

Frank C Walsh

List of Publications by Year in descending order

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131
papers

11,727
citations

34076

52
h-index

27389

106
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138
all docs

138
docs citations

138
times ranked

10786
citing authors

#	ARTICLE	IF	CITATIONS
1	Redox flow cells for energy conversion. <i>Journal of Power Sources</i> , 2006, 160, 716-732.	4.0	991
2	Progress in redox flow batteries, remaining challenges and their applications in energy storage. <i>RSC Advances</i> , 2012, 2, 10125.	1.7	778
3	Electrodeposition of composite coatings containing nanoparticles in a metal deposit. <i>Surface and Coatings Technology</i> , 2006, 201, 371-383.	2.2	726
4	The effect of hydrothermal conditions on the mesoporous structure of TiO ₂ nanotubes. <i>Journal of Materials Chemistry</i> , 2004, 14, 3370.	6.7	673
5	Development of the all-vanadium redox flow battery for energy storage: a review of technological, financial and policy aspects. <i>International Journal of Energy Research</i> , 2012, 36, 1105-1120.	2.2	577
6	Electrochemical synthesis of hydrogen peroxide from water and oxygen. <i>Nature Reviews Chemistry</i> , 2019, 3, 442-458.	13.8	544
7	Recent developments in organic redox flow batteries: A critical review. <i>Journal of Power Sources</i> , 2017, 360, 243-283.	4.0	396
8	Reticulated vitreous carbon as an electrode material. <i>Journal of Electroanalytical Chemistry</i> , 2004, 561, 203-217.	1.9	294
9	Electrochemical approaches to the production of graphene flakes and their potential applications. <i>Carbon</i> , 2013, 54, 1-21.	5.4	285
10	Recent progress and continuing challenges in bio-fuel cells. Part I: Enzymatic cells. <i>Biosensors and Bioelectronics</i> , 2011, 26, 3087-3102.	5.3	234
11	Engineering aspects of the design, construction and performance of modular redox flow batteries for energy storage. <i>Journal of Energy Storage</i> , 2017, 11, 119-153.	3.9	229
12	Three-dimensional graphene oxide/polypyrrole composite electrodes fabricated by one-step electrodeposition for high performance supercapacitors. <i>Journal of Materials Chemistry A</i> , 2015, 3, 14445-14457.	5.2	212
13	Elongated Titanate Nanostructures and Their Applications. <i>European Journal of Inorganic Chemistry</i> , 2009, 2009, 977-997.	1.0	203
14	Characterization of a zinc-cerium flow battery. <i>Journal of Power Sources</i> , 2011, 196, 5174-5185.	4.0	201
15	A Review of the Iron-Air Secondary Battery for Energy Storage. <i>ChemPlusChem</i> , 2015, 80, 323-335.	1.3	178
16	Graphite felt as a versatile electrode material: Properties, reaction environment, performance and applications. <i>Electrochimica Acta</i> , 2017, 258, 1115-1139.	2.6	171
17	A review of the manufacture, mechanical properties and potential applications of auxetic foams. <i>Physica Status Solidi (B): Basic Research</i> , 2013, 250, 1963-1982.	0.7	166
18	Synthesis and characterization of M ₃ V ₂ O ₈ (M = Ni or Co) based nanostructures: a new family of high performance pseudocapacitive materials. <i>Journal of Materials Chemistry A</i> , 2014, 2, 4919.	5.2	161

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19	A review of electrodeposited Ni-Co alloy and composite coatings: Microstructure, properties and applications. <i>Surface and Coatings Technology</i> , 2019, 372, 463-498.	2.2	161
20	Polymer nanocomposites having a high filler content: synthesis, structures, properties, and applications. <i>Nanoscale</i> , 2019, 11, 4653-4682.	2.8	161
21	Stability of Aqueous Suspensions of Titanate Nanotubes. <i>Chemistry of Materials</i> , 2006, 18, 1124-1129.	3.2	160
22	Deposition of Pt, Pd, Ru and Au on the surfaces of titanate nanotubes. <i>Topics in Catalysis</i> , 2006, 39, 151-160.	1.3	131
23	Zinc deposition and dissolution in methanesulfonic acid onto a carbon composite electrode as the negative electrode reactions in a hybrid redox flow battery. <i>Electrochimica Acta</i> , 2011, 56, 6536-6546.	2.6	125
24	The electrodeposition of composite coatings: Diversity, applications and challenges. <i>Current Opinion in Electrochemistry</i> , 2020, 20, 8-19.	2.5	125
25	Electrochemical Corrosion Behaviour of 90% Cu-10 Ni Alloy in Chloride-Based Electrolytes. <i>Journal of Applied Electrochemistry</i> , 2004, 34, 659-669.	1.5	123
26	Redox flow batteries for energy storage: their promise, achievements and challenges. <i>Current Opinion in Electrochemistry</i> , 2019, 16, 117-126.	2.5	117
27	Electrodeposition of Ni P alloy coatings: A review. <i>Surface and Coatings Technology</i> , 2019, 369, 198-220.	2.2	116
28	The importance of key operational variables and electrolyte monitoring to the performance of an all vanadium redox flow battery. <i>Journal of Chemical Technology and Biotechnology</i> , 2013, 88, 126-138.	1.6	103
29	Self-lubricating Ni-P-MoS ₂ composite coatings. <i>Surface and Coatings Technology</i> , 2016, 307, 926-934.	2.2	96
30	An undivided zinc-cerium redox flow battery operating at room temperature (295 K). <i>Electrochemistry Communications</i> , 2011, 13, 770-773.	2.3	95
31	Materials and fabrication of electrode scaffolds for deposition of MnO ₂ and their true performance in supercapacitors. <i>Journal of Power Sources</i> , 2015, 293, 657-674.	4.0	93
32	3D-printed porous electrodes for advanced electrochemical flow reactors: A Ni/stainless steel electrode and its mass transport characteristics. <i>Electrochemistry Communications</i> , 2017, 77, 133-137.	2.3	93
33	The preparation of PbO ₂ coatings on reticulated vitreous carbon for the electro-oxidation of organic pollutants. <i>Electrochimica Acta</i> , 2011, 56, 5158-5165.	2.6	87
34	Developments in the soluble lead-acid flow battery. <i>Journal of Applied Electrochemistry</i> , 2010, 40, 955-965.	1.5	86
35	Studies of three-dimensional electrodes in the FMO1-LC laboratory electrolyser. <i>Journal of Applied Electrochemistry</i> , 1994, 24, 95.	1.5	85
36	Versatile electrochemical coatings and surface layers from aqueous methanesulfonic acid. <i>Surface and Coatings Technology</i> , 2014, 259, 676-697.	2.2	85

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37	Kinetics of Alkali Metal Ion Exchange into Nanotubular and Nanofibrous Titanates. <i>Journal of Physical Chemistry C</i> , 2007, 111, 14644-14651.	1.5	84
38	Ce(III)/Ce(IV) in methanesulfonic acid as the positive half cell of a redox flow battery. <i>Electrochimica Acta</i> , 2011, 56, 2145-2153.	2.6	82
39	Mass transport in the rectangular channel of a filter-press electrolyzer (the FM01-LC reactor). <i>AICHE Journal</i> , 2005, 51, 682-687.	1.8	79
40	The Rotating Cylinder Electrode (RCE) and its Application to the Electrodeposition of Metals. <i>Australian Journal of Chemistry</i> , 2005, 58, 246.	0.5	79
41	The continued development of reticulated vitreous carbon as a versatile electrode material: Structure, properties and applications. <i>Electrochimica Acta</i> , 2016, 215, 566-591.	2.6	78
42	A review of developments in the electrodeposition of tin. <i>Surface and Coatings Technology</i> , 2016, 288, 79-94.	2.2	78
43	The characteristics and performance of hybrid redox flow batteries with zinc negative electrodes for energy storage. <i>Renewable and Sustainable Energy Reviews</i> , 2018, 90, 992-1016.	8.2	77
44	Electrodeposited Hydroxyapatite-Based Biocoatings: Recent Progress and Future Challenges. <i>Coatings</i> , 2021, 11, 110.	1.2	74
45	3D Hierarchically Structured CoS Nanosheets: Li ⁺ Storage Mechanism and Application of the High-Performance Lithium-Ion Capacitors. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 3709-3718.	4.0	72
46	The Development of Zn-Ce Hybrid Redox Flow Batteries for Energy Storage and Their Continuing Challenges. <i>ChemPlusChem</i> , 2015, 80, 288-311.	1.3	69
47	Metastable Nature of Titanate Nanotubes in an Alkaline Environment. <i>Crystal Growth and Design</i> , 2010, 10, 4421-4427.	1.4	65
48	An electrodeposited Ni-P-WS ₂ coating with combined super-hydrophobicity and self-lubricating properties. <i>Electrochimica Acta</i> , 2017, 245, 872-882.	2.6	65
49	A review of developments in the electrodeposition of tin-copper alloys. <i>Surface and Coatings Technology</i> , 2016, 304, 246-262.	2.2	64
50	Review—The Design, Performance and Continuing Development of Electrochemical Reactors for Clean Electrosynthesis. <i>Journal of the Electrochemical Society</i> , 2020, 167, 155525.	1.3	62
51	Mass transport and active area of porous Pt/Ti electrodes for the Zn-Ce redox flow battery determined from limiting current measurements. <i>Electrochimica Acta</i> , 2016, 221, 154-166.	2.6	56
52	Developments in soluble lead flow batteries and remaining challenges: An illustrated review. <i>Journal of Energy Storage</i> , 2018, 15, 69-90.	3.9	56
53	The stability of an acidic tin methanesulfonate electrolyte in the presence of a hydroquinone antioxidant. <i>Electrochimica Acta</i> , 2008, 53, 5280-5286.	2.6	53
54	Electrodeposition of Ni-P composite coatings: A review. <i>Surface and Coatings Technology</i> , 2019, 378, 124803.	2.2	52

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55	Electrochemical redox processes involving soluble cerium species. <i>Electrochimica Acta</i> , 2016, 205, 226-247.	2.6	51
56	Morphological control of synthetic Ni ₃ Si ₂ O ₅ (OH) ₄ nanotubes in an alkaline hydrothermal environment. <i>Journal of Materials Chemistry A</i> , 2013, 1, 548-556.	5.2	50
57	Three-dimensional porous metal electrodes: Fabrication, characterisation and use. <i>Current Opinion in Electrochemistry</i> , 2019, 16, 1-9.	2.5	50
58	The role of a tribofilm and wear debris in the tribological behaviour of nanocrystalline Ni–Co electrodeposits. <i>Wear</i> , 2013, 306, 296-303.	1.5	48
59	Characterization of the reaction environment in a filter-press redox flow reactor. <i>Electrochimica Acta</i> , 2007, 52, 5815-5823.	2.6	47
60	A nonaqueous organic redox flow battery using multi-electron quinone molecules. <i>Journal of Power Sources</i> , 2021, 500, 229942.	4.0	42
61	The influence of operational parameters on the performance of an undivided zinc–cerium flow battery. <i>Electrochimica Acta</i> , 2012, 80, 7-14.	2.6	41
62	The electrodeposition and characterisation of low-friction and wear-resistant Co-Ni-P coatings. <i>Surface and Coatings Technology</i> , 2013, 235, 495-505.	2.2	40
63	Effective particle dispersion via high-shear mixing of the electrolyte for electroplating a nickel-molybdenum disulphide composite. <i>Electrochimica Acta</i> , 2018, 283, 568-577.	2.6	39
64	The influence of a perfluorinated cationic surfactant on the electrodeposition of tin from a methanesulfonic acid bath. <i>Journal of Electroanalytical Chemistry</i> , 2008, 615, 91-102.	1.9	38
65	Towards improved electroplating of metal-particle composite coatings. <i>Transactions of the Institute of Metal Finishing</i> , 2020, 98, 288-299.	0.6	38
66	Developments in electrode design: structure, decoration and applications of electrodes for electrochemical technology. <i>Journal of Chemical Technology and Biotechnology</i> , 2018, 93, 3073-3090.	1.6	37
67	Pressure drop through platinized titanium porous electrodes for cerium-based redox flow batteries. <i>AIChE Journal</i> , 2018, 64, 1135-1146.	1.8	36
68	Mass transfer to a nanostructured nickel electrodeposit of high surface area in a rectangular flow channel. <i>Electrochimica Acta</i> , 2013, 90, 507-513.	2.6	35
69	The Preparation of Auxetic Foams by Three-dimensional Printing and Their Characteristics. <i>Advanced Engineering Materials</i> , 2013, 15, 980-985.	1.6	35
70	Development of electrodeposited multilayer coatings: A review of fabrication, microstructure, properties and applications. <i>Applied Surface Science Advances</i> , 2021, 6, 100141.	2.9	33
71	Developments in plane parallel flow channel cells. <i>Current Opinion in Electrochemistry</i> , 2019, 16, 10-18.	2.5	32
72	The use of electrolyte redox potential to monitor the Ce(IV)/Ce(III) couple. <i>Journal of Environmental Management</i> , 2008, 88, 1417-1425.	3.8	31

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73	Mass transport to reticulated vitreous carbon rotating cylinder electrodes. <i>Journal of Applied Electrochemistry</i> , 1995, 25, 450.	1.5	30
74	Electrodeposited Co-P alloy and composite coatings: A review of progress towards replacement of conventional hard chromium deposits. <i>Surface and Coatings Technology</i> , 2021, 422, 127564.	2.2	30
75	Editors' Choice "Electrodeposition of Platinum on Titanium Felt in a Rectangular Channel Flow Cell. <i>Journal of the Electrochemical Society</i> , 2017, 164, D57-D66.	1.3	28
76	Quaternary aryl phosphonium salts as corrosion inhibitors for iron in HCl. <i>Journal of Alloys and Compounds</i> , 2018, 765, 812-825.	2.8	28
77	Removal of methylene blue from aqueous solutions using an Fe ²⁺ catalyst and in-situ H ₂ O ₂ generated at gas diffusion cathodes. <i>Electrochimica Acta</i> , 2019, 308, 45-53.	2.6	28
78	Improvements in direct borohydride fuel cells using three-dimensional electrodes. <i>Catalysis Today</i> , 2011, 170, 148-154.	2.2	27
79	Electrically conductive coatings of nickel and polypyrrole/poly(2-methoxyaniline-5-sulfonic acid) on nylon Lycra® textiles. <i>Progress in Organic Coatings</i> , 2013, 76, 1296-1301.	1.9	24
80	Electrolytic removal of cupric ions from dilute liquors using reticulated vitreous carbon cathodes. <i>Journal of Chemical Technology and Biotechnology</i> , 1992, 55, 147-155.	1.6	23
81	Carbon Materials as Positive Electrodes in Bromine-Based Flow Batteries. <i>ChemPlusChem</i> , 2022, 87, e202100441.	1.3	23
82	Titanate nanotubes and nanosheets as a mechanical reinforcement of water-soluble polyamic acid: Experimental and theoretical studies. <i>Composites Part B: Engineering</i> , 2017, 124, 54-63.	5.9	21
83	Inhibition of Polyimide Photodegradation by Incorporation of Titanate Nanotubes into a Composite. <i>Journal of Polymers and the Environment</i> , 2019, 27, 1505-1515.	2.4	21
84	The Importance of Substrate Surface Condition in Controlling the Porosity of Electroless Nickel Deposits. <i>Transactions of the Institute of Metal Finishing</i> , 1998, 76, 149-155.	0.6	20
85	Removal of cupric ions from acidic sulfate solution using reticulated vitreous carbon rotating cylinder electrodes. <i>Journal of Chemical Technology and Biotechnology</i> , 2004, 79, 935-945.	1.6	18
86	Cyclic Voltammetry at Metal Electrodes. <i>Transactions of the Institute of Metal Finishing</i> , 1995, 73, 72-78.	0.6	17
87	Mass-Transfer Measurements at Porous 3D Pt-Ir/Ti Electrodes in a Direct Borohydride Fuel Cell. <i>Journal of the Electrochemical Society</i> , 2018, 165, F198-F206.	1.3	17
88	Mathematical modelling of an enzymatic fuel cell with an air-breathing cathode. <i>Electrochimica Acta</i> , 2013, 112, 386-393.	2.6	16
89	Characterisation of platinum electrodeposits on a titanium micromesh stack in a rectangular channel flow cell. <i>Electrochimica Acta</i> , 2017, 247, 994-1005.	2.6	16
90	X-ray computed micro-tomography of reticulated vitreous carbon. <i>Carbon</i> , 2018, 135, 85-94.	5.4	16

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91	Electrochemical Measurements of Electroless Nickel Coatings on Zincated Aluminium Substrates. Transactions of the Institute of Metal Finishing, 2000, 78, 157-162.	0.6	15
92	The application of reticulated vitreous carbon rotating cylinder electrodes to the removal of cadmium and copper ions from solution. Journal of Chemical Technology and Biotechnology, 2004, 79, 946-953.	1.6	15
93	Impedance spectroscopy studies of the dissolution of ferrous- and zinc-based materials in aqueous timber preservatives. Journal of Applied Electrochemistry, 2008, 38, 1599-1607.	1.5	15
94	The electrochemical reduction of Cr(VI) ions in acid solution at titanium and graphite electrodes. Journal of Environmental Chemical Engineering, 2016, 4, 3610-3617.	3.3	15
95	Single-Walled Carbon Nanotube/Titanate Nanotube Composite Fibers. Advanced Engineering Materials, 2009, 11, B55.	1.6	13
96	Electrospinning of <i>in situ</i> and <i>ex situ</i> synthesized polyimide composites reinforced by titanate nanotubes. Journal of Applied Polymer Science, 2017, 134, .	1.3	13
97	Mass transport control of oxygen reduction at graphite felt with subsequent decolourisation of RB-5 dye in a parallel plate flow reactor. Journal of the Taiwan Institute of Chemical Engineers, 2019, 104, 123-129.	2.7	13
98	Processes associated with ionic current rectification at a 2D-titanate nanosheet deposit on a microhole poly(ethylene terephthalate) substrate. Journal of Solid State Electrochemistry, 2019, 23, 1237-1248.	1.2	12
99	Enhanced mass transport to a reticulated vitreous carbon rotating cylinder electrode using jet flow. Electrochimica Acta, 2006, 51, 2728-2736.	2.6	11
100	Photocatalytic degradation of methylene blue dye on reticulated vitreous carbon decorated with electrophoretically deposited TiO ₂ nanotubes. Diamond and Related Materials, 2020, 109, 108001.	1.8	11
101	Research and Development Techniques 1: Potentiodynamic Studies of Copper Metal Deposition. Transactions of the Institute of Metal Finishing, 2003, 81, B95-B100.	0.6	10
102	Insertion of nanostructured titanates into the pores of an anodised TiO ₂ nanotube array by mechanically stimulated electrophoretic deposition. Journal of Materials Chemistry C, 2017, 5, 3955-3961.	2.7	10
103	Electroanalysis in 2D-TiO ₂ Nanosheet Hosts: Electrolyte and Selectivity Effects in Ferroceneboronic Acid Saccharide Binding. Electroanalysis, 2018, 30, 1303-1310.	1.5	10
104	Experimental and computation assessment of thermomechanical effects during auxetic foam fabrication. Scientific Reports, 2020, 10, 18301.	1.6	10
105	Silver Removal from an X-Ray Fixer Solution by means of a Potentiostatically-Controlled Rotating Cylinder Electrode. Journal of Photographic Science, 1994, 42, 182-192.	0.1	9
106	Synthesis and Properties of Electrodeposited Ni-Co/WS ₂ Nanocomposite Coatings. Coatings, 2019, 9, 148.	1.2	9
107	Composite, multilayer and three-dimensional substrate supported tin-based electrodeposits from methanesulphonic acid. Transactions of the Institute of Metal Finishing, 2016, 94, 152-158.	0.6	8
108	Current distribution in a rectangular flow channel manufactured by 3D printing. AIChE Journal, 2017, 63, 1144-1151.	1.8	8

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109	Review "Carbon Cloth as a Versatile Electrode: Manufacture, Properties, Reaction Environment, and Applications. Journal of the Electrochemical Society, 2022, 169, 053503.	1.3	8
110	Editors' Choice "Critical Review" The Bipolar Trickle Tower Reactor: Concept, Development and Applications. Journal of the Electrochemical Society, 2021, 168, 023503.	1.3	7
111	Enhancement of antibacterial efficiency at silver electrodeposited on coconut shell activated carbon by modulating pulse frequency. Journal of Solid State Electrochemistry, 2018, 22, 749-759.	1.2	6
112	Design, imaging and performance of 3D printed open cell architectures for porous electrodes: quantification of surface area and permeability. Journal of Chemical Technology and Biotechnology, 2021, 96, 1818-1831.	1.6	6
113	The effect of operational parameters on the performance of a bipolar trickle tower reactor. Journal of Chemical Technology and Biotechnology, 2004, 79, 954-960.	1.6	5
114	Electrochemical removal of metal ions from aqueous solution: a student workshop. Journal of Environmental Monitoring, 2005, 7, 943.	2.1	5
115	Photoelectroanalytical Oxygen Detection with Titanate Nanosheet " Platinum Hybrids Immobilised into a Polymer of Intrinsic Microporosity (PIM-1). Electroanalysis, 2020, 32, 2756-2763.	1.5	5
116	Classic Evans' Drop Corrosion Experiment Investigated in Terms of a Tertiary Current and Potential Distribution. Corrosion and Materials Degradation, 2022, 3, 270-280.	1.0	5
117	Selection of oxygen reduction catalysts for secondary tri-electrode zinc-air batteries. Scientific Reports, 2022, 12, 6696.	1.6	4
118	Electrolytic Conductivity and its Measurement. Transactions of the Institute of Metal Finishing, 1992, 70, 45-49.	0.6	3
119	Synchrotron X-Ray Studies of Potentiostatically Formed Phosphate Layers on Steel. Transactions of the Institute of Metal Finishing, 1994, 72, 63-65.	0.6	3
120	Consultancy in the Classroom: Using Industrial Chemistry in a Teaching Exercise. Journal of Chemical Education, 1997, 74, 1426.	1.1	3
121	Extraction of hydrophobic analytes from organic solution into a titanate 2D-nanosheet host: Electroanalytical perspectives. Analytica Chimica Acta: X, 2019, 1, 100001.	2.8	3
122	Redox Flow Batteries for Energy Storage. , 2022, , 394-406.		3
123	pH Measurements. Transactions of the Institute of Metal Finishing, 1992, 70, 148-151.	0.6	2
124	The Comparative Performance of Batteries: The Lead-Acid and the Aluminum-Air Cells. Journal of Chemical Education, 1996, 73, 811.	1.1	2
125	Voltammetric characterisation of diferrocenylborinic acid in organic solution and in aqueous media when immobilised into a titanate nanosheet film. Dalton Transactions, 2019, 48, 11200-11207.	1.6	2
126	Patterning of worm-like soft polydimethylsiloxane structures using a TiO ₂ nanotubular array. Journal of Applied Polymer Science, 2020, 137, 49795.	1.3	2

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127	Frontispiece: The Development of Zn-Ce Hybrid Redox Flow Batteries for Energy Storage and Their Continuing Challenges. ChemPlusChem, 2015, 80, n/a-n/a.	1.3	1
128	The Analysis of Metal Ions in Solution. Transactions of the Institute of Metal Finishing, 1993, 71, 166-170.	0.6	0
129	Spontaneous scrolling of Al ₂ Si ₂ O ₅ (OH) ₄ nanosheets into halloysite nanotubes stimulated by structural doping with GeO ₂ . , 2012, , .		0
130	Frontispiece: A Review of the Iron-Air Secondary Battery for Energy Storage. ChemPlusChem, 2015, 80, n/a-n/a.	1.3	0
131	Zen and electrochemical surface finishing of materials. Transactions of the Institute of Metal Finishing, 2021, 99, 55-60.	0.6	0