142, 107443.	3.9	13
52	Observations of nanoscopic, face centered cubic Ti and TiH _x . Applied Physics A: Materials Science and Processing, 2009, 94, 787-793.	2.3	12
53	A structural review of nanoscopic Al _{1-x} TM _x phase formation in the TMCl _n enhanced NaAlH ₄ system. Journal of Alloys and Compounds, 2012, 527, 16-24.	5.5	12
54	3D aligned-carbon-nanotubes@Li ₂ FeSiO ₄ arrays as high rate capability cathodes for Li-ion batteries. Nanotechnology, 2013, 24, 435703.	2.6	12

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55	Understanding Capacity Fading of MgH ₂ Conversion-Type Anodes via Structural Morphology Changes and Electrochemical Impedance. Journal of Physical Chemistry C, 2018, 122, 8750-8759.	3.1	12
56	Direct Observation of Charge Transfer between NO _x and Monolayer MoS ₂ by Operando Scanning Photoelectron Microscopy. ACS Applied Nano Materials, 2021, 4, 3319-3324.	5.0	11
57	Temperature-Dependent Adhesion in van der Waals Heterostructures. Advanced Materials Interfaces, 2021, 8, 2100838.	3.7	11
58	Characterization of a-SiN _x :H layer: Bulk properties, interface with Si and solar cell efficiency. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 658-668.	1.8	10
59	Direct Integration of Strained- α -Pt Catalysts into Proton-Exchange-Membrane Fuel Cells with Atomic Layer Deposition. Advanced Materials, 2021, 33, e2007885.	21.0	10
60	Bottom-Up Fabrication of Oxygen Reduction Electrodes with Atomic Layer Deposition for High-Power-Density PEMFCs. Cell Reports Physical Science, 2021, 2, 100297.	5.6	10
61	Preparation of Silicon Nanostructures for Lithium Ion Battery Anodes. ECS Transactions, 2011, 35, 149-158.	0.5	9
62	Structural investigation of epitaxial LaFeO ₃ thin films on (111) oriented SrTiO ₃ by transmission electron microscopy. Journal of Physics: Conference Series, 2015, 644, 012002.	0.4	9
63	Atomic resolution imaging of beryl: an investigation of the nano-channel occupation. Journal of Microscopy, 2017, 265, 245-250.	1.8	9
64	Nonlinear optical response and structural properties of MBE-grown Fe:ZnS films. Optical Materials Express, 2018, 8, 356.	3.0	9
65	Microstructural and mechanical characterisation of a second generation hybrid metal extrusion & bonding aluminium-steel butt joint. Materials Characterization, 2021, 173, 110761.	4.4	9
66	Observation of Electric-Field-Induced Structural Dislocations in a Ferroelectric Oxide. Nano Letters, 2021, 21, 3386-3392.	9.1	9
67	Inhibition of metal dusting corrosion on Fe-based alloy by combined near surface severe plastic deformation (NS-SPD) and thermochemical treatment. Corrosion Science, 2021, 190, 109702.	6.6	9
68	Mapping structural gradients in isotactic polypropylene using scanning wide-angle X-ray scattering. Polymer, 2013, 54, 1867-1875.	3.8	8
69	The interface of a-SiN _x :H and Si: Linking the nano-scale structure to passivation quality. Solar Energy Materials and Solar Cells, 2014, 120, 311-316.	6.2	8
70	The influence of AlN buffer layer on the growth of self-assembled GaN nanocolumns on graphene. Scientific Reports, 2020, 10, 853.	3.3	8
71	Effects of metal dusting relevant exposures of alloy 601 surfaces on carbon formation and oxide development. Catalysis Today, 2021, 369, 48-61.	4.4	8
72	Crystalline Al _{1-x} Fe _x phases in the hydrogen cycled NaAlH ₄ +0.02TiCl ₃ system. Philosophical Magazine, 2013, 93, 1080-1094.	1.6	6

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73	Relationship between Al-Ni intermetallic Phases and Bond Strength in Roll Bonded Steel-Aluminum Composites with Nickel Interlayers. <i>Metals</i> , 2019, 9, 827.	2.3	6
74	Graphene-Based Transparent Conducting Substrates for GaN/AlGaIn Nanocolumn Flip-Chip Ultraviolet Light-Emitting Diodes. <i>ACS Applied Nano Materials</i> , 2021, 4, 9653-9664.	5.0	6
75	Alloyed Pt-Zn Oxygen Reduction Catalysts for Proton Exchange Membrane Fuel Cells. <i>ACS Applied Energy Materials</i> , 2022, 5, 8282-8291.	5.1	6
76	Epitaxial (100), (110), and (111) BaTiO ₃ films on SrTiO ₃ substrates—A transmission electron microscopy study. <i>Journal of Applied Physics</i> , 2021, 129, .	2.5	5
77	Grain boundary analysis and secondary phases in LaCoO ₃ -based perovskites. <i>Journal of Materials Science</i> , 2007, 42, 6267-6273.	3.7	4
78	Flame spray pyrolysis of tin oxide-based Pt catalysts for PEM fuel cell applications. <i>MRS Advances</i> , 2017, 2, 1505-1510.	0.9	4
79	Backscatter Electron Imaging and Electron Backscatter Diffraction Characterization of LaCoO ₃ During <i>In Situ</i> Compression. <i>Journal of the American Ceramic Society</i> , 2009, 92, 732-737.	3.8	3
80	Bandgap measurement of high refractive index materials by off-axis EELS. <i>Ultramicroscopy</i> , 2017, 182, 92-98.	1.9	3
81	SiC crystalline micro bullets on bio-carbon based charcoal substrate. <i>Journal of Crystal Growth</i> , 2020, 545, 125740.	1.5	3
82	Transmission electron microscopy characterization of NaAlH ₄ . <i>Journal of Physics: Conference Series</i> , 2008, 126, 012015.	0.4	2
83	Strategy for reliable strain measurement in InAs/GaAs materials from high-resolution Z-contrast STEM images. <i>Journal of Physics: Conference Series</i> , 2017, 902, 012021.	0.4	2
84	Critically testing olivine-hosted putative martian biosignatures in the Yamato 000593 meteorite—Geobiological implications. <i>Geobiology</i> , 2019, 17, 691-707.	2.4	2
85	Investigation of structural, morphological, and optoelectronic properties of Ga-doped TiO ₂ nanoparticles for electron transport layer in solar cell applications: An experimental and theoretical study. <i>Journal of Physics and Chemistry of Solids</i> , 2022, 161, 110410.	4.0	2
86	Compositional and structural properties of pulsed laser-deposited ZnS:Cr films. <i>Applied Physics A: Materials Science and Processing</i> , 2016, 122, 1.	2.3	1
87	Atomap - Automated Analysis of Atomic Resolution STEM Images. <i>Microscopy and Microanalysis</i> , 2017, 23, 426-427.	0.4	1
88	Orientation relationship between β -Si ₃ N ₄ and Si in multicrystalline silicon ingots for PV applications. <i>Journal of Crystal Growth</i> , 2018, 495, 14-19.	1.5	1
89	Alumina Scale Composition and Growth Rate in Distribution Pipes. <i>Minerals, Metals and Materials Series</i> , 2019, , 697-706.	0.4	1
90	Detecting minute amounts of nitrogen in GaNAs thin films using STEM and CBED. <i>Ultramicroscopy</i> , 2021, 231, 113299.	1.9	1

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91	Characterization of ZnO Nanostructures Grown by Pulsed Laser Deposition. Materials Research Society Symposia Proceedings, 2009, 1174, 115.	0.1	0
92	Domain relaxation in La _{0.7} Sr _{0.3} MnO ₃ /SrTiO ₃ thin films due to declamping. Microscopy and Microanalysis, 2012, 18, 1868-1869.	0.4	0
93	Using (S)TEM Techniques to Study Energy Related Materials at the Nanoscale. Microscopy and Microanalysis, 2014, 20, 414-415.	0.4	0
94	Materials Development Aided by Atomic-Resolution Electron Microscopy. Microscopy and Microanalysis, 2015, 21, 1515-1516.	0.4	0
95	Methodology to Improve Strain Measurement in III-V Semiconductors Materials. Microscopy and Microanalysis, 2017, 23, 1416-1417.	0.4	0
96	Multi-scale Modelling of Titanium Diboride Degradation Using Crystal Elasticity Model and Density Functional Theory. Minerals, Metals and Materials Series, 2018, , 1329-1336.	0.4	0