Marcus Andre Worsley

List of Publications by Year
in descending order

139 papers	9,939 citations	50170 46 h-index	34900 98 g-index
147 all docs	147 docs citations	147 times ranked	12938 citing authors

#	Article	IF	Citations
1	Synthesis of Graphene Aerogel with High Electrical Conductivity. Journal of the American Chemical Society, 2010, 132, 14067-14069.	6.6	1,101
2	Highly compressible 3D periodic graphene aerogel microlattices. Nature Communications, 2015, 6, 6962.	5.8	928
3	Supercapacitors Based on Three-Dimensional Hierarchical Graphene Aerogels with Periodic Macropores. Nano Letters, 2016, 16, 3448-3456.	4.5	608
4	Advanced carbon aerogels for energy applications. Energy and Environmental Science, 2011, 4, 656.	15.6	576
5	High Surface Area MoS₂/Graphene Hybrid Aerogel for Ultrasensitive NO₂ Detection. Advanced Functional Materials, 2016, 26, 5158-5165.	7.8	357
6	Efficient 3D Printed Pseudocapacitive Electrodes with Ultrahigh MnO2 Loading. Joule, 2019, 3, 459-470.	11.7	352
7	3D printed functional nanomaterials for electrochemical energy storage. Nano Today, 2017, 15, 107-120.	6.2	302
8	Mechanically robust and electrically conductive carbon nanotube foams. Applied Physics Letters, 2009, 94, .	1.5	245
9	3D-Printing of Meso-structurally Ordered Carbon Fiber/Polymer Composites with Unprecedented Orthotropic Physical Properties. Scientific Reports, 2017, 7, 43401.	1.6	238
10	Mechanically robust 3D graphene macroassembly with high surface area. Chemical Communications, 2012, 48, 8428.	2.2	227
11	Nanoscale Zirconia as a Nonmetallic Catalyst for Graphitization of Carbon and Growth of Single- and Multiwall Carbon Nanotubes. Journal of the American Chemical Society, 2009, 131, 12144-12154.	6.6	219
12	High Surface Area, sp²-Cross-Linked Three-Dimensional Graphene Monoliths. Journal of Physical Chemistry Letters, 2011, 2, 921-925.	2.1	212
13	3Dâ€Printed Structure Boosts the Kinetics and Intrinsic Capacitance of Pseudocapacitive Graphene Aerogels. Advanced Materials, 2020, 32, e1906652.	11.1	191
14	Ultralight Conductive Silver Nanowire Aerogels. Nano Letters, 2017, 17, 7171-7176.	4.5	163
15	Synthesis and Characterization of Highly Crystalline Graphene Aerogels. ACS Nano, 2014, 8, 11013-11022.	7.3	162
16	Ultralow Density, Monolithic WS₂, MoS₂, and MoS₂/Graphene Aerogels. ACS Nano, 2015, 9, 4698-4705.	7.3	159
17	Additive manufacturing of complex micro-architected graphene aerogels. Materials Horizons, 2018, 5, 1035-1041.	6.4	147
18	High surface area carbon aerogel monoliths with hierarchical porosity. Journal of Non-Crystalline Solids, 2008, 354, 3513-3515.	1.5	145

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19	Toward digitally controlled catalyst architectures: Hierarchical nanoporous gold via 3D printing. Science Advances, 2018, 4, eaas9459.	4.7	140
20	Graded bandgap perovskite solar cells. Nature Materials, 2017, 16, 522-525.	13.3	135
21	Macroscopic 3D Nanographene with Dynamically Tunable Bulk Properties. Advanced Materials, 2012, 24, 5083-5087.	11.1	111
22	Synthesis and Characterization of Monolithic Carbon Aerogel Nanocomposites Containing Double-Walled Carbon Nanotubes. Langmuir, 2008, 24, 9763-9766.	1.6	110
23	Printing Porous Carbon Aerogels for Low Temperature Supercapacitors. Nano Letters, 2021, 21, 3731-3737.	4.5	98
24	Periodic Porous 3D Electrodes Mitigate Gas Bubble Traffic during Alkaline Water Electrolysis at High Current Densities. Advanced Energy Materials, 2020, 10, 2002955.	10.2	97
25	Effects of ambient humidity and temperature on the NO2 sensing characteristics of WS2/graphene aerogel. Applied Surface Science, 2018, 450, 372-379.	3.1	96
26	Toward Macroscale, Isotropic Carbons with Grapheneâ€Sheetâ€Like Electrical and Mechanical Properties. Advanced Functional Materials, 2014, 24, 4259-4264.	7.8	95
27	Synthesis of Highly Crystalline sp²-Bonded Boron Nitride Aerogels. ACS Nano, 2013, 7, 8540-8546.	7.3	92
28	Impedance-based study of capacitive porous carbon electrodes with hierarchical and bimodal porosity. Journal of Power Sources, 2013, 241, 266-273.	4.0	82
29	Platinum Nanoparticle Loading of Boron Nitride Aerogel and Its Use as a Novel Material for Lowâ€Power Catalytic Gas Sensing. Advanced Functional Materials, 2016, 26, 433-439.	7.8	82
30	Effect of plasma interactions with low-Îº films as a function of porosity, plasma chemistry, and temperature. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2005, 23, 395.	1.6	80
31	Electrophoretic deposition of binary energetic composites. Combustion and Flame, 2012, 159, 2210-2218.	2.8	78
32	Direct ink writing of organic and carbon aerogels. Materials Horizons, 2018, 5, 1166-1175.	6.4	78
33	Catalytic hydrogen sensing using microheated platinum nanoparticle-loaded graphene aerogel. Sensors and Actuators B: Chemical, 2015, 206, 399-406.	4.0	72
34	Properties of single-walled carbon nanotube-based aerogels as a function of nanotube loading. Acta Materialia, 2009, 57, 5131-5136.	3.8	71
35	Carbon aerogel evolution: Allotrope, graphene-inspired, and 3D-printed aerogels. Journal of Materials Research, 2017, 32, 4166-4185.	1.2	71
36	Three-dimensional carbon architectures for electrochemical capacitors. Journal of Colloid and Interface Science, 2018, 509, 529-545.	5.0	67

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37	3D printing of high performance cyanate ester thermoset polymers. Journal of Materials Chemistry A, 2018, 6, 853-858.	5.2	65
38	Determination of the â€œNiOOHâ€•charge and discharge mechanisms at ideal activity. Journal of Electroanalytical Chemistry, 2014, 717-718, 177-188.	1.9	64
39	Stiff and electrically conductive composites of carbon nanotube aerogels and polymers. Journal of Materials Chemistry, 2009, 19, 3370.	6.7	60
40	3D MoS₂ Aerogel for Ultrasensitive NO₂ Detection and Its Tunable Sensing Behavior. Advanced Materials Interfaces, 2017, 4, 1700217.	1.9	60
41	Battery/supercapacitor hybrid via non-covalent functionalization of graphene macro-assemblies. Journal of Materials Chemistry A, 2014, 2, 17764-17770.	5.2	59
42	Depth-sensing indentation of low-density brittle nanoporous solids. Acta Materialia, 2009, 57, 3472-3480.	3.8	55
43	Synthesis and characterization of a nanocrystalline diamond aerogel. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 8550-8553.	3.3	52
44	Lightâ€Directed Electrophoretic Deposition: A New Additive Manufacturing Technique for Arbitrarily Patterned 3D Composites. Advanced Materials, 2014, 26, 2252-2256.	11.1	51
45	3Dâ€Printed, Superelastic Polypyrroleâ€“Graphene Electrodes with Ultrahigh Areal Capacitance for Electrochemical Energy Storage. Advanced Materials Technologies, 2018, 3, 1800053.	3.0	51
46	Colloidal Materials for 3D Printing. Annual Review of Chemical and Biomolecular Engineering, 2019, 10, 17-42.	3.3	47
47	Characterization of neutral species densities in dual frequency capacitively coupled photoresist ash plasmas by optical emission actinometry. Journal of Applied Physics, 2006, 100, 083301.	1.1	46
48	Enhanced electrochemical performance of ion-beam-treated 3D graphene aerogels for lithium ion batteries. Carbon, 2015, 85, 269-278.	5.4	46
49	Synthesis and characterization of monolithic, high surface area SiO2/C and SiC/C composites. Journal of Materials Chemistry, 2010, 20, 4840.	6.7	44
50	Carbon Scaffolds for Stiff and Highly Conductive Monolithic Oxideâ€“Carbon Nanotube Composites. Chemistry of Materials, 2011, 23, 3054-3061.	3.2	44
51	Nanoscale structure and superhydrophobicity of sp²-bonded boron nitride aerogels. Nanoscale, 2015, 7, 10449-10458.	2.8	41
52	Ion Intercalation Induced Capacitance Improvement for Grapheneâ€Based Supercapacitor Electrodes. ChemNanoMat, 2016, 2, 635-641.	1.5	41
53	Boron Doping and Defect Engineering of Graphene Aerogels for Ultrasensitive NO₂ Detection. Journal of Physical Chemistry C, 2018, 122, 20358-20365.	1.5	41
54	Ultrahigh-Temperature Ceramic Aerogels. Chemistry of Materials, 2019, 31, 3700-3704.	3.2	41

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55	Synthesis of ZnO coated activated carbon aerogel by simple solâ€“gel route. Journal of Materials Chemistry, 2011, 21, 330-333.	6.7	37
56	Conductometric gas sensing behavior of WS2 aerogel. FlatChem, 2017, 5, 1-8.	2.8	36
57	Simultaneous Sheet Cross-Linking and Deoxygenation in the Graphene Oxide Solâ€“Gel Transition. Journal of Physical Chemistry C, 2014, 118, 28855-28860.	1.5	35
58	On the synthesis and structure of resorcinol-formaldehyde polymeric networks â€“ Precursors to 3D-carbon macroassemblies. Polymer, 2015, 69, 45-51.	1.8	35
59	Inertially enhanced mass transport using 3D-printed porous flow-through electrodes with periodic lattice structures. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	35
60	High surface area carbon aerogels as porous substrates for direct growth of carbon nanotubes. Chemical Communications, 2010, 46, 9253.	2.2	33
61	Effect of radical species density and ion bombardment during ashing of extreme ultralow-Îº interlevel dielectric materials. Journal of Applied Physics, 2007, 101, 013305.	1.1	32
62	Exploration of the versatility of ring opening metathesis polymerization: an approach for gaining access to low density polymeric aerogels. RSC Advances, 2012, 2, 8672.	1.7	32
63	Complex shaped boron carbides from negative additive manufacturing. Materials and Design, 2018, 148, 8-16.	3.3	31
64	Towards thermally stable aerogel photocatalysts: TiCl4-based sol-gel routes for the design of nanostructured silica-titania aerogel with high photocatalytic activity and outstanding thermal stability. Journal of Environmental Chemical Engineering, 2019, 7, 103425.	3.3	31
65	Controlling Atomic Layer Deposition of TiO₂ in Aerogels through Surface Functionalization. Chemistry of Materials, 2009, 21, 1989-1992.	3.2	30
66	A new approach to foam-lined indirect-drive NIF ignition targets. Nuclear Fusion, 2012, 52, 062001.	1.6	30
67	Ignition and Combustion Characteristics of Nanoaluminum with Copper Oxide Nanoparticles of Differing Oxidation State. Journal of Physical Chemistry C, 2016, 120, 29023-29029.	1.5	29
68	On-Demand and Location Selective Particle Assembly via Electrophoretic Deposition for Fabricating Structures with Particle-to-Particle Precision. Langmuir, 2015, 31, 3563-3568.	1.6	27
69	Mechanical deformation of carbon-nanotube-based aerogels. Carbon, 2012, 50, 5340-5342.	5.4	26
70	Optimizing supercapacitor electrode density: achieving the energy of organic electrolytes with the power of aqueous electrolytes. RSC Advances, 2014, 4, 42942-42946.	1.7	26
71	Potentialâ€Induced Electronic Structure Changes in Supercapacitor Electrodes Observed by In Operando Soft Xâ€Ray Spectroscopy. Advanced Materials, 2015, 27, 1512-1518.	11.1	25
72	Computational design of microarchitected porous electrodes for redox flow batteries. Journal of Power Sources, 2021, 512, 230453.	4.0	23

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73	Tuning the rheological properties of sols for low-density aerogel coating applications. Soft Matter, 2012, 8, 3518.	1.2	22
74	Surpassing the conventional limitations of CO2 separation membranes with hydroxide/ceramic dual-phase membranes. Journal of Membrane Science, 2018, 567, 191-198.	4.1	22
75	High surface area carbon nanotube-supported titanium carbonitride aerogels. Journal of Materials Chemistry, 2009, 19, 5503.	6.7	21
76	Tunable Amorphous Photonic Materials with Pigmentary Colloidal Nanostructures. Advanced Optical Materials, 2017, 5, 1600838.	3.6	21
77	Detection of open or closed porosity in low-Î° dielectrics by solvent diffusion. Microelectronic Engineering, 2005, 82, 113-118.	1.1	20
78	Solvent-directed sol-gel assembly of 3-dimensional graphene-tented metal oxides and strong synergistic disparities in lithium storage. Journal of Materials Chemistry A, 2016, 4, 4032-4043.	5.2	19
79	Light-ion-irradiation-induced thermal spikes in nanoporous silica. Journal Physics D: Applied Physics, 2011, 44, 085406.	1.3	18
80	Enhanced thermal transport in carbon aerogel nanocomposites containing double-walled carbon nanotubes. Journal of Applied Physics, 2009, 105, 084316.	1.1	17
81	Three-Dimensional Printed MoS₂/Graphene Aerogel Electrodes for Hydrogen Evolution Reactions. ACS Materials Au, 2022, 2, 596-601.	2.6	16
82	Universal roles of hydrogen in electrochemical performance of graphene: high rate capacity and atomistic origins. Scientific Reports, 2015, 5, 16190.	1.6	15
83	PC-12 cells adhesion and differentiation on carbon aerogel scaffolds. MRS Communications, 2018, 8, 1426-1432.	0.8	15
84	Shape control synthesis of fluorapatite structures based on supersaturation: prismatic nanowires, ellipsoids, star, and aggregate formation. CrystEngComm, 2012, 14, 6384.	1.3	14
85	Topology optimization for the design of porous electrodes. Structural and Multidisciplinary Optimization, 2022, 65, .	1.7	14
86	Route to high surface area TiO2/C and TiCN/C composites. Journal of Materials Chemistry, 2009, 19, 7146.	6.7	13
87	Chlorine-free, monolithic lanthanide series rare earth oxide aerogels via epoxide-assisted sol-gel method. Journal of Sol-Gel Science and Technology, 2019, 89, 176-188.	1.1	13
88	ROMP crosslinkers for the preparation of aliphatic aerogels. Journal of Non-Crystalline Solids, 2015, 408, 98-101.	1.5	12
89	Ice templating synthesis of low-density porous Cuâ€“C nanocomposites. Journal of Materials Chemistry A, 2014, 2, 18600-18605.	5.2	11
90	Influence of sodium dodecylbenzene sulfonate on the structure and properties of carbon aerogels. Journal of Non-Crystalline Solids, 2010, 356, 172-174.	1.5	10

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91	Liquidâ€“solid phase transition of hydrogen and deuterium in silica aerogel. Journal of Applied Physics, 2014, 116, 163517.	1.1	10
92	Nanoporous Cuâ€“C composites based on carbon-nanotube aerogels. Journal of Materials Chemistry A, 2014, 2, 962-967.	5.2	10
93	Carbon aerogels with integrated engineered macroporous architectures for improved mass transport. Carbon, 2021, 179, 125-132.	5.4	10
94	Synthesis of Nanostructured/Macroscopic Low-Density Copper Foams Based on Metal-Coated Polymer Coreâ€“Shell Particles. ACS Applied Materials & Interfaces, 2016, 8, 34706-34714.	4.0	9
95	Prussian blue as a co-catalyst for enhanced Cr(vi) photocatalytic reduction promoted by titania-based nanoparticles and aerogels. New Journal of Chemistry, 0, , .	1.4	9
96	Plasma ash processing solutions for advanced interconnect technology. Thin Solid Films, 2008, 516, 3558-3563.	0.8	8
97	Ion-beam-induced stiffening of nanoporous silica. Journal Physics D: Applied Physics, 2009, 42, 182003.	1.3	8
98	Thick, Binder-Free Carbon-Nanotube-Based Electrodes for High Power Applications. ECS Journal of Solid State Science and Technology, 2013, 2, M3140-M3144.	0.9	8
99	Self-assembly and metal-directed assembly of organic semiconductor aerogels and conductive carbon nanofiber aerogels with controllable nanoscale morphologies. Carbon, 2019, 153, 648-656.	5.4	8
100	Enhanced neurite outgrowth on electrically conductive carbon aerogel substrates in the presence of an external electric field. Soft Matter, 2021, 17, 4489-4495.	1.2	8
101	Tailoring properties of carbon-nanotube-based foams by ion bombardment. Applied Physics Letters, 2012, 101, .	1.5	7
102	The effects of highly structured low density carbon nanotube networks on the thermal degradation behaviour of polysiloxanes. Polymer Degradation and Stability, 2014, 102, 25-32.	2.7	7
103	Freezing and melting of hydrogen confined in nanoporous silica. Journal of Physics Condensed Matter, 2014, 26, 225004.	0.7	7
104	Structureâ€“property relationship of new polyimideâ€“organically modified silicateâ€“phosphotungstic acid hybrid material system. Journal of Materials Science, 2016, 51, 4815-4824.	1.7	7
105	Correlating dynamic microstructure to observed color in electrophoretic displays via in situ small-angle x-ray scattering. Physical Review Materials, 2020, 4, .	0.9	6
106	Coating functional solâ€“gel films inside horizontally-rotating cylinders by rimming flow/state. Journal of Sol-Gel Science and Technology, 2013, 65, 170-177.	1.1	5
107	Relaxation calorimeter for hydrogen thermoporometry. Review of Scientific Instruments, 2013, 84, 053901.	0.6	5
108	Heavy-ion-induced modification of structural and mechanical properties of carbon-nanotube aerogels. Carbon, 2013, 57, 310-316.	5.4	5

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109	Robust nanoporous alumina monoliths by atomic layer deposition on low-density carbon-nanotube scaffolds. Carbon, 2014, 73, 443-447.	5.4	5
110	The Study of Modified Layers in SiCOH Dielectrics using Spectroscopic Ellipsometry. Materials Research Society Symposia Proceedings, 2003, 766, 3291.	0.1	4
111	Hydrogen Crystallization in Low-Density Aerogels. Langmuir, 2015, 31, 3854-3860.	1.6	4
112	Compressible Electrodes: 3Dâ€Printed, Superelastic Polypyrroleâ€“Graphene Electrodes with Ultrahigh Areal Capacitance for Electrochemical Energy Storage (Adv. Mater. Technol. 7/2018). Advanced Materials Technologies, 2018, 3, 1870026.	3.0	4
113	Noninvasive Detection, Tracking, and Characterization of Aerogel Implants Using Diagnostic Ultrasound. Polymers, 2022, 14, 722.	2.0	4
114	Synthesis and Functionalization of 3D Nano-graphene Materials: Graphene Aerogels and Graphene Macro Assemblies. Journal of Visualized Experiments, 2015, , e53235.	0.2	3
115	Gas Sensors: Platinum Nanoparticle Loading of Boron Nitride Aerogel and Its Use as a Novel Material for Lowâ€Power Catalytic Gas Sensing (Adv. Funct. Mater. 3/2016). Advanced Functional Materials, 2016, 26, 314-314.	7.8	3
116	Negative Additive Manufacturing of Complex Shaped Boron Carbides. Journal of Visualized Experiments, 2018, , .	0.2	3
117	One-Step Conversion of Graphite to Crinkled Boron Nitride Nanofoams for Hydrophobic Liquid Absorption. ACS Applied Nano Materials, 2021, 4, 3500-3507.	2.4	3
118	Modeling flow-based electrophoretic deposition for functionally graded materials. Materials and Design, 2021, 209, 110000.	3.3	3
119	Carbon Aerogels. , 2018, , 3339-3374.		3
120	3D Printed Carbon Aerogels for Polymer-Electrolyte Fuel Cells. ECS Transactions, 2022, 108, 153-163.	0.3	3
121	Density Tunable Graphene Aerogels Using a Sacrificial Polycyclic Aromatic Hydrocarbon. Physica Status Solidi (B): Basic Research, 2017, 254, 1700203.	0.7	2
122	Quantitative Analysis of Color Differences within High Contrast, Low Power Reversible Electrophoretic Displays. ECS Transactions, 2018, 82, 59-66.	0.3	2
123	Water Splitting: Periodic Porous 3D Electrodes Mitigate Gas Bubble Traffic during Alkaline Water Electrolysis at High Current Densities (Adv. Energy Mater. 46/2020). Advanced Energy Materials, 2020, 10, 2070189.	10.2	2
124	Carbon Aerogels. , 2016, , 1-36.		2
125	A 3D nm-thin biomimetic membrane for ultimate molecular separation. Materials Horizons, 2020, 7, 2422-2430.	6.4	1
126	A new chemresistive NO2 sensing material: Hafnium diboride. Ceramics International, 2022, 48, 6835-6841.	2.3	1

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127	Synthesis and Characterization of Nanocarbon-Supported Titanium Dioxide. Materials Research Society Symposia Proceedings, 2009, 1174, 31.	0.1	0
128	Electrically conductive composites via infiltration of single-walled carbon nanotube-based aerogels. Materials Research Society Symposia Proceedings, 2010, 1258, 1.	0.1	0
129	Carbon Nanotube-Based Aerogels as Preformed Porous Fibrous Network for Reinforcing Lightweight Composites. , 2017, , 245-266.		0
130	Hierarchical Nanoporous Gold with Engineered Architectures Via Dealloying of 3D Printed Alloys. ECS Meeting Abstracts, 2018, , .	0.0	0
131	Optimally Engineered Flow-Through Electrodes Using Automatic Design Algorithms and Additive Manufacturing. ECS Meeting Abstracts, 2018, , .	0.0	0
132	Optimally Engineered Flow-through Electrodes Using Automatic Design Algorithms and Additive Manufacturing. ECS Meeting Abstracts, 2019, , .	0.0	0
133	Efficient 3D Printed Pseudocapacitive Electrodes with Ultrahigh MnO2 Loading. ECS Meeting Abstracts, 2019, , .	0.0	0
134	(Invited) Optimizing 2D Material-Based Electrodes for Electrochemical Energy and Conversion Devices. ECS Meeting Abstracts, 2020, MA2020-01, 827-827.	0.0	0
135	Elucidating the Mass Transport Properties of Additively Manufactured Electrodes Using Spatially Resolved Simulation. ECS Meeting Abstracts, 2020, MA2020-02, 2141-2141.	0.0	0
136	Improving Flow-through Electrode Performance Using Computational Design of Architected Porosity. ECS Meeting Abstracts, 2020, MA2020-02, 1541-1541.	0.0	0
137	(Invited) 3D Printing of 2D Materials for Optimized Electrochemical Performance. ECS Meeting Abstracts, 2022, MA2022-01, 2460-2460.	0.0	0
138	3D Printed Carbon Aerogels for Polymer-Electrolyte Fuel Cells. ECS Meeting Abstracts, 2022, MA2022-01, 1535-1535.	0.0	0
139	Maximizing Energy Efficiency of Porous Electrodes Via Topology Optimization. ECS Meeting Abstracts, 2022, MA2022-01, 1969-1969.	0.0	0