Bruce J Tatarchuk

List of Publications by Year
in descending order

118	2,964	136950	197818
papers	citations	32 h-index	49 g-index

121	121	121	2607
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Review of Experimental Characterization of Active Sites and Determination of Molecular Mechanisms of Adsorption, Desorption and Regeneration of the Deep and Ultradeep Desulfurization Sorbents for Liquid Fuels. Catalysis Reviews - Science and Engineering, 2010, 52, 381-410.	12.9	116
2	Characterization of active sites, determination of mechanisms of H2S, COS and CS2 sorption and regeneration of ZnO low-temperature sorbents: past, current and perspectives. Physical Chemistry Chemical Physics, 2011, 13, 3197.	2.8	106
3	Adsorptive desulfurization of jet and diesel fuels using Ag/TiO x â€“Al 2 O 3 and Ag/TiO x â€“SiO 2 adsorbents. Fuel, 2013, 107, 465-473.	6.4	100
4	Activated chemisorption of hydrogen on supported ruthenium I. Influence of adsorbed chlorine on accurate surface area measurements. Journal of Catalysis, 1987, 106, 166-175.	6.2	97
5	Novel catalyst structures with enhanced heat transfer characteristics. Journal of Catalysis, 2011, 281, 254-262.	6.2	94
6	Pillared-clay catalysts containing mixed-metal complexes I. Preparation and characterization. Journal of Catalysis, 1989, 115, 159-179.	6.2	91
7	Energy efficiency and capacity retention of Niâ€“MH batteries for storage applications. Applied Energy, 2013, 106, 307-313.	10.1	91
8	Copper-Promoted ZnO/SiO₂ Regenerable Sorbents for the Room Temperature Removal of H₂S from Reformate Gas Streams. Industrial & Engineering Chemistry Research, 2010, 49, 8388-8396.	3.7	76
9	Physical characterization of Fe/TiO2 model supported catalysts I. Electron microscopic studies of reduction behavior. Journal of Catalysis, 1981, 70, 308-322.	6.2	69
10	Regenerable Feâ€“Mnâ€“ZnO/SiO₂sorbents for room temperature removal of H₂S from fuel reformates: performance, active sites, Operando studies. Physical Chemistry Chemical Physics, 2011, 13, 2179-2187.	2.8	67
11	Wet layup and sintering of metal-containing microfibrous composites for chemical processing opportunities. Composites Part A: Applied Science and Manufacturing, 2001, 32, 1117-1126.	7.6	64
12	Microfibrous entrapment of small catalyst or sorbent particulates for high contacting-efficiency removal of trace contaminants including CO and H2S from practical reformates for PEM H2â€“O2 fuel cells. Chemical Engineering Journal, 2006, 115, 195-202.	12.7	61
13	Permeability of sintered microfibrous composites for heterogeneous catalysis and other chemical processing opportunities. Catalysis Today, 2001, 69, 33-39.	4.4	59
14	Uniformity analysis at MEA and stack Levels for a Nexa PEM fuel cell system. Journal of Power Sources, 2004, 128, 231-238.	7.8	58
15	Supported silver adsorbents for selective removal of sulfur species from hydrocarbon fuels. Fuel, 2010, 89, 3218-3225.	6.4	58
16	Activated chemisorption of hydrogen on supported ruthenium II. Effects of crystallite size and adsorbed chlorine on accurate surface area measurements. Journal of Catalysis, 1987, 106, 176-187.	6.2	55
17	A quantitative XPS examination of UV induced surface modification of TiO2 sorbents for the increased saturation capacity of sulfur heterocycles. Fuel, 2019, 238, 454-461.	6.4	54
18	Self-discharge characteristics and performance degradation of Ni-MH batteries for storage applications. International Journal of Hydrogen Energy, 2014, 39, 19789-19798.	7.1	51

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19	Mechanism of hydrocarbon fuel desulfurization using Ag/TiO2â€“Al2O3 adsorbent. Fuel Processing Technology, 2014, 126, 233-242.	7.2	50
20	PEM stack test and analysis in a power system at operational load via ac impedance. Journal of Power Sources, 2007, 168, 211-217.	7.8	49
21	Breakthrough Characteristics of Reformate Desulfurization Using ZnO Sorbents for Logistic Fuel Cell Power Systems. Industrial & Engineering Chemistry Research, 2008, 47, 10064-10070.	3.7	49
22	A simplified equivalent circuit model for simulation of Pbâ€“acid batteries at load for energy storage application. Energy Conversion and Management, 2011, 52, 2794-2799.	9.2	49
23	XPS and FTIR investigations of the transient photocatalytic decomposition of surface carbon contaminants from anatase TiO2 in UHV starved water/oxygen environments. Applied Surface Science, 2021, 570, 151147.	6.1	49
24	A study of kinetic effects due to using microfibrous entrapped zinc oxide sorbents for hydrogen sulfide removal. Chemical Engineering Science, 2008, 63, 2707-2716.	3.8	45
25	Novelâ€doped zinc oxide sorbents for low temperature regenerable desulfurization applications. AICHE Journal, 2010, 56, 2898-2904.	3.6	45
26	High conductivity catalyst structures for applications in exothermic reactions. Applied Catalysis A: General, 2012, 445-446, 143-152.	4.3	42
27	Comparative heterogeneous contacting efficiency in fixed bed reactors: Opportunities for new microstructured systems. Applied Catalysis B: Environmental, 2009, 90, 507-515.	20.2	40
28	Surface characterization of Ag/Titania adsorbents. Applied Surface Science, 2010, 256, 3647-3652.	6.1	38
29	The role of surface acidity in adsorption of aromatic sulfur heterocycles from fuels. Fuel, 2013, 105, 695-704.	6.4	36
30	Spectroscopic Analysis of Southern Pine Treated with Chromater Copper Arsenate. I. X-Ray Photoelectron Spectroscopy (XPS)-17. Journal of Wood Chemistry and Technology, 1988, 8, 413-439.	1.7	35
31	Photo-assisted adsorptive desulfurization of hydrocarbon fuels over TiO2 and Ag/TiO2. Fuel, 2016, 183, 550-556.	6.4	34
32	Metalâ€Carbon Composite Materials from Fiber Precursors: I . Preparation of Stainless Steelâ”Carbon Composite Electrodes. Journal of the Electrochemical Society, 1990, 137, 136-141.	2.9	33
33	Hg/HgO electrode and hydrogen evolution potentials in aqueous sodium hydroxide. Journal of Power Sources, 2006, 161, 1217-1224.	7.8	33
34	Microfibrous entrapped small particle adsorbents for high efficiency heterogeneous contacting. Separation and Purification Technology, 2008, 62, 304-316.	7.9	32
35	Aerosol filtration enhancement using carbon nanostructures synthesized within a sintered nickel microfibrous matrix. Separation and Purification Technology, 2012, 87, 84-94.	7.9	31
36	Air Electrode: Identification of Intraelectrode Rate Phenomena via AC Impedance. Journal of the Electrochemical Society, 1995, 142, 4169-4175.	2.9	30

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37	Glass fiber entrapped sorbent for reformates desulfurization for logistic PEM fuel cell power systems. Journal of Power Sources, 2007, 174, 302-311.	7.8	30
38	Fuel cell cathode air filters: Methodologies for design and optimization. Journal of Power Sources, 2007, 168, 391-399.	7.8	28
39	Multilayered Twoâ€Ðimensional V₂CT_x MXene for Methane Dehydroaromatization. ChemCatChem, 2020, 12, 3639-3643.	3.7	28
40	Density Functional Theory Study of Organosulfur Selective Adsorption on Agâ€“TiO₂ Adsorbents. Journal of Physical Chemistry C, 2014, 118, 14938-14947.	3.1	27
41	Performance comparison between high temperature and traditional proton exchange membrane fuel cell stacks using electrochemical impedance spectroscopy. Journal of Power Sources, 2014, 256, 250-257.	7.8	26
42	Critical flow rate of anode fuel exhaust in a PEM fuel cell system. Journal of Power Sources, 2006, 156, 512-519.	7.8	25
43	Neutron scattering study of hydrogen on ruthenium sulfide. The Journal of Physical Chemistry, 1988, 92, 5184-5188.	2.9	24
44	Hydrazine reduction of transition-metal oxides. Journal of the Chemical Society Faraday Transactions I, 1987, 83, 3271.	1.0	23
45	Temperature programmed desorption study of the adsorption and absorption of hydrogen on and in Cu(111). Applied Surface Science, 1997, 119, 267-274.	6.1	23
46	Origin of strong Gâ€² band in Raman spectra of carbon whiskers. Applied Physics Letters, 2002, 80, 3733-3735.	3.3	23
47	A novel cooling structure with a matrix block of microfibrous media / phase change materials for heat transfer enhancement in high power Li-ion battery packs. Journal of Cleaner Production, 2019, 210, 542-551.	9.3	23
48	Composite fiber structures for catalysts and electrodes. Journal of Power Sources, 1994, 47, 297-302.	7.8	22
49	Adsorption and desorption of dibenzothiophene on Ag-titania studied by the complementary temperature-programmed XPS and ESR. Applied Surface Science, 2011, 257, 3226-3232.	6.1	22
50	An in situ temperatureâ€programmed XPS study of the surface chemical reactions of thiophene with Ag/titania. Surface and Interface Analysis, 2010, 42, 1476-1482.	1.8	21
51	Characteristics of sulfur removal by silver-titania adsorbents at ambient conditions. Adsorption, 2011, 17, 663-673.	3.0	21
52	A study of the tribological and electrical properties of sputtered and burnished transition metal dichalcogenide films. Surface and Coatings Technology, 1995, 76-77, 415-420.	4.8	20
53	Study of the Surface Chemical Reactions of Thiophene with Ag/Titania by the Complementary Temperature-Programmed Electron Spin Resonance, Temperature-Programmed Desorption, and X-ray Photoelectron Spectroscopy: Adsorption, Desorption, and Sorbent Regeneration Mechanisms. Journal of Physical Chemistry C, 2010, 114, 4075-4085.	3.1	20
54	Reactive adsorption of hydrogen sulfide by promoted sorbents Cuâ€ZnO/SiO₂: active sites by experiment and simulation. Surface and Interface Analysis, 2013, 45, 865-872.	1.8	20

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55	Metalâ€Carbon Composite Electrodes from Fiber Precursors: II . Electrochemical Characterization of Stainless Steelâ€Carbon Structures. Journal of the Electrochemical Society, 1990, 137, 1750-1757.	2.9	19
56	Nickelâ€“zinc accordion-fold batteries with microfibrous electrodes using a papermaking process. Journal of Power Sources, 2002, 112, 353-366.	7.8	17
57	Persistent adsorptive desulfurization enhancement of TiO 2 after one-time ex-situ UV-treatment. Fuel, 2017, 193, 95-100.	6.4	17
58	Pressure Drop Predictions in Microfibrous Materials Using Computational Fluid Dynamics. Journal of Fluids Engineering, Transactions of the ASME, 2008, 130, .	1.5	16
59	A novel nano-nonwoven fabric with three-dimensionally dispersed nanofibers: entrapment of carbon nanofibers within nonwovens using the wet-lay process. Nanotechnology, 2012, 23, 185601.	2.6	16
60	Investigation of Organosulfur Adsorption Pathways from Liquid Fuels onto Ag/TiOxâ€“Al2O3Adsorbents at Ambient Conditions. Energy & Fuels, 2013, 27, 4353-4362.	5.1	16
61	Characterization of asymmetric ultracapacitors as hybrid pulse power devices for efficient energy storage and power delivery applications. Applied Energy, 2016, 169, 460-468.	10.1	16
62	Effective thermal conductivity and junction factor for sintered microfibrous materials. International Journal of Heat and Mass Transfer, 2013, 56, 10-19.	4.8	15
63	MÃ¶ssbauer studies of high surface area pillared-clays containing mixed metal complexes. Hyperfine Interactions, 1988, 41, 661-664.	0.5	14
64	Surface and bulk interactions of hydrogen with copper. Applied Surface Science, 1997, 119, 275-287.	6.1	14
65	Facile Regeneration Vitreous Microfibrous Entrapped Supported ZnO Sorbent with High Contacting Efficiency for Bulk H₂S Removal from Reformate Streams in Fuel Cell Applications. Journal of Materials Engineering and Performance, 2006, 15, 439-441.	2.5	14
66	Equivalent circuit elements for PSpice simulation of PEM stacks at pulse load. Journal of Power Sources, 2008, 178, 197-206.	7.8	14
67	Microfibrous entrapped hybrid iron-based catalysts for Fischerâ€“Tropsch synthesis. Catalysis Today, 2016, 273, 62-71.	4.4	14
68	Understanding the dispersion of Ag on high surface area TiO2 supports using XPS intensity ratios. Applied Surface Science, 2015, 353, 679-685.	6.1	13
69	Microfibrous nickel substrates and electrodes for battery system applications. Journal of Power Sources, 2002, 111, 221-231.	7.8	12
70	Microfibrous Entrapment of Small Catalyst Particulates for High Contacting Efficiency Removal of Trace CO From Practical Reformates for PEM H₂-O₂ Fuel Cells. Journal of Materials Engineering and Performance, 2006, 15, 453-456.	2.5	12
71	Diffusion and Gas Conversion Analysis of Solid Oxide Fuel Cells at Loads via AC Impedance. International Journal of Electrochemistry, 2011, 2011, 1-11.	2.4	12
72	Pressure drop and aerosol filtration efficiency of microfibrous entrapped catalyst and sorbent media: Semi-empirical models. Separation and Purification Technology, 2012, 86, 55-63.	7.9	12

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73	Catalytic Material with Enhanced Contacting Efficiency for Volatile Organic Compound Removal at Ultrashort Contact Time. Industrial & Engineering Chemistry Research, 2013, 52, 15494-15503.	3.7	12
74	Improvement of Commercial Gas Mask Canisters Using Adsorbents Enhanced by Sintered Microfibrous Networks. Industrial & Engineering Chemistry Research, 2014, 53, 6509-6520.	3.7	12
75	Immobilization of CO2 by aqueous K2CO3 using microfibrous media entrapped small particulates for battery and fuel cell applications. Journal of Power Sources, 2007, 173, 478-486.	7.8	11
76	Ammonia: It's Transformation and Effective Utilization. , 2008, , .		11
77	Comparison of washâ€coated monoliths vs. microfibrous entrapped catalyst structures for catalytic VOC removal. AICHE Journal, 2014, 60, 3814-3823.	3.6	11
78	Comparison of Packed Beds, Washcoated Monoliths, and Microfibrous Entrapped Catalysts for Ozone Decomposition at High Volumetric Flow Rates in Pressurized Systems. Industrial & Engineering Chemistry Research, 2016, 55, 8025-8033.	3.7	10
79	Growth of nanostructured ZnO on wearable fabrics for functional garment. Materials Letters, 2014, 118, 47-50.	2.6	9
80	Simulation of Ni-MH Batteries via an Equivalent Circuit Model for Energy Storage Applications. Advances in Physical Chemistry, 2016, 2016, 1-11.	2.0	9
81	Electrochemical Reduction of Oxygen at â€œElectrocoatedâ€•Nafionâ€Modified Metalâ€Carbon Composite and Platinum Electrodes. Journal of the Electrochemical Society, 1993, 140, 1026-1033.	2.9	8
82	A Semi-Empirical Pressure Drop Model: Part Iâ€”Pleated Filters. HVAC and R Research, 2008, 14, 841-860.	0.6	8
83	Kinetic study of SO2 adsorption on microfibrous entrapped sorbents for solid oxide fuel cell cathode protection. Chemical Engineering Science, 2019, 201, 157-166.	3.8	8
84	High surface area, low-weight composite nickel fiber electrodes. Journal of Power Sources, 1994, 47, 251-259.	7.8	7
85	Building a Microkinetic Model from First Principles for Higher Amine Synthesis on Pd Catalyst. Industrial & Engineering Chemistry Research, 2019, 58, 19022-19032.	3.7	7
86	Metal microfibers entrapped catalysts as effective ambient temperature CO oxidation catalysts. Applied Catalysis A: General, 2012, 441-442, 54-64.	4.3	6
87	High surface area, supported precious metal cathodes utilizing metal microfibrous collectors for application in chlor-alkali cells. Journal of Applied Electrochemistry, 2005, 35, 581-587.	2.9	5
88	Microfibrous entrapped catalysts for low temperature CO oxidation in humid air. Catalysis Communications, 2012, 27, 9-12.	3.3	5
89	Micro Scale Heat Transfer Comparison between Packed Beds and Microfibrous Entrapped Catalysts. Engineering Applications of Computational Fluid Mechanics, 2013, 7, 471-485.	3.1	5
90	A CFD pressure drop model for microfibrous entrapped catalyst filters using micro-scale imaging. Engineering Applications of Computational Fluid Mechanics, 2015, 9, 567-576.	3.1	5

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91	A Career in Catalysis: James A. Dumesic. ACS Catalysis, 2021, 11, 2310-2339.	11.2	5
92	Selective Electrochemical Oxidation of Coal in Aqueous Alkaline Electrolyte. Journal of the Electrochemical Society, 1995, 142, 782-787.	2.9	4
93	Experimental, Theoretical, and Computational Comparison of Pressure Drops Occurring in Pleated Catalyst Structure. Industrial & Engineering Chemistry Research, 2013, 52, 14472-14482.	3.7	4
94	Loading of fibrous filter media and newly designed filter configurations by salt particles: An experimental study. AICHE Journal, 2016, 62, 3739-3750.	3.6	4
95	Filtration performance of novel microfibrous media embedded with nanofiber flocs for aerosol particle removal. Nanotechnology, 2019, 30, 075603.	2.6	4
96	A Semi-Empirical Pressure Drop Model: Part IIâ€"Multi-Element Pleated Filter Banks. HVAC and R Research, 2009, 15, 269-286.	0.6	3
97	Carbon Nanofiber Synthesis within 3-Dimensional Sintered Nickel Microfibrous Matrices: Optimization of Synthesis Conditions. Journal of Nanotechnology, 2012, 2012, 1-14.	3.4	3
98	Angular and energy distributions of low energy electrons from backscattered-conversion electron MÃ¶ssbauer spectroscopy. Hyperfine Interactions, 1990, 57, 1949-1954.	0.5	2
99	Investigation of internal interfacial reactions of the Feâ^'Ti hydride system. Hyperfine Interactions, 1990, 57, 2083-2088.	0.5	2
100	In-Situ Dynamic Characterization of Energy Storage and Conversion Systems. , 2013, , .		2
101	Adsorption and Reaction Mechanisms of Thiophene over Sulfided Ruthenium Catalysts. Materials Research Society Symposia Proceedings, 1987, 111, 335.	0.1	1
102	Process integration under size constraints: Logistical fuels for mobile applications. Computer Aided Chemical Engineering, 2007, 24, 1059-1064.	0.5	1
103	Microfibrous Entrapped Catalysts for Low Temperature CO Oxidation. Materials Research Society Symposia Proceedings, 2009, 1217, 1.	0.1	1
104	Characterization of Dirt Holding Capacity of Microfiber-Based Filter Media Using Thermal Impedance Spectroscopy. ACS Applied Materials & Interfaces, 2020, 12, 15737-15747.	8.0	1
105	Joint Numericalâ€"Experimental Investigation of Enhanced Chemical Reactivity in Microfibrous Materials for Desulfurization. Journal of Fluids Engineering, Transactions of the ASME, 2015, 137, .	1.5	1
106	Surface Chemical Characterization of Internal Interfaces Generated Within Thin-Film Fe-Ti Hydrides. Materials Research Society Symposia Proceedings, 1987, 111, 369.	0.1	0
107	Fabrication of Composite Materials from Fibrous Precursors Using Paper Making Procedures. Materials Research Society Symposia Proceedings, 1990, 197, 297.	0.1	0
108	Novel Composite Electrodes from Fibrous Precursors. Materials and Processing Report, 1990, 5, 3-4.	0.0	0

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109	Electrical conductive composite lubricants. AIP Conference Proceedings, 1995, , .	0.4	0
110	Flow Characterization Through Sintered Microfibrous Materials: Potential Ramifications to Stirling Engine Regenerators. , 2003, , .		0
111	Process integration and optimization of logistical fuels processing for hydrogen production. Computer Aided Chemical Engineering, 2005, 20, 1609-1614.	0.5	0
112	Minimization of Carbon Monoxide Poisoning in Polymer Electrolyte Fuel Cells using in situ PROX Catalysts. ECS Transactions, 2008, 13, 119-122.	0.5	0
113	New Structures of Matter for High Performance Heterogeneous Catalytic Beneficiation of Cabin Air. , 2010, , .		0
114	Note: Heated sample platform for in situ temperature-programmed XPS. Review of Scientific Instruments, 2011, 82, 076106.	1.3	0
115	Microfibrous Entrapped Catalysts for Cleaning Aircraft Cabin Air: VOC Removal at Ultra-Short Short Contact Times. , 2012, , .		0
116	Ozone Removal at Micro-Second Contact Time for Aircraft Cabin Air Using Microfibrous Entrapped Catalysts. , 2012, , .		0
117	In Situ Performance Analysis of a High Temperature PEM Fuel Cell Stack at Loads. ECS Transactions, 2013, 45, 67-72.	0.5	0
118	A fiber optics system for monitoring utilization of ZnO adsorbent beds during desulfurization for logistic fuel cell applications. Journal of Power Sources, 2016, 315, 242-253.	7.8	0