

Johan Deconinck

List of Publications by Year in descending order

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122
papers

2,531
citations

172457

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42
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125
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125
docs citations

125
times ranked

1550
citing authors

#	ARTICLE	IF	CITATIONS
1	Capillary water absorption in cracked and uncracked mortar – A comparison between experimental study and finite element analysis. <i>Construction and Building Materials</i> , 2016, 110, 154-162.	7.2	91
2	A temperature dependent multi-ion model for time accurate numerical simulation of the electrochemical machining process. Part I: Theoretical basis. <i>Electrochimica Acta</i> , 2012, 60, 321-328.	5.2	85
3	A new microcell or microreactor for material surface investigations at large current densities. <i>Electrochimica Acta</i> , 2004, 49, 2863-2870.	5.2	76
4	Modeling the Bottom-Up Filling of Through-Silicon vias Through Suppressor Adsorption/Desorption Mechanism. <i>Journal of the Electrochemical Society</i> , 2013, 160, D3051-D3056.	2.9	76
5	Modeling localized aluminum alloy corrosion in chloride solutions under non-equilibrium conditions: Steps toward understanding pitting initiation. <i>Electrochimica Acta</i> , 2012, 63, 169-178.	5.2	70
6	The multi-dimensional upwinding method as a new simulation tool for the analysis of multi-ion electrolytes controlled by diffusion, convection and migration. Part 1. Steady state analysis of a parallel plane flow channel. <i>Journal of Electroanalytical Chemistry</i> , 1996, 404, 15-26.	3.8	68
7	A temperature dependent multi-ion model for time accurate numerical simulation of the electrochemical machining process. Part II: Numerical simulation. <i>Electrochimica Acta</i> , 2012, 69, 120-127.	5.2	68
8	3D electrochemical machining computer simulations. <i>Journal of Materials Processing Technology</i> , 2004, 149, 472-478.	6.3	65
9	Study of the effects of heat removal on the copying accuracy of the electrochemical machining process. <i>Electrochimica Acta</i> , 2011, 56, 5642-5649.	5.2	64
10	Validation of predictive model for galvanic corrosion under thin electrolyte layers: An application to aluminium 2024-CFRP material combination. <i>Corrosion Science</i> , 2014, 78, 89-100.	6.6	63
11	A Numerical Model for Cathodic Protection of Buried Pipes. <i>Corrosion</i> , 1994, 50, 39-49.	1.1	61
12	Atmospheric corrosion modeling. <i>Corrosion Reviews</i> , 2014, 32, 73-100.	2.0	50
13	An integrated modeling approach for atmospheric corrosion in presence of a varying electrolyte film. <i>Electrochimica Acta</i> , 2016, 187, 714-723.	5.2	48
14	Atomistic Insight into the Electrochemical Double Layer of Choline Chloride–Urea Deep Eutectic Solvents: Clustered Interfacial Structuring. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 6296-6304.	4.6	48
15	Finite element calculation of crack propagation in type 304 stainless steel in diluted sulphuric acid solutions. <i>Corrosion Science</i> , 2007, 49, 980-999.	6.6	41
16	Numerical model for predicting the efficiency behaviour during pulsed electrochemical machining of steel in NaNO ₃ . <i>Journal of Applied Electrochemistry</i> , 2006, 36, 1-10.	2.9	40
17	Geometry influence on corrosion in dynamic thin film electrolytes. <i>Electrochimica Acta</i> , 2016, 209, 149-158.	5.2	40
18	A Modified Multiphysics model for Lithium-Ion batteries with a Li _x Ni _{1/3} Mn _{1/3} Co _{1/3} O ₂ electrode. <i>Electrochimica Acta</i> , 2015, 174, 615-624.	5.2	38

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19	Analytical solution for the steady-state diffusion and migration involving multiple reaction ions Application to the identification of Butler-Volmer kinetic parameters for the ferri-/ferrocyanide redox couple. Journal of Electroanalytical Chemistry, 1997, 429, 139-155.	3.8	37
20	Simulation of nano-second pulsed phenomena in electrochemical micromachining processes – Effects of the signal and double layer properties. Electrochimica Acta, 2013, 93, 8-16.	5.2	37
21	A temperature dependent multi-ion model for time accurate numerical simulation of the electrochemical machining process. Part III: Experimental validation. Electrochimica Acta, 2013, 103, 161-173.	5.2	37
22	On The Time Resolution of the Atomic Emission Spectroelectrochemistry Method. Journal of the Electrochemical Society, 2016, 163, C37-C44.	2.9	37
23	Modeling of Underground Cathodic Protection Stray Currents. Corrosion, 1996, 52, 480-488.	1.1	35
24	Multi-ion transport and reaction simulations in turbulent parallel plate flow. Journal of Electroanalytical Chemistry, 2004, 563, 213-220.	3.8	35
25	A General Applicable Model for AC Predictive and Mitigation Techniques for Pipeline Networks Influenced by HV Power Lines. IEEE Transactions on Power Delivery, 2006, 21, 210-217.	4.3	34
26	Quasi-one-dimensional steady-state analysis of multi-ion electrochemical systems at a rotating disc electrode controlled by diffusion, migration, convection and homogeneous reactions. Journal of Electroanalytical Chemistry, 1995, 397, 35-44.	3.8	33
27	Advanced CAD integrated approach for 3D electrochemical machining simulations. Journal of Materials Processing Technology, 2008, 203, 58-71.	6.3	31
28	Time averaged temperature calculations in pulse electrochemical machining, part II: numerical simulation. Journal of Applied Electrochemistry, 2008, 38, 551-560.	2.9	30
29	Stochastic Modeling of Polyethylene Glycol as a Suppressor in Copper Electroplating. Journal of the Electrochemical Society, 2014, 161, D269-D276.	2.9	30
30	Numerical insights into the early stages of nanoscale electrodeposition: nanocluster surface diffusion and aggregative growth. Nanoscale, 2018, 10, 7194-7209.	5.6	30
31	Calculation of Current Distribution and Electrode Shape Change by the Boundary Element Method. Journal of the Electrochemical Society, 1985, 132, 2960-2965.	2.9	29
32	Simulation of the role of vibration on Scanning Vibrating Electrode Technique measurements close to a disc in plane. Electrochimica Acta, 2016, 203, 379-387.	5.2	29
33	Numerical simulation of transient current responses in diluted electrochemical ionic systems. Journal of Electroanalytical Chemistry, 2001, 505, 12-23.	3.8	28
34	A transient multi-ion transport model for galvanized steel corrosion protection. Electrochimica Acta, 2012, 77, 339-347.	5.2	28
35	Influence of the electrolyte film thickness and NaCl concentration on the oxygen reduction current on platinum. Corrosion Science, 2016, 102, 338-347.	6.6	28
36	Laminar and turbulent mass transfer simulations in a parallel plate reactor. Journal of Applied Electrochemistry, 2003, 33, 863-873.	2.9	27

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37	Modelling of hydrogen permeation experiments in iron alloys: Characterization of the accessible parameters – Part I – The entry side. <i>Electrochimica Acta</i> , 2018, 262, 57-65.	5.2	25
38	Modeling of mass and charge transfer in an inverted rotating disk electrode (IRDE) reactor. <i>Journal of Electroanalytical Chemistry</i> , 2008, 622, 44-50.	3.8	24
39	Wafer-scale Cu plating uniformity on thin Cu seed layers. <i>Electrochimica Acta</i> , 2013, 104, 242-248.	5.2	23
40	Numerical steady state analysis of current density distributions in axisymmetrical systems for multi-ion electrolytes: application to the rotating disc electrode. <i>Journal of Electroanalytical Chemistry</i> , 1996, 411, 129-143.	3.8	22
41	Simulation of the Two-Phase Flow Hydrodynamics in an IRDE Reactor. <i>Journal of the Electrochemical Society</i> , 2009, 156, P139.	2.9	22
42	Comparing Modeled and Experimental Accelerated Corrosion Tests on Steel. <i>Journal of the Electrochemical Society</i> , 2017, 164, C554-C562.	2.9	22
43	On the modeling of electrochemical systems with simultaneous gas evolution. Case study: The zinc deposition mechanism. <i>Electrochimica Acta</i> , 2010, 55, 5709-5718.	5.2	21
44	Mathematical modelling of electrode growth. <i>Journal of Applied Electrochemistry</i> , 1994, 24, 212.	2.9	20
45	Time averaged temperature calculations in pulse electrochemical machining. Part I: theoretical basis. <i>Journal of Applied Electrochemistry</i> , 2007, 37, 1345-1355.	2.9	20
46	Simulated and measured response of oxygen SECM-measurements in presence of a corrosion process. <i>Electrochimica Acta</i> , 2014, 146, 556-563.	5.2	20
47	Modelling of hydrogen permeation experiments in iron alloys: Characterization of the accessible parameters – Part II – The exit side. <i>Electrochimica Acta</i> , 2018, 262, 153-161.	5.2	20
48	A user-friendly simulation software tool for 3D ECM. <i>Journal of Materials Processing Technology</i> , 2004, 149, 486-492.	6.3	19
49	Calculation of temperature transients in pulse electrochemical machining (PECM). <i>Journal of Applied Electrochemistry</i> , 2007, 37, 315-324.	2.9	19
50	New model for gas evolving electrodes based on supersaturation. <i>Electrochemistry Communications</i> , 2009, 11, 875-877.	4.7	19
51	Transition between kinetic and diffusion control during the initial stages of electrochemical growth using numerical modelling. <i>Electrochimica Acta</i> , 2017, 258, 662-668.	5.2	19
52	Relaxation Effect on the Onsager Coefficients of Mixed Strong Electrolytes in the Mean Spherical Approximation. <i>Journal of Physical Chemistry B</i> , 2007, 111, 5308-5315.	2.6	18
53	Multi-scale modeling of direct copper plating on resistive non-copper substrates. <i>Electrochimica Acta</i> , 2012, 78, 524-531.	5.2	18
54	Numerical Solution of a Multi-Ion One-Potential Model for Electroosmotic Flow in Two-Dimensional Rectangular Microchannels. <i>Analytical Chemistry</i> , 2002, 74, 4919-4926.	6.5	17

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55	Three-Dimensional Current Density Distribution Simulations for a Resistive Patterned Wafer. <i>Journal of the Electrochemical Society</i> , 2004, 151, D78.	2.9	17
56	Three-Dimensional Boundary Element Method and Finite Element Method Simulations Applied to Stray Current Interference Problems. A Unique Coupling Mechanism That Takes the Best of Both Methods. <i>Corrosion</i> , 2007, 63, 561-576.	1.1	17
57	Bubble nucleation algorithm for the simulation of gas evolving electrodes. <i>Electrochemistry Communications</i> , 2010, 12, 664-667.	4.7	15
58	The Limitation and Optimization of Bottom-Up Growth Mode in Through Silicon Via Electroplating. <i>Journal of the Electrochemical Society</i> , 2015, 162, D599-D604.	2.9	15
59	Corrosion protection of steel cut-edges by hot-dip galvanized Al(Zn,Mg) coatings in 1 wt% NaCl: Part II. Numerical simulations. <i>Materials and Corrosion - Werkstoffe Und Korrosion</i> , 2019, 70, 780-792.	1.5	15
60	Analytical solution for the steady-state diffusion and migration. Application to the identification of Butler-Volmer electrode reaction parameters. <i>Journal of Electroanalytical Chemistry</i> , 1997, 422, 161-167.	3.8	14
61	Determining the Critical Crevice Depth for Iron in a Sodium Acetate-Acetic Acid Buffer Solution. <i>Journal of the Electrochemical Society</i> , 2003, 150, B445.	2.9	14
62	Multi-ion transport and reaction model used to improve the understanding of local current density measurements in presence of concentration gradients around a point current source. <i>Electrochimica Acta</i> , 2014, 127, 45-52.	5.2	14
63	Novel use of a micro-optode in overcoming the negative influence of the amperometric micro-probe on localized corrosion measurements. <i>Corrosion Science</i> , 2015, 95, 1-5.	6.6	14
64	Water distribution at the electrified interface of deep eutectic solvents. <i>Nanoscale Advances</i> , 2019, 1, 2847-2856.	4.6	14
65	Theoretical Comparison of the Band Broadening in Nonretained Electrically and Pressure-Driven Flows through an Ordered Chromatographic Pillar Packing. <i>Analytical Chemistry</i> , 2004, 76, 4030-4037.	6.5	13
66	Numerical study of the influence of the anode position and the electrolyte flow on the deposition of copper on a wire. <i>Electrochimica Acta</i> , 2007, 52, 6584-6591.	5.2	13
67	Experimental study and modelling of anodizing of aluminium in a wall-jet electrode set-up in laminar and turbulent regime. <i>Corrosion Science</i> , 2009, 51, 1482-1489.	6.6	13
68	A Finite Element Simulation of the Electrochemical Growth of a Single Hemispherical Silver Nucleus. <i>Electrochimica Acta</i> , 2016, 197, 307-317.	5.2	13
69	Crack propagation rate modelling for 316SS exposed to PWR-relevant conditions. <i>Journal of Nuclear Materials</i> , 2009, 384, 274-285.	2.7	12
70	Numerical 3-D Simulation of a Cathodic Protection System for a Buried Pipe Segment Surrounded by a Load Relieving U-Shaped Vault. <i>Corrosion</i> , 2003, 59, 1019-1028.	1.1	11
71	A practical way to model convection in non-agitated electrolytes. <i>Electrochemistry Communications</i> , 2013, 37, 20-23.	4.7	11
72	Time-averaged concentration calculations in pulse electrochemical machining, spectral approach. <i>Journal of Applied Electrochemistry</i> , 2009, 39, 2481-2488.	2.9	10

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73	Ion Transport Models for Electroanalytical Simulation. 1. Theoretical Comparison. Journal of Physical Chemistry B, 2009, 113, 3105-3111.	2.6	10
74	Time averaged calculations in pulse electrochemical machining, using a strongly non-linear model. Journal of Applied Electrochemistry, 2010, 40, 1395-1405.	2.9	10
75	A numerical study of the assumptions underlying the calculation of the stationary zone mass transfer coefficient in the general plate height model of chromatography in two-dimensional pillar arrays. Journal of Chromatography A, 2010, 1217, 1942-1949.	3.7	10
76	Multi-Ion and Temperature Dependent Numerical Simulation of Electrochemical Machining. Procedia CIRP, 2013, 6, 475-478.	1.9	10
77	Numerical interpretation to differentiate hydrogen trapping effects in iron alloys in the Devanathan-Stachurski permeation cell. Corrosion Science, 2019, 154, 231-238.	6.6	10
78	Copper deposition on micropatterned electrodes from an industrial acid copper plating bath. Journal of Applied Electrochemistry, 2000, 30, 1-12.	2.9	9
79	Steady-state and pulsed current multi-ion simulations for a thallium electrodeposition process. Journal of Electroanalytical Chemistry, 2002, 531, 61-70.	3.8	9
80	Numerical solution of electro-osmotic flow in a "flow field effect transistor". Electrochimica Acta, 2003, 48, 3307-3312.	5.2	9
81	Modelling the relation between the species retention factor and the "term band broadening in pressure-driven and electrically driven flows through perfectly ordered 2D chromatographic media. Journal of Separation Science, 2009, 32, 4077-4088.	2.5	9
82	Influence of the applied potential and pH on the steady-state behavior of the iron oxide. Electrochimica Acta, 2012, 67, 119-126.	5.2	9
83	Steady-state analysis of the nickel oxide in neutral and weakly alkaline solutions. Electrochimica Acta, 2013, 89, 114-121.	5.2	9
84	Time-Efficient Simulations of Nano-Pulsed Electrochemical Micro- Machining. Procedia CIRP, 2013, 6, 469-474.	1.9	9
85	Identification of bubble evolution mechanisms during AC electrograining. Electrochemistry Communications, 2010, 12, 156-159.	4.7	8
86	Electroforming simulations based on the level set method. EPJ Applied Physics, 2007, 39, 85-94.	0.7	7
87	Mass transfer and current distribution on a metallic wire. Electrochimica Acta, 2008, 53, 6452-6459.	5.2	7
88	The electrochemistry in 316SS crevices exposed to PWR-relevant conditions. Journal of Nuclear Materials, 2009, 385, 517-526.	2.7	7
89	Comment on "Numerical model for predicting the efficiency behaviour during pulsed electrochemical machining of steel in NaNO ₃ " [Van Damme S. et al. (2006) J Appl Electrochem 36(1):1]. Journal of Applied Electrochemistry, 2010, 40, 205-207.	2.9	7
90	A new approach for shape optimization of resistors with complex geometry. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2004, 23, 1062-1069.	0.9	6

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91	A novel pulse shortcut strategy for simulating nano-second pulse electrochemical micro-machining. <i>Journal of Applied Electrochemistry</i> , 2014, 44, 1225-1238.	2.9	6
92	The influence of the capillary size and shape on the readings of the electrochemical microcapillary technique: a parametric study by means of the multi-ion modeling. <i>Electrochimica Acta</i> , 2016, 189, 128-136.	5.2	6
93	Calculation of HVAC inductive coupling using a generalized BEM for Helmholtz equations in unbounded regions. <i>International Journal of Electrical Power and Energy Systems</i> , 2017, 84, 242-251.	5.5	6
94	Optimisation of a cupplater reactor for gold deposition on wafers. <i>Electrochimica Acta</i> , 2001, 47, 91-94.	5.2	5
95	Influence of Ion Properties on the Equilibrium and Transport Properties of Electrolyte Solutions. <i>Journal of Physical Chemistry B</i> , 2006, 110, 1015-1019.	2.6	5
96	Turbulent fluid flow and electrochemical mass transfer in an annular duct with an obstruction. <i>Journal of Applied Electrochemistry</i> , 2009, 39, 2453-2459.	2.9	5
97	Efficient algebraic multigrid for migration–diffusion–convection–reaction systems arising in electrochemical simulations. <i>Journal of Computational Physics</i> , 2010, 229, 7260-7276.	3.8	5
98	Dimension Reduction for Computational Enhancements in Thin Film Electrochemical Modelling. <i>Journal of the Electrochemical Society</i> , 2016, 163, C873-C882.	2.9	5
99	Computer Aided Design (CAD) Based Optimisation of Chromium Plating Processes for Complex Parts. <i>Transactions of the Institute of Metal Finishing</i> , 2004, 82, 133-136.	1.3	4
100	Time averaged concentration calculations in pulse electrochemical machining. <i>Journal of Applied Electrochemistry</i> , 2008, 38, 1577-1582.	2.9	4
101	INFLUENCE OF THE PILLAR SHAPE ON THE BAND BROADENING IN PRESSURE-DRIVEN AND ELECTRO-OSMOSIS-DRIVEN ORDERED 2D POROUS CHROMATOGRAPHIC COLUMNS. <i>International Journal of Computational Methods</i> , 2008, 05, 551-574.	1.3	4
102	A simulation study of steric effects on the anodic dissolution at high current densities. <i>Materials and Corrosion - Werkstoffe Und Korrosion</i> , 2021, 72, 610-619.	1.5	4
103	Transport phenomena in an electrochemical rotating cylinder reactor. <i>WIT Transactions on Engineering Sciences</i> , 2007, , .	0.0	4
104	Eulerian-Lagrangian model for gas-evolving processes based on supersaturation. <i>WIT Transactions on Engineering Sciences</i> , 2009, , .	0.0	4
105	Time averaged temperature calculations in pulse electrochemical machining, spectral approach. <i>Journal of Applied Electrochemistry</i> , 2009, 39, 791-798.	2.9	3
106	Study of Ion Transport Models for Electroanalytical Simulation. Part 2: Experimental Comparison. <i>Journal of Physical Chemistry A</i> , 2009, 113, 4972-4975.	2.5	3
107	IRDE and RDE electrochemical cells evaluation: comparison of electron and mass transfer. <i>WIT Transactions on Engineering Sciences</i> , 2007, , .	0.0	3
108	A New Approach for Solving Mass and Charge Transport in Electrochemical Systems. , 1995, , 245-254.		2

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109	Numerical Investigation of Transient Current Density Distributions for Multi-Ion Electrolytes at a Rotating Disk Electrode. <i>Analytical Chemistry</i> , 2004, 76, 5579-5590.	6.5	2
110	Numerical simulations as a guide for the interpretation of the low frequency behaviour of a silver electrodeposition system. <i>Electrochimica Acta</i> , 2006, 51, 1505-1513.	5.2	2
111	Comment on "Theorems of Electrochemical Mass Transport in Dilute Solutions of Mixtures of Electrolytes Including Weak Electrolytes and Hydrolysis Reactions". <i>Electrochem. Soc.</i> , 152, E282 (2005)]. <i>Journal of the Electrochemical Society</i> , 2006, 153, L24.	2.9	2
112	Numerical Simulation of Mass Transport in Electrochemical Systems Based on the Mean Spherical Approximation. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	1
113	Ultra-short pulse simulation for characterising oxide layer formation on stainless steel during $\hat{1}/4$ ECM. <i>CIRP Journal of Manufacturing Science and Technology</i> , 2020, 31, 370-376.	4.5	1
114	Experimental study and modelling of heat transfer during anodizing in a wall-jet set-up. <i>WIT Transactions on Engineering Sciences</i> , 2007, , .	0.0	1
115	Advanced electrochemical process research. <i>Europhysics News</i> , 2004, 35, 203-205.	0.3	0
116	Aluminium Pitting Corrosion in Acid Solutions as a Method for Controlling Surface Roughness. <i>ECS Meeting Abstracts</i> , 2007, , .	0.0	0
117	Time-dependent numerical model for localised zinc corrosion. , 2011, , .		0
118	Numerical simulation of the cathodic protection of pipeline networks under various stray current interferences. <i>WIT Transactions on State-of-the-art in Science and Engineering</i> , 2005, , 197-224.	0.0	0
119	3D cathodic protection design of ship hulls. <i>WIT Transactions on Engineering Sciences</i> , 2007, , .	0.0	0
120	Optimization of the Current Density Distribution in Electrochemical Reactors. <i>Mathematics in Industry</i> , 2012, , 163-172.	0.3	0
121	Modelling of the Aluminium Alloy AA2024 at the Microscale: Pitting and Intergranular Corrosion. <i>WIT Transactions on State-of-the-art in Science and Engineering</i> , 2012, , 41-57.	0.0	0
122	Modelling of an Aluminium Alloy at the Mesoscale: Crevice Corrosion. <i>WIT Transactions on State-of-the-art in Science and Engineering</i> , 2012, , 77-93.	0.0	0