David M Bartels

List of Publications by Year
in descending order

109 papers	4,329 citations	117571 34 h-index	118793 62 g-index
114 all docs	114 docs citations	114 times ranked	3836 citing authors

#	Article	IF	Citations
1	Corrosion behavior of ferritic FeCrAl alloys in simulated BWR normal water chemistry. Journal of Nuclear Materials, 2021, 545, 152744.	1.3	14
2	Failure of molecular dynamics to provide appropriate structures for quantum mechanical description of the aqueous chloride ion charge-transfer-to-solvent ultraviolet spectrum. Physical Chemistry Chemical Physics, 2021, 23, 9109-9120.	1.3	1
3	The scaling of kinetic and transport behaviors in the solution-phase chemistry of a plasmaâ€“liquid interface. Journal of Applied Physics, 2021, 129, .	1.1	9
4	H2 production in the 10B(n,Î±)7Li reaction in water. Radiation Physics and Chemistry, 2021, 180, 109319.	1.4	0
5	Experimental confirmation of solvated electron concentration and penetration scaling at a plasmaâ€“liquid interface. Plasma Sources Science and Technology, 2021, 30, 03LT01.	1.3	11
6	Recent advances in understanding the role of solvated electrons at the plasma-liquid interface of solution-based gas discharges. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2021, 186, 106307.	1.5	18
7	One-electron redox kinetics of aqueous transition metal couples Zn^{2+/+}, Co^{2+/+}, and Ni^{2+/+} using pulse radiolysis. Physical Chemistry Chemical Physics, 2020, 22, 19046-19058.	1.3	8
8	The effects of neutron and ionizing irradiation on the aqueous corrosion of SiC. Journal of Nuclear Materials, 2020, 536, 152190.	1.3	17
9	Chemical Analysis of Secondary Electron Emission from a Water Cathode at the Interface with a Nonthermal Plasma. Langmuir, 2020, 36, 1156-1164.	1.6	18
10	Is the Hydrated Electron Vertical Detachment Genuinely Bimodal?. Journal of Physical Chemistry Letters, 2019, 10, 4910-4913.	2.1	12
11	Partial Molar Volume of the Hydrated Electron. Journal of Physical Chemistry Letters, 2019, 10, 2220-2226.	2.1	19
12	Effect of Competing Oxidizing Reactions and Transport Limitation on the Faradaic Efficiency in Plasma Electrolysis. Journal of the Electrochemical Society, 2019, 166, E181-E186.	1.3	16
13	Reduction of CO2 by hydrated electrons in high temperature water. Radiation Physics and Chemistry, 2019, 158, 61-63.	1.4	16
14	Î³-Radiolysis of Room-Temperature Ionic Liquids: An EPR Spin-Trapping Study. Journal of Physical Chemistry B, 2019, 123, 10837-10849.	1.2	6
15	Ultraviolet charge-transfer-to-solvent spectroscopy of halide and hydroxide ions in subcritical and supercritical water. Physical Chemistry Chemical Physics, 2019, 21, 24419-24428.	1.3	5
16	Total Internal Reflection Absorption Spectroscopy (TIRAS) for the Detection of Solvated Electrons at a Plasma-liquid Interface. Journal of Visualized Experiments, 2018, , .	0.2	5
17	The penetration and concentration of solvated electrons and hydroxyl radicals at a plasma-liquid interface. Plasma Sources Science and Technology, 2018, 27, 115013.	1.3	42
18	Radiolysis driven changes to oxide stability during irradiation-corrosion of 316L stainless steel in high temperature water. Journal of Nuclear Materials, 2017, 493, 40-52.	1.3	36

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19	Vacuum ultraviolet spectroscopy of the lowest-lying electronic state in subcritical and supercritical water. Nature Communications, 2017, 8, 15435.	5.8	20
20	Reaction rate of H atoms with N2O in hot water. Radiation Physics and Chemistry, 2017, 135, 18-22.	1.4	0
21	Low LET radiolysis escape yields for reducing radicals and H2 in pressurized high temperature water. Radiation Physics and Chemistry, 2016, 121, 35-42.	1.4	13
22	Source of Molecular Hydrogen in High-Temperature Water Radiolysis. Journal of Physical Chemistry A, 2016, 120, 200-209.	1.1	25
23	VACUUM ULTRAVIOLET SPECTROSCOPY OF THE LOWEST-LYING ELECTRONIC STATE IN SUB-CRITICAL AND SUPERCRITICAL WATER. , 2016, , .		0
24	The effect of air on solvated electron chemistry at a plasma/liquid interface. Journal Physics D: Applied Physics, 2015, 48, 424001.	1.3	64
25	Reactions of Hexa-aquo Transition Metal Ions with the Hydrated Electron up to 300 Â°C. Journal of Physical Chemistry A, 2015, 119, 11094-11104.	1.1	20
26	Hydroxymethyl Radical Self-Recombination in High-Temperature Water. Journal of Physical Chemistry A, 2015, 119, 1830-1837.	1.1	5
27	The solvation of electrons by an atmospheric-pressure plasma. Nature Communications, 2015, 6, 7248.	5.8	248
28	A Simple ab Initio Model for the Hydrated Electron That Matches Experiment. Journal of Physical Chemistry A, 2015, 119, 9148-9159.	1.1	88
29	Laboratory studies in search of the critical hydrogen concentration. Radiation Physics and Chemistry, 2013, 82, 25-34.	1.4	24
30	Modeling the critical hydrogen concentration in the AECL test reactor. Radiation Physics and Chemistry, 2013, 82, 16-24.	1.4	26
31	Hyperfine coupling of the hydrogen atom in high temperature water. Journal of Chemical Physics, 2013, 138, 124503.	1.2	1
32	Comparison of Acid Generation in EUV Lithography Films of Poly(4-hydroxystyrene) (PHS) and Noria Adamantyl Ester (Noria-AD₅₀). Journal of Physical Chemistry B, 2012, 116, 6215-6224.	1.2	11
33	Evidence for a slow and oxygen-insensitive intra-molecular long range electron transfer from tyrosine residues to the semi-oxidized tryptophan 214 in human serum albumin: its inhibition by bound copper (II). Amino Acids, 2012, 42, 1269-1275.	1.2	8
34	Rate constants for the reaction of hydronium ions with hydrated electrons up to 350Â°C. Radiation Physics and Chemistry, 2010, 79, 64-65.	1.4	12
35	Carbonate Radical Formation in Radiolysis of Sodium Carbonate and Bicarbonate Solutions up to 250 Â°C and the Mechanism of its Second Order Decay. Journal of Physical Chemistry A, 2010, 114, 2142-2150.	1.1	40
36	Neutron and Î²/Î³ Radiolysis of Water up to Supercritical Conditions. 2. SF₆ as a Scavenger for Hydrated Electron. Journal of Physical Chemistry A, 2010, 114, 7479-7484.	1.1	13

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37	Solvated Electron Extinction Coefficient and Oscillator Strength in High Temperature Water. Journal of Physical Chemistry A, 2010, 114, 1766-1775.	1.1	41
38	Hydrogen gas yields in irradiated room-temperature ionic liquids. Radiation Physics and Chemistry, 2009, 78, 168-172.	1.4	45
39	Comment on the possible role of the reaction H+H2Oâ†'H2+OH in the radiolysis of water at high temperatures. Radiation Physics and Chemistry, 2009, 78, 191-194.	1.4	27
40	Advanced oxidation and reduction process chemistry of methyl tert-butyl ether (MTBE) reaction intermediates in aqueous solution: 2-Methoxy-2-methyl-propanal, 2-methoxy-2-methyl-propanol, and 2-methoxy-2-methyl-propanoic acid. Chemosphere, 2009, 77, 1352-1357.	4.2	4
41	Hydrated Electron Extinction Coefficient Revisited. Journal of Physical Chemistry A, 2008, 112, 6800-6802.	1.1	69
42	An apparatus for the study of high temperature water radiolysis in a nuclear reactor: Calibration of dose in a mixed neutron/gamma radiation field. Review of Scientific Instruments, 2007, 78, 124101.	0.6	10
43	Reaction of the Hydroxyl Radical with Phenol in Water Up to Supercritical Conditions. Journal of Physical Chemistry A, 2007, 111, 1869-1878.	1.1	69
44	Hydroxyl Radical Self-Recombination Reaction and Absorption Spectrum in Water Up to 350 Â°C. Journal of Physical Chemistry A, 2007, 111, 1835-1843.	1.1	74
45	Interplay of Oxygen, Vitamin E, and Carotenoids in Radical Reactions following Oxidation of Trp and Tyr Residues in Native HDL3 Apolipoproteins. Comparison with LDL. A Time-Resolved Spectroscopic Analysis. Biochemistry, 2007, 46, 5226-5237.	1.2	8
46	Recombination of the Hydrated Electron at High Temperature and Pressure in Hydrogenated Alkaline Water. Journal of Physical Chemistry A, 2007, 111, 11540-11551.	1.1	41
47	Neutron and Î²/Î³ Radiolysis of Water up to Supercritical Conditions. 1. Î²/Î³ Yields for H₂, H^{â€¢} Atom, and Hydrated Electron. Journal of Physical Chemistry A, 2007, 111, 7777-7786.	1.1	41
48	Reaction of O2with the Hydrogen Atom in Water up to 350 Â°C. Journal of Physical Chemistry A, 2007, 111, 79-88.	1.1	35
49	Albumin-Bound Quercetin Repairs Vitamin E Oxidized by Apolipoprotein Radicals in Native HDL₃ and LDL. Biochemistry, 2007, 46, 14305-14315.	1.2	13
50	Solvated electron spectrum in supercooled water and ice. Chemical Physics Letters, 2007, 438, 234-237.	1.2	32
51	Temperature and density dependence of the light and heavy water ultraviolet absorption edge. Journal of Chemical Physics, 2006, 125, 104314.	1.2	35
52	Reaction of Hydrogen Atoms with Hydroxide Ions in High-Temperature and High-Pressure Water. Journal of Physical Chemistry A, 2005, 109, 1843-1848.	1.1	27
53	Pulse Radiolysis of Supercritical Water. 3. Spectrum and Thermodynamics of the Hydrated Electron. Journal of Physical Chemistry A, 2005, 109, 1299-1307.	1.1	114
54	Rate Constant and Activation Energy Measurement for the Reaction of Atomic Hydrogen with Thiocyanate and Azide in Aqueous Solution. Journal of Physical Chemistry A, 2005, 109, 11823-11827.	1.1	4

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55	Role of Water in Electron-Initiated Processes and Radical Chemistry:â€‰ Issues and Scientific Advances. Chemical Reviews, 2005, 105, 355-390.	23.0	560
56	Reaction rates of the hydrated electron with N2O in high temperature water and potential surface of the N2Oâˆ’ anion. Chemical Physics Letters, 2004, 383, 445-450.	1.2	34
57	Recombination of geminate (OH,eaqâˆ’) pairs in concentrated alkaline solutions: lack of evidence for hydroxyl radical deprotonation. Chemical Physics Letters, 2004, 389, 379-384.	1.2	10
58	Ultrafast dynamics for electron photodetachment from aqueous hydroxide. Journal of Chemical Physics, 2004, 120, 11712-11725.	1.2	59
59	Evaluation of Silica-Coated Tubing for the Measurement of Hydrogen Peroxide in Hot Water. Industrial & Engineering Chemistry Research, 2004, 43, 1888-1889.	1.8	0
60	Radiation Chemistry of Methyltert-Butyl Ether in Aqueous Solution. Environmental Science & Technology, 2004, 38, 3994-4001.	4.6	21
61	Electron Photodetachment from Aqueous Anions. 2. Ionic Strength Effect on Geminate Recombination Dynamics and Quantum Yield for Hydrated Electron. Journal of Physical Chemistry A, 2004, 108, 10414-10425.	1.1	40
62	Free Radical Destruction ofN-Nitrosodimethylamine in Water. Environmental Science & Technology, 2004, 38, 3161-3167.	4.6	86
63	Revealing the Nature of Trapping Sites in Nanocrystalline Titanium Dioxide by Selective Surface Modificationâ€. Journal of Physical Chemistry B, 2003, 107, 7368-7375.	1.2	88
64	Pulse Radiolysis of Supercritical Water. Part 1. Reactions Between Hydrophobic and Anionic Species.. ChemInform, 2003, 34, no.	0.1	0
65	Reaction of OH* radicals with H2 in sub-critical water. Chemical Physics Letters, 2003, 371, 144-149.	1.2	34
66	The secondary response distortion in transient absorption spectroscopy. Review of Scientific Instruments, 2002, 73, 3908-3915.	0.6	19
67	Transient Negative Species in Supercritical Carbon Dioxide:â€‰ Electronic Spectra and Reactions of CO2 Anion Clusters. Journal of Physical Chemistry A, 2002, 106, 108-114.	1.1	25
68	Pulse Radiolysis of Supercritical Water. 1. Reactions between Hydrophobic and Anionic Speciesâ€. Journal of Physical Chemistry A, 2002, 106, 12260-12269.	1.1	56
69	Pulse Radiolysis of Supercritical Water. 2. Reaction of Nitrobenzene with Hydrated Electrons and Hydroxyl Radicalsâ€. Journal of Physical Chemistry A, 2002, 106, 12270-12279.	1.1	35
70	Laser-Initiated Chemical Reactions in Carbon Suspensions. Journal of Physical Chemistry A, 2002, 106, 10072-10078.	1.1	17
71	Free radical reactions of monochloramine and hydroxylamine in aqueous solution. Radiation Physics and Chemistry, 2002, 65, 317-326.	1.4	37
72	The free radical chemistry of tert-butyl formate: rate constants for hydroxyl radical, hydrated electron and hydrogen atom reaction in aqueous solution. Radiation Physics and Chemistry, 2002, 65, 309-315.	1.4	26

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73	Absolute rate constants for the reaction of the hydrated electron, hydroxyl radical and hydrogen atom with chloroacetones in water. Radiation Physics and Chemistry, 2002, 65, 327-334.	1.4	19
74	Reaction rates of the hydrated electron with NO2âˆ’, NO3âˆ’, and hydronium ions as a function of temperature from 125 to 380 Â°C. Chemical Physics Letters, 2002, 357, 358-364.	1.2	36
75	Solvation and kinetic isotope effects in H and D abstraction reactions from formate ions by D, H and Mu atoms in aqueous solution. Physical Chemistry Chemical Physics, 2001, 3, 2031-2037.	1.3	22
76	Radiation Chemistry of Alternative Fuel Oxygenates:Â Substituted Ethers. Journal of Physical Chemistry A, 2001, 105, 3521-3526.	1.1	15
77	Radiolytically Induced Formation and Optical Absorption Spectra of Colloidal Silver Nanoparticles in Supercritical Ethane,. Journal of Physical Chemistry B, 2001, 105, 954-959.	1.2	122
78	Spur Decay Kinetics of the Solvated Electron in Heavy Water Radiolysisâ€. Journal of Physical Chemistry A, 2001, 105, 8069-8072.	1.1	30
79	Pulse Radiolysis Studies of Solvated Electrons in Supercritical Ethane with Methanol as Cosolventâ€. Journal of Physical Chemistry A, 2001, 105, 7236-7240.	1.1	15
80	Temperature effect on spectrum of solvated electron formed in a mixture of supercritical ethane. Radiation Physics and Chemistry, 2001, 60, 399-404.	1.4	0
81	Kinetics of the reaction of H and D with methanediol and 1,2-ethanediol in aqueous solution. Chemical Physics Letters, 2001, 342, 524-528.	1.2	4
82	Moment analysis of hydrated electron cluster spectra: Surface or internal states?. Journal of Chemical Physics, 2001, 115, 4404-4405.	1.2	64
83	Design of an optical cell for pulse radiolysis of supercritical water. Review of Scientific Instruments, 2000, 71, 3345-3350.	0.6	38
84	Photoionization Yield vs Energy in H2O and D2O. Journal of Physical Chemistry A, 2000, 104, 3349-3355.	1.1	81
85	Charged Species in the Radiolysis of Supercritical CO2â€. Journal of Physical Chemistry A, 2000, 104, 568-576.	1.1	24
86	Spur Decay of the Solvated Electron in Picosecond Radiolysis Measured with Time-Correlated Absorption Spectroscopyâ€. Journal of Physical Chemistry A, 2000, 104, 1686-1691.	1.1	105
87	Pulse radiolytic studies of supercritical CO21Work performed under the auspices of the Office of Basic Energy Sciences, Division of Chemical Science, USâ€“DOE under contract number W-31-109-ENG-38.1. Chemical Physics Letters, 1999, 309, 61-68.	1.2	22
88	Muonium in sub- and supercritical water. Physical Chemistry Chemical Physics, 1999, 1, 4999-5004.	1.3	20
89	Kinetic Isotope Effects in H and D Abstraction Reactions from Alcohols by D Atoms in Aqueous Solution. Journal of Physical Chemistry A, 1998, 102, 7462-7469.	1.1	20
90	Rate of Hydrogen Atom Reaction with Ethanol, Ethanol-d5, 2-Propanol, and 2-Propanol-d7in Aqueous Solutionâ€. Journal of Physical Chemistry A, 1997, 101, 1329-1333.	1.1	31

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91	Rate constants for the reaction of the hydrogen atom with aliphatic ketones in water. Canadian Journal of Chemistry, 1997, 75, 1114-1119.	0.6	5
92	Temperature Dependence of Hydrogen Atom Reaction with Nitrate and Nitrite Species in Aqueous Solutionâ€. Journal of Physical Chemistry A, 1997, 101, 6233-6237.	1.1	47
93	Temperature Dependence of Oxygen Diffusion inH2O and D2Oâ€. The Journal of Physical Chemistry, 1996, 100, 5597-5602.	2.9	284
94	pK a of the hydrazinium ion and the reaction of hydrogen atoms with hydrazine in aqueous solution. Journal of the Chemical Society, Faraday Transactions, 1996, 92, 2541.	1.7	18
95	Reconciliation of Transient Absorption and Chemically Scavenged Yields of the Hydrated Electron in Radiolysis. The Journal of Physical Chemistry, 1996, 100, 9412-9415.	2.9	55
96	Reaction of H, D, and muonium atoms with Iâˆ’ in aqueous solution. Chemical Physics, 1996, 203, 339-349.	0.9	2
97	Multiphoton Ionization of Liquid Water with 3.0âˆ’5.0 eV Photonsâ€. The Journal of Physical Chemistry, 1996, 100, 17940-17949.	2.9	201
98	H2O/D2O Isotope Effect in Geminate Recombination of the Hydrated Electron. The Journal of Physical Chemistry, 1996, 100, 17713-17715.	2.9	29
99	Isotope and temperature effects on the hyperfine interaction of atomic hydrogen in liquid water and in ice. Journal of Chemical Physics, 1995, 102, 5989-5997.	1.2	44
100	Direct EPR measurement of Arrhenius parameters for the reactions of H? atoms with H2O2 and D? atoms with D2O2 in aqueous solution. Journal of the Chemical Society, Faraday Transactions, 1995, 91, 3127.	1.7	34
101	Rate Constant and Activation Energy Measurement for the Reaction of Atomic Hydrogen with Methanol, Iodomethane, Iodoethane, and 1-Iodopropane in Aqueous Solution. The Journal of Physical Chemistry, 1994, 98, 10578-10583.	2.9	25
102	EPR Measurement of the Reaction of Atomic Hydrogen with Periodate and Iodate in Aqueous Solution. The Journal of Physical Chemistry, 1994, 98, 12594-12599.	2.9	10
103	H and Mu diffusion in ice. Hyperfine Interactions, 1994, 85, 91-96.	0.2	3
104	Absolute rate constant measurements for the reaction of atomic hydrogen with acetone, 2-butanone, propionaldehyde, and butyraldehyde in aqueous solution. Canadian Journal of Chemistry, 1994, 72, 2516-2520.	0.6	13
105	Diffusion of atomic hydrogen in ice-Ih. Chemical Physics Letters, 1993, 210, 129-134.	1.2	8
106	EPR measurement of the reaction of atomic hydrogen with bromide and iodide in aqueous solution. The Journal of Physical Chemistry, 1993, 97, 4101-4105.	2.9	30
107	Diffusion and CIDEP of H and D atoms in solid H2O, D2O and isotopic mixtures. Chemical Physics, 1992, 164, 421-437.	0.9	42
108	Reevaluation of Arrhenius parameters for hydrogen atom + hydroxide .fwdarw. (e-)aq + water and the enthalpy and entropy of hydrated electrons. The Journal of Physical Chemistry, 1990, 94, 7294-7299.	2.9	66

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109	Rotational effects in the intermediate-case radiationless decay of pyrimidine. The Journal of Physical Chemistry, 1982, 86, 5180-5191.	2.9	20