Johan Deconinck

List of Publications by Citations

119 papers	1,997 citations	26 h-index	36 g-index
125 ext. papers	2,228 ext. citations	4.5 avg, IF	4.74 L-index

#	Paper	IF	Citations
119	A new microcell or microreactor for material surface investigations at large current densities. *Electrochimica Acta*, **2004**, 49, 2863-2870	6.7	72
118	Capillary water absorption in cracked and uncracked mortar A comparison between experimental study and finite element analysis. *Construction and Building Materials*, **2016**, 110, 154-162	6.7	70
117	Modeling the Bottom-Up Filling of Through-Silicon vias Through Suppressor Adsorption/Desorption Mechanism. *Journal of the Electrochemical Society*, **2013**, 160, D3051-D3056	3.9	63
116	A temperature dependent multi-ion model for time accurate numerical simulation of the electrochemical machining process. Part I: Theoretical basis. *Electrochimica Acta*, **2012**, 60, 321-328	6.7	60
115	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. *Journal of Electroanalytical Chemistry*, **1996**, 404, 15-26	4.1	56
114	Modeling localized aluminum alloy corrosion in chloride solutions under non-equilibrium conditions: Steps toward understanding pitting initiation. *Electrochimica Acta*, **2012**, 63, 169-178	6.7	55
113	3D electrochemical machining computer simulations. *Journal of Materials Processing Technology*, **2004**, 149, 472-478	5.3	54
112	A temperature dependent multi-ion model for time accurate numerical simulation of the electrochemical machining process. Part II: Numerical simulation. *Electrochimica Acta*, **2012**, 69, 120-127	6.7	50
111	Validation of predictive model for galvanic corrosion under thin electrolyte layers: An application to aluminium 2024-CFRP material combination. *Corrosion Science*, **2014**, 78, 89-100	6.8	47
110	Study of the effects of heat removal on the copying accuracy of the electrochemical machining process. *Electrochimica Acta*, **2011**, 56, 5642-5649	6.7	47
109	A Numerical Model for Cathodic Protection of Buried Pipes. *Corrosion*, **1994**, 50, 39-49	1.8	47
108	An integrated modeling approach for atmospheric corrosion in presence of a varying electrolyte film. *Electrochimica Acta*, **2016**, 187, 714-723	6.7	35
107	Finite element calculation of crack propagation in type 304 stainless steel in diluted sulphuric acid solutions. *Corrosion Science*, **2007**, 49, 980-999	6.8	34
106	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	4.1	33
105	Multi-ion transport and reaction simulations in turbulent parallel plate flow. *Journal of Electroanalytical Chemistry*, **2004**, 563, 213-220	4.1	33
104	Numerical model for predicting the efficiency behaviour during pulsed electrochemical machining of steel in NaNO3. *Journal of Applied Electrochemistry*, **2006**, 36, 1-10	2.6	32
103	Atmospheric corrosion modeling. *Corrosion Reviews*, **2014**, 32, 73-100	3.2	31

102	Atomistic Insight into the Electrochemical Double Layer of Choline Chloride-Urea Deep Eutectic Solvents: Clustered Interfacial Structuring. *Journal of Physical Chemistry Letters*, **2018**, 9, 6296-6304	6.4	31
101	On The Time Resolution of the Atomic Emission Spectroelectrochemistry Method. *Journal of the Electrochemical Society*, **2016**, 163, C37-C44	3.9	30
100	A Modified Multiphysics model for Lithium-Ion batteries with a LixNi1/3Mn1/3Co1/3O2 electrode. *Electrochimica Acta*, **2015**, 174, 615-624	6.7	29
99	Time averaged temperature calculations in pulse electrochemical machining, part II: numerical simulation. *Journal of Applied Electrochemistry*, **2008**, 38, 551-560	2.6	28
98	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	4.1	28
97	Geometry influence on corrosion in dynamic thin film electrolytes. *Electrochimica Acta*, **2016**, 209, 149-158	6.7	28
96	Simulation of the role of vibration on Scanning Vibrating Electrode Technique measurements close to a disc in plane. *Electrochimica Acta*, **2016**, 203, 379-387	6.7	26
95	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	6.7	26
94	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	26
93	Laminar and turbulent mass transfer simulations in a parallel plate reactor. *Journal of Applied Electrochemistry*, **2003**, 33, 863-873	2.6	26
92	Numerical simulation of transient current responses in diluted electrochemical ionic systems. *Journal of Electroanalytical Chemistry*, **2001**, 505, 12-23	4.1	26
91	Modeling of Underground Cathodic Protection Stray Currents. *Corrosion*, **1996**, 52, 480-488	1.8	26
90	Stochastic Modeling of Polyethylene Glycol as a Suppressor in Copper Electroplating. *Journal of the Electrochemical Society*, **2014**, 161, D269-D276	3.9	25
89	Simulation of nano-second pulsed phenomena in electrochemical micromachining processes Effects of the signal and double layer properties. *Electrochimica Acta*, **2013**, 93, 8-16	6.7	24
88	Advanced CAD integrated approach for 3D electrochemical machining simulations. *Journal of Materials Processing Technology*, **2008**, 203, 58-71	5.3	24
87	Numerical insights into the early stages of nanoscale electrodeposition: nanocluster surface diffusion and aggregative growth. *Nanoscale*, **2018**, 10, 7194-7209	7.7	23
86	Influence of the electrolyte film thickness and NaCl concentration on the oxygen reduction current on platinum. *Corrosion Science*, **2016**, 102, 338-347	6.8	22
85	A transient multi-ion transport model for galvanized steel corrosion protection. *Electrochimica Acta* , **2012**, 77, 339-347	6.7	22

84	Modeling of mass and charge transfer in an inverted rotating disk electrode (IRDE) reactor. *Journal of Electroanalytical Chemistry*, **2008**, 622, 44-50	4.1	21
83	On the modeling of electrochemical systems with simultaneous gas evolution. Case study: The zinc deposition mechanism. *Electrochimica Acta*, **2010**, 55, 5709-5718	6.7	20
82	Simulation of the Two-Phase Flow Hydrodynamics in an IRDE Reactor. *Journal of the Electrochemical Society*, **2009**, 156, P139	3.9	19
81	Time averaged temperature calculations in pulse electrochemical machining. Part I: theoretical basis. *Journal of Applied Electrochemistry*, **2007**, 37, 1345-1355	2.6	19
80	Calculation of Current Distribution and Electrode Shape Change by the Boundary Element Method. *Journal of the Electrochemical Society*, **1985**, 132, 2960-2965	3.9	19
79	Calculation of temperature transients in pulse electrochemical machining (PECM). *Journal of Applied Electrochemistry*, **2007**, 37, 315-324	2.6	18
78	Numerical steady state analysis of current density distributions in axisymmetrical systems for multi-ion electrolytes: application to the rotating disc electrode. *Journal of Electroanalytical Chemistry*, **1996**, 411, 129-143	4.1	18
77	Wafer-scale Cu plating uniformity on thin Cu seed layers. *Electrochimica Acta*, **2013**, 104, 242-248	6.7	17
76	Relaxation effect on the Onsager coefficients of mixed strong electrolytes in the mean spherical approximation. *Journal of Physical Chemistry B*, **2007**, 111, 5308-15	3.4	17
75	New model for gas evolving electrodes based on supersaturation. *Electrochemistry Communications* , **2009**, 11, 875-877	5.1	16
74	A user-friendly simulation software tool for 3D ECM. *Journal of Materials Processing Technology*, **2004**, 149, 486-492	5.3	16
73	Comparing Modeled and Experimental Accelerated Corrosion Tests on Steel. *Journal of the Electrochemical Society*, **2017**, 164, C554-C562	3.9	15
72	Multi-scale modeling of direct copper plating on resistive non-copper substrates. *Electrochimica Acta*, **2012**, 78, 524-531	6.7	15
71	Three-Dimensional Current Density Distribution Simulations for a Resistive Patterned Wafer. *Journal of the Electrochemical Society*, **2004**, 151, D78	3.9	15
70	Modelling of hydrogen permeation experiments in iron alloys: Characterization of the accessible parameters Part I The entry side. *Electrochimica Acta*, **2018**, 262, 57-65	6.7	14
69	Determining the Critical Crevice Depth for Iron in a Sodium Acetate-Acetic Acid Buffer Solution. *Journal of the Electrochemical Society*, **2003**, 150, B445	3.9	14
68	Numerical solution of a multi-ion one-potential model for electroosmotic flow in two-dimensional rectangular microchannels. *Analytical Chemistry*, **2002**, 74, 4919-26	7.8	14
67	The Limitation and Optimization of Bottom-Up Growth Mode in Through Silicon Via Electroplating. *Journal of the Electrochemical Society*, **2015**, 162, D599-D604	3.9	13

66	Modelling of hydrogen permeation experiments in iron alloys: Characterization of the accessible parameters Part II The exit side. *Electrochimica Acta*, **2018**, 262, 153-161	6.7	13
65	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. *Electrochimica Acta*, **2014**, 127, 45-52	6.7	13
64	Theoretical comparison of the band broadening in nonretained electrically and pressure-driven flows through an ordered chromatographic pillar packing. *Analytical Chemistry*, **2004**, 76, 4030-7	7.8	13
63	Mathematical modelling of electrode growth. *Journal of Applied Electrochemistry*, **1994**, 24, 212	2.6	13
62	Water distribution at the electrified interface of deep eutectic solvents. *Nanoscale Advances*, **2019**, 1, 2847-2856	5.1	12
61	Novel use of a micro-optode in overcoming the negative influence of the amperometric micro-probe on localized corrosion measurements. *Corrosion Science*, **2015**, 95, 1-5	6.8	12
60	Simulated and measured response of oxygen SECM-measurements in presence of a corrosion process. *Electrochimica Acta*, **2014**, 146, 556-563	6.7	12
59	Experimental study and modelling of anodizing of aluminium in a wall-jet electrode set-up in laminar and turbulent regime. *Corrosion Science*, **2009**, 51, 1482-1489	6.8	12
58	Bubble nucleation algorithm for the simulation of gas evolving electrodes. *Electrochemistry Communications*, **2010**, 12, 664-667	5.1	12
57	Analytical solution for the steady-state diffusion and migration. Application to the identification of Butler-Volmer electrode reaction parameters. *Journal of Electroanalytical Chemistry*, **1997**, 422, 161-167	4.1	12
56	A practical way to model convection in non-agitated electrolytes. *Electrochemistry Communications*, **2013**, 37, 20-23	5.1	11
55	Numerical study of the influence of the anode position and the electrolyte flow on the deposition of copper on a wire. *Electrochimica Acta*, **2007**, 52, 6584-6591	6.7	11
54	Time-averaged concentration calculations in pulse electrochemical machining, spectral approach. *Journal of Applied Electrochemistry*, **2009**, 39, 2481-2488	2.6	10
53	Ion transport models for electroanalytical simulation. 1. Theoretical comparison. *Journal of Physical Chemistry B*, **2009**, 113, 3105-11	3.4	10
52	A Finite Element Simulation of the Electrochemical Growth of a Single Hemispherical Silver Nucleus. *Electrochimica Acta*, **2016**, 197, 307-317	6.7	9
51	Multi-Ion and Temperature Dependent Numerical Simulation of Electrochemical Machining. *Procedia CIRP*, **2013**, 6, 475-478	1.8	9
50	Transition between kinetic and diffusion control during the initial stages of electrochemical growth using numerical modelling. *Electrochimica Acta*, **2017**, 258, 662-668	6.7	9
49	Crack propagation rate modelling for 316SS exposed to PWR-relevant conditions. *Journal of Nuclear Materials*, **2009**, 384, 274-285	3.3	9

48	Time averaged calculations in pulse electrochemical machining, using a strongly non-linear model. *Journal of Applied Electrochemistry*, **2010**, 40, 1395-1405	2.6	9
47	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, 1942-9	4.5	9
46	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. *Corrosion*, **2007**, 63, 561-576	1.8	9
45	Numerical solution of electro-osmotic flow in a flow field effect transistor. *Electrochimica Acta*, **2003**, 48, 3307-3312	6.7	9
44	Corrosion protection of steel cut-edges by hot-dip galvanized Al(Zn,Mg) coatings in 1 wt% NaCl: Part II. Numerical simulations. *Materials and Corrosion - Werkstoffe Und Korrosion*, **2019**, 70, 780-792	1.6	9
43	Numerical 3-D Simulation of a Cathodic Protection System for a Buried Pipe Segment Surrounded by a Load Relieving U-Shaped Vault. *Corrosion*, **2003**, 59, 1019-1028	1.8	8
42	Influence of the applied potential and pH on the steady-state behavior of the iron oxide. *Electrochimica Acta*, **2012**, 67, 119-126	6.7	7
41	Time-Efficient Simulations of Nano-Pulsed Electrochemical Micro- Machining. *Procedia CIRP*, **2013**, 6, 469-474	1.8	7
40	Modelling the relation between the species retention factor and the C-term band broadening in pressure-driven and electrically driven flows through perfectly ordered 2-D chromatographic media. *Journal of Separation Science*, **2009**, 32, 4077-88	3.4	7
39	Identification of bubble evolution mechanisms during AC electrograining. *Electrochemistry Communications*, **2010**, 12, 156-159	5.1	7
38	Mass transfer and current distribution on a metallic wire. *Electrochimica Acta*, **2008**, 53, 6452-6459	6.7	7
37	Steady-state analysis of the nickel oxide in neutral and weakly alkaline solutions. *Electrochimica Acta*, **2013**, 89, 114-121	6.7	6
36	The electrochemistry in 316SS crevices exposed to PWR-relevant conditions. *Journal of Nuclear Materials*, **2009**, 385, 517-526	3.3	6
35	Electroforming simulations based on the level set method. *EPJ Applied Physics*, **2007**, 39, 85-94	1.1	6
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33	A novel pulse shortcut strategy for simulating nano-second pulse electrochemical micro-machining. *Journal of Applied Electrochemistry*, **2014**, 44, 1225-1238	2.6	5
32	Turbulent fluid flow and electrochemical mass transfer in an annular duct with an obstruction. *Journal of Applied Electrochemistry*, **2009**, 39, 2453-2459	2.6	5
31	Comment on "Numerical model for predicting the efficiency behaviour during pulsed electrochemical machining of steel in NaNO3" [Van Damme S. et al. (2006) J Appl Electrochem 36(1):1]. *Journal of Applied Electrochemistry*, **2010**, 40, 205-207	2.6	5

30	Influence of ion properties on the equilibrium and transport properties of electrolyte solutions. *Journal of Physical Chemistry B*, **2006**, 110, 1015-9	3.4	5
29	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	0.7	5
28	Optimisation of a cupplater reactor for gold deposition on wafers. *Electrochimica Acta*, **2001**, 47, 91-94	6.7	5
27	Copper deposition on micropatterned electrodes from an industrial acid copper plating bath. *Journal of Applied Electrochemistry*, **2000**, 30, 1-12	2.6	5
26	Numerical interpretation to differentiate hydrogen trapping effects in iron alloys in the Devanathan-Stachurski permeation cell. *Corrosion Science*, **2019**, 154, 231-238	6.8	4
25	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. *Electrochimica Acta*, **2016**, 189, 128-136	6.7	4
24	Efficient algebraic multigrid for migration□diffusion□convection□eaction systems arising in electrochemical simulations. *Journal of Computational Physics*, **2010**, 229, 7260-7276	4.1	4
23	INFLUENCE OF THE PILLAR SHAPE ON THE BAND BROADENING IN PRESSURE-DRIVEN AND ELECTRO-OSMOSIS-DRIVEN ORDERED 2D POROUS CHROMATOGRAPHIC COLUMNS. *International Journal of Computational Methods*, **2008**, 05, 551-574	1.1	4
22	Electrode Shape Change. *Lecture Notes in Engineering*, **1992**, 164-220		4
21	Eulerian-Lagrangian model for gas-evolving processes based on supersaturation **2009**,		4
20	Time averaged temperature calculations in pulse electrochemical machining, spectral approach. *Journal of Applied Electrochemistry*, **2009**, 39, 791-798	2.6	3
19	Study of ion transport models for electroanalytical simulation. Part 2: experimental comparison. *Journal of Physical Chemistry A*, **2009**, 113, 4972-5	2.8	3
18	Time averaged concentration calculations in pulse electrochemical machining. *Journal of Applied Electrochemistry*, **2008**, 38, 1577-1582	2.6	3
17	Computer Aided Design (CAD) Based Optimisation of Chromium Plating Processes for Complex Parts. *Transactions of the Institute of Metal Finishing*, **2004**, 82, 133-136	1.3	3
16	Transport phenomena in an electrochemical rotating cylinder reactor. *WIT Transactions on Engineering Sciences*, **2007**,	2	3
15	IRDE and RDE electrochemical cells evaluation: comparison of electron and mass transfer. *WIT Transactions on Engineering Sciences*, **2007**,	2	3
14	Dimension Reduction for Computational Enhancements in Thin Film Electrochemical Modelling. *Journal of the Electrochemical Society*, **2016**, 163, C873-C882	3.9	3
13	Calculation of HVAC inductive coupling using a generalized BEM for Helmholtz equations in unbounded regions. *International Journal of Electrical Power and Energy Systems*, **2017**, 84, 242-251	5.1	2

12	Comment on Theorems of Electrochemical Mass Transport in Dilute Solutions of Mixtures of Electrolytes Including Weak Electrolytes and Hydrolysis Reactions[J. Electrochem. Soc., 152, E282 (2005)]. *Journal of the Electrochemical Society*, **2006**, 153, L24	3.9	2
11	Numerical simulations as a guide for the interpretation of the low frequency behaviour of a silver electrodeposition system. *Electrochimica Acta*, **2006**, 51, 1505-1513	6.7	2
10	Numerical investigation of transient current density distributions for multi-ion electrolytes at a rotating disk electrode. *Analytical Chemistry*, **2004**, 76, 5579-90	7.8	2
9	Corrosion and Its Context in Service Life **2016**, 227-245		2
8	Numerical Simulation of Mass Transport in Electrochemical Systems Based on the Mean Spherical Approximation. *AIP Conference Proceedings*, **2007**,	0	1
7	A New Approach for Solving Mass and Charge Transport in Electrochemical Systems **1995**, 245-254		1
6	A simulation study of steric effects on the anodic dissolution at high current densities. *Materials and Corrosion - Werkstoffe Und Korrosion*, **2021**, 72, 610-619	1.6	1
5	Numerical simulation of the cathodic protection of pipeline networks under various stray current interferences. *WIT Transactions on State-of-the-art in Science and Engineering*, **2005**, 197-224		
4	Optimization of the Current Density Distribution in Electrochemical Reactors. *Mathematics in Industry*, **2012**, 163-172	0.2	
3	Modelling of the Aluminium Alloy AA2024 at the Microscale: Pitting and Intergranular Corrosion. *WIT Transactions on State-of-the-art in Science and Engineering*, **2012**, 41-57		
2	Modelling of an Aluminium Alloy at the Mesoscale: Crevice Corrosion. *WIT Transactions on State-of-the-art in Science and Engineering*, **2012**, 77-93		
1	Ultra-short pulse simulation for characterising oxide layer formation on stainless steel during ECM. *CIRP Journal of Manufacturing Science and Technology*, **2020**, 31, 370-376	3.4	