John V Badding

List of Publications by Year
in descending order

132 papers	5,562 citations	101543 36 h-index	82547 72 g-index
139 all docs	139 docs citations	139 times ranked	5270 citing authors

#	Article	IF	Citations
1	Transport coefficients from first-principles calculations. Physical Review B, 2003, 68, .	3.2	663
2	Microstructured Optical Fibers as High-Pressure Microfluidic Reactors. Science, 2006, 311, 1583-1586.	12.6	442
3	Infrared fibers. Advances in Optics and Photonics, 2015, 7, 379.	25.5	274
4	Benzene-derived carbon nanothreads. Nature Materials, 2015, 14, 43-47.	27.5	250
5	High-Pressure Chemistry of Hydrogen in Metals: In Situ Study of Iron Hydride. Science, 1991, 253, 421-424.	12.6	200
6	Large Improvement in Thermoelectric Properties in Pressure-Tuned p-Type Sb1.5Bi0.5Te3. Chemistry of Materials, 2001, 13, 2068-2071.	6.7	189
7	Thermoelectric properties ofSb2Te3under pressure and uniaxial stress. Physical Review B, 2003, 68, .	3.2	175
8	HIGH-PRESSURE SYNTHESIS, CHARACTERIZATION, AND TUNING OF SOLID STATE MATERIALS. Annual Review of Materials Research, 1998, 28, 631-658.	5.5	164
9	Thermal and Electrical Conductivity of Sizeâ€Tuned Bismuth Telluride Nanoparticles. Small, 2009, 5, 933-937.	10.0	132
10	Transition Element-Like Chemistry for Potassium Under Pressure. Science, 1996, 273, 95-97.	12.6	119
11	Poly(phenylcarbyne): A Polymer Precursor to Diamond-Like Carbon. Science, 1993, 260, 1496-1499.	12.6	117
12	Zinc Selenide Optical Fibers. Advanced Materials, 2011, 23, 1647-1651.	21.0	108
13	Integration of gigahertz-bandwidth semiconductor devices inside microstructured optical fibres. Nature Photonics, 2012, 6, 174-179.	31.4	107
14	Extreme electronic bandgap modification in laser-crystallized silicon optical fibres. Nature Materials, 2014, 13, 1122-1127.	27.5	94
15	Mechanochemical Synthesis of Carbon Nanothread Single Crystals. Journal of the American Chemical Society, 2017, 139, 16343-16349.	13.7	88
16	Linearly Polymerized Benzene Arrays As Intermediates, Tracing Pathways to Carbon Nanothreads. Journal of the American Chemical Society, 2015, 137, 14373-14386.	13.7	86
17	Deposition and characterization of germanium sulphide glass planar waveguides. Optics Express, 2004, 12, 2501.	3.4	84
18	High-Pressure Synthesis of sp2-Bonded Carbon Nitrides. Chemistry of Materials, 1996, 8, 1535-1539.	6.7	83

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19	Carbon Nitride Nanothread Crystals Derived from Pyridine. Journal of the American Chemical Society, 2018, 140, 4969-4972.	13.7	81
20	Silicon pâ€iâ€n Junction Fibers. Advanced Materials, 2013, 25, 1461-1467.	21.0	76
21	Low loss silicon fibers for photonics applications. Applied Physics Letters, 2010, 96, 041105.	3.3	75
22	Thermodynamic Analysis of the Formation of Carbon Nitrides under Pressure. Chemistry of Materials, 1996, 8, 535-540.	6.7	74
23	Solid-state Carbon Nitrides. Advanced Materials, 1997, 9, 877-886.	21.0	65
24	The Chemical Structure of Carbon Nanothreads Analyzed by Advanced Solid-State NMR. Journal of the American Chemical Society, 2018, 140, 7658-7666.	13.7	59
25	Confined High-Pressure Chemical Deposition of Hydrogenated Amorphous Silicon. Journal of the American Chemical Society, 2012, 134, 19-22.	13.7	56
26	Polytetrafluoroethylene nano/microfibers by jet blowing. Polymer, 2006, 47, 8337-8343.	3.8	50
27	All-optical modulation of laser light in amorphous silicon-filled microstructured optical fibers. Applied Physics Letters, 2007, 91, .	3.3	50
28	Superhydrophobic effect on the adsorption of human serum albumin. Acta Biomaterialia, 2009, 5, 1389-1398.	8.3	49
29	Electrical and Raman characterization of silicon and germanium-filled microstructured optical fibers. Applied Physics Letters, 2007, 90, 132110.	3.3	46
30	Improved thermoelectric properties due to electronic topological transition under high pressure. Physica B: Condensed Matter, 2005, 358, 14-18.	2.7	45
31	Imprinting of Local Metallic States into VO₂ with Ultraviolet Light. Advanced Functional Materials, 2016, 26, 6612-6618.	14.9	43
32	Single-Crystal Silicon Optical Fiber by Direct Laser Crystallization. ACS Photonics, 2017, 4, 85-92.	6.6	43
33	Controlled Assembly of Zero-, One-, Two-, and Three-Dimensional Metal Chalcogenide Structures. Inorganic Chemistry, 2007, 46, 7238-7240.	4.0	40
34	Mid-infrared transmission properties of amorphous germanium optical fibers. Applied Physics Letters, 2010, 97, .	3.3	40
35	Singleâ€Crystal Semiconductor Wires Integrated into Microstructured Optical Fibers. Advanced Materials, 2008, 20, 1135-1140.	21.0	39
36	Tl2AXTe4 (A = Cd, Hg, Mn; X = Ge, Sn):â€‰ Crystal Structure, Electronic Structure, and Thermoelectric Properties. Chemistry of Materials, 2005, 17, 6186-6191.	6.7	37

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37	Cell Adhesion on Nanofibrous Polytetrafluoroethylene (nPTFE). Langmuir, 2007, 23, 747-754.	3.5	37
38	Synthesis and structural-magnetic study of a new type of high-nuclearity metal carbonyl cluster possessing an eleven-atom Rh5Ni6 core: formation of a heterometallic core via nickel capping of a pentarhodium trigonal-bipyramidal kernel. Journal of the American Chemical Society, 1986, 108, 3825-3827.	13.7	36
39	Evidence for Orientational Order in Nanothreads Derived from Thiophene. Journal of Physical Chemistry Letters, 2019, 10, 7164-7171.	4.6	36
40	Singleâ€Crystal Germanium Core Optoelectronic Fibers. Advanced Optical Materials, 2017, 5, 1600592.	7.3	35
41	Crystalline Silicon Optical Fibers with Low Optical Loss. ACS Photonics, 2016, 3, 378-384.	6.6	34
42	Templated Chemically Deposited Semiconductor Optical Fiber Materials. Annual Review of Materials Research, 2013, 43, 527-557.	9.3	33
43	UV Raman Analysis of the C:H Network Formed by Compression of Benzene. Chemistry of Materials, 2003, 15, 1820-1824.	6.7	32
44	Thermoelectric power and phase transition of polycrystalline As2Te3 under pressure. Journal of Physics and Chemistry of Solids, 2005, 66, 1744-1747.	4.0	32
45	Nanoarchitecture through Strained Molecules: Cubane-Derived Scaffolds and the Smallest Carbon Nanothreads. Journal of the American Chemical Society, 2020, 142, 17944-17955.	13.7	32
46	Scalable Synthesis of Crystalline One-Dimensional Carbon Nanothreads through Modest-Pressure Polymerization of Furan. ACS Nano, 2021, 15, 4134-4143.	14.6	32
47	Improvement in the thermoelectric properties of pressure-tuned Î²-K2Bi8Se13. Journal of Applied Physics, 2003, 94, 4485-4488.	2.5	30
48	High-temperature superconductivity in yttrium-barium-copper oxide: identification of a copper-rich superconducting phase. Journal of the American Chemical Society, 1987, 109, 2528-2530.	13.7	29
49	Chalcogenide Glass Thin Films and Planar Waveguides. Journal of the American Ceramic Society, 2005, 88, 2451-2455.	3.8	28
50	Highâ€Pressure Chemical Deposition for Voidâ€Free Filling of Extreme Aspect Ratio Templates. Advanced Materials, 2010, 22, 4605-4611.	21.0	26
51	Local Structure and Bonding of Carbon Nanothreads Probed by High-Resolution Transmission Electron Microscopy. Journal of the American Chemical Society, 2019, 141, 6937-6945.	13.7	26
52	Constraining Carbon Nanothread Structures by Experimental and Calculated Nuclear Magnetic Resonance Spectra. Nano Letters, 2018, 18, 4934-4942.	9.1	24
53	UV Raman Spectroscopy of Single-Walled Carbon Nanotubes. Chemistry of Materials, 2001, 13, 4187-4191.	6.7	23
54	Cobalt oxide layers. Nature Materials, 2003, 2, 208-210.	27.5	22

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55	Polycrystalline silicon optical fibers with atomically smooth surfaces. Optics Letters, 2011, 36, 2480.	3.3	22
56	Exploring the Effect of the Core Boundary Curvature in Hollow Antiresonant Fibers. IEEE Photonics Technology Letters, 2017, 29, 263-266.	2.5	22
57	â€˜Sacrificialâ€™ supramolecular assembly and pressure-induced polymerization: toward sequence-defined functionalized nanothreads. Chemical Science, 2020, 11, 11419-11424.	7.4	22
58	A high resolution laboratoryâ€based high pressure xâ€ray diffraction system. Review of Scientific Instruments, 1995, 66, 4496-4500.	1.3	21
59	High-Pressure Stability, Pressureâ€“Volume Equation of State, and Crystal Structure under Pressure of the Thermoelectric Material IrSb3. Chemistry of Materials, 2000, 12, 697-700.	6.7	21
60	Electronic structure of Î²-As2Te3. Solid State Communications, 2003, 127, 667-670.	1.9	21
61	Conformal Coating by High Pressure Chemical Deposition for Patterned Microwires of IIâ€“VI Semiconductors. Advanced Functional Materials, 2013, 23, 1647-1654.	14.9	21
62	Confined Chemical Fluid Deposition of Ferromagnetic Metalattices. Nano Letters, 2018, 18, 546-552.	9.1	21
63	Electronic structure and thermoelectric power of cerium compounds at high pressure. Journal of Alloys and Compounds, 2005, 388, 215-220.	5.5	20
64	Single-Fluxon Controlled Resistance Switching in Centimeter-Long Superconducting Galliumâ€“Indium Eutectic Nanowires. Nano Letters, 2015, 15, 153-158.	9.1	20
65	Ultra-smooth microcylindrical resonators fabricated from the silicon optical fiber platform. Applied Physics Letters, 2011, 99, 031117.	3.3	19
66	Chromium doped zinc selenide optical fiber lasers. Optical Materials Express, 2020, 10, 1843.	3.0	18
67	Magnetic phase transitions inEuNi5P3: Unusual steps in the magnetization with field. Physical Review B, 1987, 35, 8880-8883.	3.2	16
68	Synthesis and crystal structure of a new europium nickel phosphide phase, EuNi5P3. Journal of Solid State Chemistry, 1987, 67, 354-358.	2.9	16
69	FLAPW investigation of the stability and equation of state of rectangulated carbon. Solid State Communications, 2002, 122, 473-477.	1.9	16
70	Pressure-Induced Polymerization of LiN(CN)₂. Journal of Physical Chemistry A, 2016, 120, 9370-9377.	2.5	15
71	Chemistry through cocrystals: pressure-induced polymerization of C₂H₂Â·C₆H₆to an extended crystalline hydrocarbon. Physical Chemistry Chemical Physics, 2018, 20, 7282-7294.	2.8	15
72	Synthesis and crystal structure of a new alkaline earth nickel phosphide phase: BaNi9P5. Journal of Solid State Chemistry, 1990, 87, 10-14.	2.9	14

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73	Organosilane Self-Assembled Monolayer Growth from Supercritical Carbon Dioxide in Microstructured Optical Fiber Capillary Arrays. Langmuir, 2008, 24, 3636-3644.	3.5	14
74	Tetracyanomethane under Pressure: Extended CN Polymers from Precursors with Built-in sp³ Centers. Journal of Physical Chemistry A, 2018, 122, 2858-2863.	2.5	14
75	All the Ways To Have Substituted Nanothreads. Journal of Chemical Theory and Computation, 2018, 14, 1131-1140.	5.3	14
76	Achieving Minimal Heat Conductivity by Ballistic Confinement in Phononic Metalattices. ACS Nano, 2020, 14, 4235-4243.	14.6	14
77	Continuous wave Fe²⁺:ZnSe mid-IR optical fiber lasers. Optics Express, 2020, 28, 30263.	3.4	14
78	Selective Semiconductor Filling of Microstructured Optical Fibers. Journal of Lightwave Technology, 2011, 29, 2005-2008.	4.6	13
79	UV Raman studies on carbon nitride structures. Journal of Materials Science, 2006, 41, 7145-7149.	3.7	12
80	Surprising Stability of Cubane under Extreme Pressure. Journal of Physical Chemistry Letters, 2018, 9, 2031-2037.	4.6	12
81	Optical multistability in a silicon-core silica-cladding fiber. Optics Express, 2010, 18, 5305.	3.4	11
82	High Pressure Chemical Vapor Deposition of Hydrogenated Amorphous Silicon Films and Solar Cells. Advanced Materials, 2016, 28, 5939-5942.	21.0	11
83	High-Pressure Reactivity of Triptycene Probed by Raman Spectroscopy. Journal of Physical Chemistry B, 2016, 120, 11035-11042.	2.6	11
84	Conformal coating of amorphous silicon and germanium by high pressure chemical vapor deposition for photovoltaic fabrics. APL Materials, 2018, 6, 046105.	5.1	11
85	Perfect and Defective ¹³C-Furan-Derived Nanothreads from Modest-Pressure Synthesis Analyzed by ¹³C NMR. Journal of the American Chemical Society, 2021, 143, 9529-9542.	13.7	11
86	Nondestructive Measurements of the Mechanical and Structural Properties of Nanostructured Metalattices. Nano Letters, 2020, 20, 3306-3312.	9.1	10
87	Thermal nonlinearity in silicon microcylindrical resonators. Applied Physics Letters, 2012, 100, 181101.	3.3	9
88	A magnifying fiber element with an array of sub-wavelength Ge/ZnSe pixel waveguides for infrared imaging. Applied Physics Letters, 2012, 101, .	3.3	9
89	From Linear Molecular Chains to Extended Polycyclic Networks: Polymerization of Dicyanoacetylene. Chemistry of Materials, 2017, 29, 6706-6718.	6.7	9
90	Rietveld analysis using a laboratory-based high pressure x-ray diffraction system and film-based detection. Review of Scientific Instruments, 1997, 68, 2298-2300.	1.3	8

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91	Reversible high pressure sp2â€“sp3transformations in carbon. Phase Transitions, 2007, 80, 1033-1038.	1.3	8
92	Post-processing ZnSe optical fibers with a micro-chemical vapor transport technique. Optical Materials Express, 2020, 10, 3125.	3.0	8
93	Mid-infrared spectroscopic imaging enabled by an array of Ge-filled waveguides in a microstructured optical fiber probe. Optics Express, 2014, 22, 28459.	3.4	7
94	Tuning Triplet-Pair Separation versus Relaxation Using a Diamond Anvil Cell. Cell Reports Physical Science, 2020, 1, 100005.	5.6	7
95	Foam formation from fluorinated polyphosphazenes by liquid CO2 processing. Polymer Engineering and Science, 2008, 48, 683-686.	3.1	6
96	Role of Carbon Order in Structural Transformations and Hydrogen Evolution Induced by Reactive Ball Milling in Cyclohexene. Journal of Physical Chemistry C, 2008, 112, 17427-17435.	3.1	6
97	Spontaneous Waveguide Raman Spectroscopy of Self-Assembled Monolayers in Silica Micropores. Langmuir, 2011, 27, 630-636.	3.5	6
98	Monochromated Low-Dose Aberration-Corrected Transmission Electron Microscopy of Diamondoid Carbon Nanothreads. Microscopy and Microanalysis, 2016, 22, 1840-1841.	0.4	6
99	Oxide-Free Three-Dimensional Germanium/Silicon Coreâ€“Shell Metalattice Made by High-Pressure Confined Chemical Vapor Deposition. ACS Nano, 2020, 14, 12810-12818.	14.6	6
100	Kinetics of Silane Decomposition in High-Pressure Confined Chemical Vapor Deposition of Hydrogenated Amorphous Silicon. Industrial & Engineering Chemistry Research, 2017, 56, 14995-15000.	3.7	5
101	Aluminosilicate glasses for zinc selenide tunable fiber laser cladding. Journal of the American Ceramic Society, 2021, 104, 691-696.	3.8	5
102	Mechanistic insights into the pressure-induced polymerization of aryl/perfluoroaryl co-crystals. Polymer Chemistry, 2022, 13, 1359-1368.	3.9	5
103	Low Dose Characterization of Diamondoid Carbon Nanothreads by Transmission Electron Microscopy. Microscopy and Microanalysis, 2017, 23, 1846-1847.	0.4	4
104	Low-dose Transmission Electron Microscopy of Highly-Oriented Polyacetylene. Microscopy and Microanalysis, 2018, 24, 2030-2031.	0.4	4
105	Synchrotron X-ray metrology of dopant distribution and oxidation state in high pressure CVD grown TM2+:ZnSe optical fibers. Optical Materials Express, 2021, 11, 289.	3.0	4
106	The high-pressure chemistry of potassiumâ€“copper mixtures. Solid State Communications, 2004, 131, 157-161.	1.9	3
107	Siliconp-i-nJunction Fibers (Adv. Mater. 10/2013). Advanced Materials, 2013, 25, 1460-1460.	21.0	3
108	Low-dose Microscopy and Beam Damage Study of Infiltrated Zeolite Y. Microscopy and Microanalysis, 2016, 22, 1638-1639.	0.4	3

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109	Small core SiGe alloy optical fibers by templated deposition. , 2017, , .		3
110	Quantum transport in three-dimensional metalattices of platinum featuring an unprecedentedly large surface area to volume ratio. Physical Review Materials, 2020, 4, .	2.4	3
111	Cr2+:ZnSe Fiber Lasers. , 2016, , .		3
112	High pressure CVD inside microstructured optical fibres. , 2006, , .		2
113	Integration of Optical Fiber and Optoelectronic Devices. , 2013, , .		2
114	Hydrogenated Amorphous Germanium Optical Fiber. , 2015, , .		2
115	Generation of Microwave Capillary Argon Plasmas at Atmospheric Pressure. IEEE Transactions on Plasma Science, 2016, 44, 2603-2607.	1.3	2
116	Diamond encapsulated silicon optical fibers synthesized by chemical vapor deposition. AIP Advances, 2020, 10, 095009.	1.3	2
117	Synthesizing carbon nanothreads from benzene. SPIE Newsroom, 0, , .	0.1	2
118	Thermoelectric power and resistivity studies of graphitic nanotubules under high pressure. Materials Letters, 2005, 59, 3973-3975.	2.6	1
119	Templated growth of II-VI semiconductor optical fiber devices and steps towards infrared fiber lasers. Proceedings of SPIE, 2015, , .	0.8	1
120	Hollow core silicon-silica Bragg fiber. , 2015, , .		1
121	Flexible Electronics: High Pressure Chemical Vapor Deposition of Hydrogenated Amorphous Silicon Films and Solar Cells (Adv. Mater. 28/2016). Advanced Materials, 2016, 28, 5938-5938.	21.0	1
122	In-situ TEM Study on Size-dependent Thermal Stability of Nickel Filled Silica Nano-Opals. Microscopy and Microanalysis, 2017, 23, 956-957.	0.4	1
123	Electronic and Structural Characterization of Diamondoid Carbon Nanothreads by Transmission Electron Microscopy. Microscopy and Microanalysis, 2018, 24, 1992-1993.	0.4	1
124	Investigation of Surface Plasmon Resonances in Silver Infiltrated Metalattices by Monochromated Electron Energy Loss Spectroscopy. Microscopy and Microanalysis, 2018, 24, 432-433.	0.4	1
125	Czochralski growth of single crystals of EuNi5P3 in an arc furnace. Journal of Crystal Growth, 1997, 181, 363-366.	1.5	0
126	Characterization of Thermal Induced Nonlinear Effects in Silicon Microcylindrical Resonators. , 2012, , .		0

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127	A silicon microwire under a three-dimensional anisotropic tensile stress. Applied Physics Letters, 2017, 110, 091911.	3.3	0
128	Optoelectronic Fibers: Singleâ€Crystal Germanium Core Optoelectronic Fibers (Advanced Optical) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	7.3	0
129	Plasmonic Metalattices: A Correlated Monochromated Electron Energy Loss Study and Theoretical Calculations. Microscopy and Microanalysis, 2019, 25, 678-679.	0.4	0
130	Electronic and Plasmonic Materials Inside Microstructured Optical Fibers. , 2007, , .		0
131	HPCVD of ZnSxSe1â€“x Claddings for ZnSe Optical Fibers. , 2021, , .		0
132	Direct observation of topological magnetic monopoles using soft x-ray vector ptychography at 10 nm resolution. , 2022, , .		0