

# Johan Deconinck

## List of Publications by Year in descending order

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122  
papers

2,531  
citations

172457

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docs citations

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times ranked

1550  
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	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
3	Water distribution at the electrified interface of deep eutectic solvents. <i>Nanoscale Advances</i> , 2019, 1, 2847-2856.	4.6	14
4	Numerical interpretation to differentiate hydrogen trapping effects in iron alloys in the Devanathan-Stachurski permeation cell. <i>Corrosion Science</i> , 2019, 154, 231-238.	6.6	10
5	Corrosion protection of steel cutâ€edges by hotâ€dip galvanized Al(Zn,Mg) coatings in 1â€wt% NaCl: Part II. Numerical simulations. <i>Materials and Corrosion - Werkstoffe Und Korrosion</i> , 2019, 70, 780-792.	1.5	15
6	Modelling of hydrogen permeation experiments in iron alloys: Characterization of the accessible parameters â€“ Part I â€“ The entry side. <i>Electrochimica Acta</i> , 2018, 262, 57-65.	5.2	25
7	Modelling of hydrogen permeation experiments in iron alloys: Characterization of the accessible parameters â€“ Part II â€“ The exit side. <i>Electrochimica Acta</i> , 2018, 262, 153-161.	5.2	20
8	Numerical insights into the early stages of nanoscale electrodeposition: nanocluster surface diffusion and aggregative growth. <i>Nanoscale</i> , 2018, 10, 7194-7209.	5.6	30
9	Atomistic Insight into the Electrochemical Double Layer of Choline Chlorideâ€Urea Deep Eutectic Solvents: Clustered Interfacial Structuring. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 6296-6304.	4.6	48
10	Comparing Modeled and Experimental Accelerated Corrosion Tests on Steel. <i>Journal of the Electrochemical Society</i> , 2017, 164, C554-C562.	2.9	22
11	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
12	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
13	On The Time Resolution of the Atomic Emission Spectroelectrochemistry Method. <i>Journal of the Electrochemical Society</i> , 2016, 163, C37-C44.	2.9	37
14	Dimension Reduction for Computational Enhancements in Thin Film Electrochemical Modelling. <i>Journal of the Electrochemical Society</i> , 2016, 163, C873-C882.	2.9	5
15	Geometry influence on corrosion in dynamic thin film electrolytes. <i>Electrochimica Acta</i> , 2016, 209, 149-158.	5.2	40
16	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
17	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
18	Capillary water absorption in cracked and uncracked mortar â€“ A comparison between experimental study and finite element analysis. <i>Construction and Building Materials</i> , 2016, 110, 154-162.	7.2	91

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19	Simulation of the role of vibration on Scanning Vibrating Electrode Technique measurements close to a disc in plane. <i>Electrochimica Acta</i> , 2016, 203, 379-387.	5.2	29
20	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
21	Influence of the electrolyte film thickness and NaCl concentration on the oxygen reduction current on platinum. <i>Corrosion Science</i> , 2016, 102, 338-347.	6.6	28
22	A Modified Multiphysics model for Lithium-Ion batteries with a $\text{Li}_x\text{Ni}_1/3\text{Mn}_1/3\text{Co}_1/3\text{O}_2$ electrode. <i>Electrochimica Acta</i> , 2015, 174, 615-624.	5.2	38
23	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
24	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
25	Atmospheric corrosion modeling. <i>Corrosion Reviews</i> , 2014, 32, 73-100.	2.0	50
26	Stochastic Modeling of Polyethylene Glycol as a Suppressor in Copper Electroplating. <i>Journal of the Electrochemical Society</i> , 2014, 161, D269-D276.	2.9	30
27	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
28	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
29	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
30	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
31	Steady-state analysis of the nickel oxide in neutral and weakly alkaline solutions. <i>Electrochimica Acta</i> , 2013, 89, 114-121.	5.2	9
32	Time-Efficient Simulations of Nano-Pulsed Electrochemical Micro- Machining. <i>Procedia CIRP</i> , 2013, 6, 469-474.	1.9	9
33	Simulation of nano-second pulsed phenomena in electrochemical micromachining processes – Effects of the signal and double layer properties. <i>Electrochimica Acta</i> , 2013, 93, 8-16.	5.2	37
34	A practical way to model convection in non-agitated electrolytes. <i>Electrochemistry Communications</i> , 2013, 37, 20-23.	4.7	11
35	A temperature dependent multi-ion model for time accurate numerical simulation of the electrochemical machining process. Part III: Experimental validation. <i>Electrochimica Acta</i> , 2013, 103, 161-173.	5.2	37
36	Multi-Ion and Temperature Dependent Numerical Simulation of Electrochemical Machining. <i>Procedia CIRP</i> , 2013, 6, 475-478.	1.9	10

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37	Wafer-scale Cu plating uniformity on thin Cu seed layers. <i>Electrochimica Acta</i> , 2013, 104, 242-248.	5.2	23
38	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
39	Multi-scale modeling of direct copper plating on resistive non-copper substrates. <i>Electrochimica Acta</i> , 2012, 78, 524-531.	5.2	18
40	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
41	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
42	Influence of the applied potential and pH on the steady-state behavior of the iron oxide. <i>Electrochimica Acta</i> , 2012, 67, 119-126.	5.2	9
43	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
44	A transient multi-ion transport model for galvanized steel corrosion protection. <i>Electrochimica Acta</i> , 2012, 77, 339-347.	5.2	28
45	Optimization of the Current Density Distribution in Electrochemical Reactors. <i>Mathematics in Industry</i> , 2012, , 163-172.	0.3	0
46	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
47	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
48	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
49	Time-dependent numerical model for localised zinc corrosion. , 2011, , .		0
50	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
51	Comment on "Numerical model for predicting the efficiency behaviour during pulsed electrochemical machining of steel in NaNO <sub>3</sub> " [Van Damme S. et al. (2006) <i>J Appl Electrochem</i> 36(1):1]. <i>Journal of Applied Electrochemistry</i> , 2010, 40, 205-207.	2.9	7
52	Time averaged calculations in pulse electrochemical machining, using a strongly non-linear model. <i>Journal of Applied Electrochemistry</i> , 2010, 40, 1395-1405.	2.9	10
53	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
54	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. <i>Journal of Chromatography A</i> , 2010, 1217, 1942-1949.	3.7	10

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55	Identification of bubble evolution mechanisms during AC electrograining. <i>Electrochemistry Communications</i> , 2010, 12, 156-159.	4.7	8
56	Bubble nucleation algorithm for the simulation of gas evolving electrodes. <i>Electrochemistry Communications</i> , 2010, 12, 664-667.	4.7	15
57	Modelling the relation between the species retention factor and the C <sub>0</sub> term band broadening in pressure-driven and electrically driven flows through perfectly ordered 2D chromatographic media. <i>Journal of Separation Science</i> , 2009, 32, 4077-4088.	2.5	9
58	Crack propagation rate modelling for 316SS exposed to PWR-relevant conditions. <i>Journal of Nuclear Materials</i> , 2009, 384, 274-285.	2.7	12
59	Time averaged temperature calculations in pulse electrochemical machining, spectral approach. <i>Journal of Applied Electrochemistry</i> , 2009, 39, 791-798.	2.9	3
60	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
61	Time-averaged concentration calculations in pulse electrochemical machining, spectral approach. <i>Journal of Applied Electrochemistry</i> , 2009, 39, 2481-2488.	2.9	10
62	The electrochemistry in 316SS crevices exposed to PWR-relevant conditions. <i>Journal of Nuclear Materials</i> , 2009, 385, 517-526.	2.7	7
63	New model for gas evolving electrodes based on supersaturation. <i>Electrochemistry Communications</i> , 2009, 11, 875-877.	4.7	19
64	Simulation of the Two-Phase Flow Hydrodynamics in an IRDE Reactor. <i>Journal of the Electrochemical Society</i> , 2009, 156, P139.	2.9	22
65	Ion Transport Models for Electroanalytical Simulation. 1. Theoretical Comparison. <i>Journal of Physical Chemistry B</i> , 2009, 113, 3105-3111.	2.6	10
66	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
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	Eulerian-Lagrangian model for gas-evolving processes based on supersaturation. <i>WIT Transactions on Engineering Sciences</i> , 2009, , .	0.0	4
69	Mass transfer and current distribution on a metallic wire. <i>Electrochimica Acta</i> , 2008, 53, 6452-6459.	5.2	7
70	Time averaged temperature calculations in pulse electrochemical machining, part II: numerical simulation. <i>Journal of Applied Electrochemistry</i> , 2008, 38, 551-560.	2.9	30
71	Time averaged concentration calculations in pulse electrochemical machining. <i>Journal of Applied Electrochemistry</i> , 2008, 38, 1577-1582.	2.9	4
72	Advanced CAD integrated approach for 3D electrochemical machining simulations. <i>Journal of Materials Processing Technology</i> , 2008, 203, 58-71.	6.3	31

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73	Modeling of mass and charge transfer in an inverted rotating disk electrode (IRDE) reactor. Journal of Electroanalytical Chemistry, 2008, 622, 44-50.	3.8	24
74	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.	1.3	4
75	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.	1.1	17
76	Electroforming simulations based on the level set method. EPJ Applied Physics, 2007, 39, 85-94.	0.7	7
77	Finite element calculation of crack propagation in type 304 stainless steel in diluted sulphuric acid solutions. Corrosion Science, 2007, 49, 980-999.	6.6	41
78	Relaxation Effect on the Onsager Coefficients of Mixed Strong Electrolytes in the Mean Spherical Approximation. Journal of Physical Chemistry B, 2007, 111, 5308-5315.	2.6	18
79	Aluminium Pitting Corrosion in Acid Solutions as a Method for Controlling Surface Roughness. ECS Meeting Abstracts, 2007, , .	0.0	0
80	Numerical Simulation of Mass Transport in Electrochemical Systems Based on the Mean Spherical Approximation. AIP Conference Proceedings, 2007, , .	0.4	1
81	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.	5.2	13
82	Calculation of temperature transients in pulse electrochemical machining (PECM). Journal of Applied Electrochemistry, 2007, 37, 315-324.	2.9	19
83	Time averaged temperature calculations in pulse electrochemical machining. Part I: theoretical basis. Journal of Applied Electrochemistry, 2007, 37, 1345-1355.	2.9	20
84	Transport phenomena in an electrochemical rotating cylinder reactor. WIT Transactions on Engineering Sciences, 2007, , .	0.0	4
85	IRDE and RDE electrochemical cells evaluation: comparison of electron and mass transfer. WIT Transactions on Engineering Sciences, 2007, , .	0.0	3
86	Experimental study and modelling of heat transfer during anodizing in a wall-jet set-up. WIT Transactions on Engineering Sciences, 2007, , .	0.0	1
87	3D cathodic protection design of ship hulls. WIT Transactions on Engineering Sciences, 2007, , .	0.0	0
88	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
89	Influence of Ion Properties on the Equilibrium and Transport Properties of Electrolyte Solutions. Journal of Physical Chemistry B, 2006, 110, 1015-1019.	2.6	5
90	Numerical simulations as a guide for the interpretation of the low frequency behaviour of a silver electrodeposition system. Electrochimica Acta, 2006, 51, 1505-1513.	5.2	2

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91	Numerical model for predicting the efficiency behaviour during pulsed electrochemical machining of steel in NaNO <sub>3</sub> . Journal of Applied Electrochemistry, 2006, 36, 1-10.	2.9	40
92	Comment on "Theorems of Electrochemical Mass Transport in Dilute Solutions of Mixtures of Electrolytes Including Weak Electrolytes and Hydrolysis Reactions". Electrochem. Soc., 152, E282 (2005). Journal of the Electrochemical Society, 2006, 153, L24.	2.9	2
93	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.	0.0	0
94	Advanced electrochemical process research. Europhysics News, 2004, 35, 203-205.	0.3	0
95	Three-Dimensional Current Density Distribution Simulations for a Resistive Patterned Wafer. Journal of the Electrochemical Society, 2004, 151, D78.	2.9	17
96	A new microcell or microreactor for material surface investigations at large current densities. Electrochimica Acta, 2004, 49, 2863-2870.	5.2	76
97	Multi-ion transport and reaction simulations in turbulent parallel plate flow. Journal of Electroanalytical Chemistry, 2004, 563, 213-220.	3.8	35
98	3D electrochemical machining computer simulations. Journal of Materials Processing Technology, 2004, 149, 472-478.	6.3	65
99	A user-friendly simulation software tool for 3D ECM. Journal of Materials Processing Technology, 2004, 149, 486-492.	6.3	19
100	Numerical Investigation of Transient Current Density Distributions for Multi-Ion Electrolytes at a Rotating Disk Electrode. Analytical Chemistry, 2004, 76, 5579-5590.	6.5	2
101	Theoretical Comparison of the Band Broadening in Nonretained Electrically and Pressure-Driven Flows through an Ordered Chromatographic Pillar Packing. Analytical Chemistry, 2004, 76, 4030-4037.	6.5	13
102	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
103	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	4
104	Laminar and turbulent mass transfer simulations in a parallel plate reactor. Journal of Applied Electrochemistry, 2003, 33, 863-873.	2.9	27
105	Numerical solution of electro-osmotic flow in a "flow field effect transistor". Electrochimica Acta, 2003, 48, 3307-3312.	5.2	9
106	Determining the Critical Crevice Depth for Iron in a Sodium Acetate-Acetic Acid Buffer Solution. Journal of the Electrochemical Society, 2003, 150, B445.	2.9	14
107	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.	1.1	11
108	Numerical Solution of a Multi-Ion One-Potential Model for Electroosmotic Flow in Two-Dimensional Rectangular Microchannels. Analytical Chemistry, 2002, 74, 4919-4926.	6.5	17

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109	Steady-state and pulsed current multi-ion simulations for a thallium electrodeposition process. <i>Journal of Electroanalytical Chemistry</i> , 2002, 531, 61-70.	3.8	9
110	Optimisation of a cupplater reactor for gold deposition on wafers. <i>Electrochimica Acta</i> , 2001, 47, 91-94.	5.2	5
111	Numerical simulation of transient current responses in diluted electrochemical ionic systems. <i>Journal of Electroanalytical Chemistry</i> , 2001, 505, 12-23.	3.8	28
112	Copper deposition on micropatterned electrodes from an industrial acid copper plating bath. <i>Journal of Applied Electrochemistry</i> , 2000, 30, 1-12.	2.9	9
113	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
114	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. <i>Journal of Electroanalytical Chemistry</i> , 1997, 429, 139-155.	3.8	37
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. <i>Journal of Electroanalytical Chemistry</i> , 1996, 404, 15-26.	3.8	68
116	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
117	Modeling of Underground Cathodic Protection Stray Currents. <i>Corrosion</i> , 1996, 52, 480-488.	1.1	35
118	Quasi-one-dimensional steady-state analysis of multi-ion electrochemical systems at a rotating disc electrode controlled by diffusion, migration, convection and homogeneous reactions. <i>Journal of Electroanalytical Chemistry</i> , 1995, 397, 35-44.	3.8	33
119	A New Approach for Solving Mass and Charge Transport in Electrochemical Systems. , 1995, , 245-254.		2
120	Mathematical modelling of electrode growth. <i>Journal of Applied Electrochemistry</i> , 1994, 24, 212.	2.9	20
121	A Numerical Model for Cathodic Protection of Buried Pipes. <i>Corrosion</i> , 1994, 50, 39-49.	1.1	61
122	Calculation of Current Distribution and Electrode Shape Change by the Boundary Element Method. <i>Journal of the Electrochemical Society</i> , 1985, 132, 2960-2965.	2.9	29