Ivonne Sgura

List of Publications by Year
in descending order

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71 papers	1,770 citations	448610 19 h-index	325983 40 g-index
72 all docs	72 docs citations	72 times ranked	1544 citing authors

#	Article	IF	Citations
1	Insight into the Cycling Behaviour of Metal Anodes, Enabled by Xâ€ray Tomography and Mathematical Modelling. ChemElectroChem, 2022, 9, .	1.7	4
2	X-ray imaging and micro-spectroscopy unravel the role of zincate and zinc oxide in the cycling of zinc anodes in mildly acidic aqueous electrolytes. Journal of Power Sources, 2022, 524, 231063.	4.0	5
3	Quantifying and rationalizing polarization curves of Zn-air fuel-cells: A simple enabling contribution to device-scale analysis and monitoring. Electrochimica Acta, 2022, 425, 140712.	2.6	1
4	Bulk-surface virtual element method for systems of PDEs in two-space dimensions. Numerische Mathematik, 2021, 147, 305-348.	0.9	11
5	Turing-Hopf patterns in a morphochemical model for electrodeposition with cross-diffusion. Applications in Engineering Science, 2021, 5, 100034.	0.5	2
6	Fourier analysis of an electrochemical phase formation model enables the rationalization of zinc-anode battery dynamics. Applications in Engineering Science, 2021, 5, 100033.	0.5	0
7	Bifurcations in Twinkling Patterns for the Lengyelâ€“Epstein Reactionâ€“Diffusion Model. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2021, 31, 2150164.	0.7	2
8	Model-reduction techniques for PDE models with Turing type electrochemical phase formation dynamics. Applications in Engineering Science, 2021, 8, 100074.	0.5	2
9	Matrix-oriented discretization methods for reactionâ€“diffusion PDEs: Comparisons and applications. Computers and Mathematics With Applications, 2020, 79, 2067-2085.	1.4	15
10	Parameter estimation for a morphochemical reaction-diffusion model of electrochemical pattern formation. Inverse Problems in Science and Engineering, 2019, 27, 618-647.	1.2	21
11	Spiral waves on the sphere for an alloy electrodeposition model. Communications in Nonlinear Science and Numerical Simulation, 2019, 79, 104930.	1.7	11
12	Preserving invariance properties of reactionâ€“diffusion systems on stationary surfaces. IMA Journal of Numerical Analysis, 2019, 39, 235-270.	1.5	10
13	Cross-diffusion effects on a morphochemical model for electrodeposition. Applied Mathematical Modelling, 2018, 57, 492-513.	2.2	16
14	Virtual Element Method for the Laplace-Beltrami equation on surfaces. ESAIM: Mathematical Modelling and Numerical Analysis, 2018, 52, 965-993.	0.8	25
15	Numerical Preservation of Velocity Induced Invariant Regions for Reactionâ€“Diffusion Systems on Evolving Surfaces. Journal of Scientific Computing, 2018, 77, 971-1000.	1.1	9
16	Depth-Dependent Scanning Photoelectron Microspectroscopy Unravels the Mechanism of Dynamic Pattern Formation in Alloy Electrodeposition. Journal of Physical Chemistry C, 2018, 122, 15996-16007.	1.5	7
17	Turing pattern formation on the sphere for a morphochemical reaction-diffusion model for electrodeposition. Communications in Nonlinear Science and Numerical Simulation, 2017, 48, 484-508.	1.7	43
18	Methodical fitting for mathematical models of rubber-like materials. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20160811.	1.0	95

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19	Lumped finite elements for reactionâ€“cross-diffusion systems on stationary surfaces. Computers and Mathematics With Applications, 2017, 74, 3008-3023.	1.4	15
20	XRF map identification problems based on a PDE electrodeposition model. Journal Physics D: Applied Physics, 2017, 50, 154002.	1.3	8
21	Parameter identification in ODE models with oscillatory dynamics: a Fourier regularization approach. Inverse Problems, 2017, 33, 124009.	1.0	7
22	Devising efficient numerical methods for oscillating patterns in reactionâ€“diffusion systems. Journal of Computational and Applied Mathematics, 2016, 292, 674-693.	1.1	16
23	Highâ€lateral resolution Xâ€ray fluorescence microspectroscopy and dynamic mathematical modelling as tools for the study of electrodeposited electrocatalysts. X-Ray Spectrometry, 2015, 44, 263-275.	0.9	22
24	Intermetallics as key to spiral formation in Inâ€“Co electrodeposition. A study based on photoelectron microspectroscopy, mathematical modelling and numerical approximations. Journal Physics D: Applied Physics, 2015, 48, 395502.	1.3	14
25	Spatio-temporal organization in a morphochemical electrodeposition model: Hopf and Turing instabilities and their interplay. European Journal of Applied Mathematics, 2015, 26, 143-173.	1.4	38
26	Weakly nonlinear analysis of Turing patterns in a morphochemical model for metal growth. Computers and Mathematics With Applications, 2015, 70, 1948-1969.	1.4	36
27	Electrodeposition of a Mnâ€“Cuâ€“ZnO Hybrid Material for Supercapacitors: A Soft Xâ€ray Fluorescence and Absorption Microspectroscopy Study. ChemElectroChem, 2014, 1, 392-399.	1.7	4
28	Straightening wrinkles. Journal of the Mechanics and Physics of Solids, 2014, 65, 1-11.	2.3	18
29	Spatio-Temporal Organization in a Morphochemical Electrodeposition Model: Analysis and Numerical Simulation of Spiral Waves. Acta Applicandae Mathematicae, 2014, 132, 377-389.	0.5	21
30	Parametric Resonance in a Mesoscopic Discrete DNA Model. Acta Applicandae Mathematicae, 2014, 132, 391-404.	0.5	2
31	Pulseâ€Plating of Mnâ€“Cuâ€“ZnO for Supercapacitors: A Study Based on Soft Xâ€ray Fluorescence and Absorption Microspectroscopy. ChemElectroChem, 2014, 1, 1161-1172.	1.7	2
32	A finite difference approach for the numerical solution of non-smooth problems for Boundary Value ODEs. Mathematics and Computers in Simulation, 2014, 95, 146-162.	2.4	2
33	Spatio-temporal organization in alloy electrodeposition: a morphochemical mathematical model and its experimental validation. Journal of Solid State Electrochemistry, 2013, 17, 467-479.	1.2	48
34	Fabrication and testing of an electrochemical microcell for in situ soft X-ray microspectroscopy measurements. Journal of Physics: Conference Series, 2013, 425, 182010.	0.3	9
35	Numerical approximation of oscillating Turing patterns in a reaction-diffusion model for electrochemical material growth. AIP Conference Proceedings, 2012, , .	0.3	9
36	Coupling of Morphology and Chemistry Leads to Morphogenesis in Electrochemical Metal Growth: A Review of the Reaction-Diffusion Approach. Acta Applicandae Mathematicae, 2012, 122, 53.	0.5	25

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37	Numerical approximation of Turing patterns in electrodeposition by ADI methods. Journal of Computational and Applied Mathematics, 2012, 236, 4132-4147.	1.1	33
38	Phenomenological Modeling of DNA Overstretching. Journal of Nonlinear Mathematical Physics, 2011, 18, 411.	0.8	3
39	Numerical modelling of MCFC cathode degradation in terms of morphological variations. International Journal of Hydrogen Energy, 2011, 36, 10403-10413.	3.8	16
40	Travelling waves in a reaction-diffusion model for electrodeposition. Mathematics and Computers in Simulation, 2011, 81, 1027-1044.	2.4	17
41	Cathodic chloride extraction treatment of a late bronze-age artifact affected by bronze disease in room-temperature ionic-liquid 1-ethyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide (EMI-TFSI). Journal of Solid State Electrochemistry, 2010, 14, 479-494.	1.2	12
42	Metallic Plate Corrosion and Uptake of Corrosion Products by Nafion in Polymer Electrolyte Membrane Fuel Cells. ChemSusChem, 2010, 3, 846-850.	3.6	27
43	Morphological spatial patterns in a reaction diffusion model for metal growth. Mathematical Biosciences and Engineering, 2010, 7, 237-258.	1.0	19
44	A simple model of nonlinear viscoelasticity taking into account stress relaxation. Acta Mechanica, 2009, 204, 21-36.	1.1	16
45	Inhomogeneous shear of orthotropic incompressible non-linearly elastic solids: Singular solutions and biomechanical interpretation. International Journal of Engineering Science, 2009, 47, 1170-1181.	2.7	11
46	An in Situ Synchrotron-Based Soft X-ray Microscopy Investigation of Ni Electrodeposition in a Thin-Layer Cell. Journal of Physical Chemistry C, 2009, 113, 9783-9787.	1.5	38
47	A Mathematical Model for the Corrosion of Metallic Bipolar Plates in PEM Fuel Cells: Numerical and Experimental Issues. SIAM Journal on Applied Mathematics, 2009, 70, 579-599.	0.8	8
48	Investigation into dynamics of Au electrodeposition based on analysis of SERS spectral time series. Transactions of the Institute of Metal Finishing, 2009, 87, 193-200.	0.6	16
49	A class of mathematical models for alternated-current electrochemical measurements accounting for non-linear effects. Nonlinear Analysis: Real World Applications, 2008, 9, 412-429.	0.9	11
50	A computational approach to morphological control in electrodeposition by molecular targeting. Computational Materials Science, 2008, 42, 394-406.	1.4	2
51	Turing Instability in an Electrodeposition Morphogenesis Model: An Analytical, Numerical and Experimental Study. AIP Conference Proceedings, 2007, , .	0.3	2
52	Computational aspects of Worm-Like-Chain interpolation formulas. Computers and Mathematics With Applications, 2007, 53, 276-286.	1.4	15
53	High order generalized upwind schemes and numerical solution of singular perturbation problems. BIT Numerical Mathematics, 2007, 47, 241-257.	1.0	18
54	The rectilinear shear of fiber-reinforced incompressible non-linearly elastic solids. International Journal of Non-Linear Mechanics, 2007, 42, 342-354.	1.4	25

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55	The relevance of nonlinear stacking interactions in simple models of double-stranded DNA. Journal of the Royal Society Interface, 2006, 3, 655-667.	1.5	40
56	On worm-like chain models within the three-dimensional continuum mechanics framework. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2006, 462, 749-768.	1.0	60
57	A non-linear AC spectrometry study of the electrodeposition of Cu from acidic sulphate solutions in the presence of PEG. Journal of Applied Electrochemistry, 2006, 36, 983-989.	1.5	16
58	High-order finite difference schemes for the solution of second-order BVPs. Journal of Computational and Applied Mathematics, 2005, 176, 59-76.	1.1	34
59	Numerical issues related to the modelling of electrochemical impedance data by non-linear least-squares. International Journal of Non-Linear Mechanics, 2005, 40, 557-570.	1.4	31
60	High Order Finite Difference Schemes for the Solution of Elliptic PDEs. Lecture Notes in Computer Science, 2004, , 1-6.	1.0	1
61	On the observation of inductive high-frequency impedance behaviour during the electrodeposition of Auâ€“Sn alloys. Journal of Applied Electrochemistry, 2004, 34, 277-281.	1.5	11
62	Fitting hyperelastic models to experimental data. Computational Mechanics, 2004, 34, 484-502.	2.2	579
63	Gradient flow methods for matrix completion with prescribed eigenvalues. Linear Algebra and Its Applications, 2004, 379, 85-112.	0.4	18
64	Centrosymmetric isospectral flows and some inverse eigenvalue problems. Linear Algebra and Its Applications, 2003, 366, 199-214.	0.4	6
65	On robust matrix completion with prescribed eigenvalues. Future Generation Computer Systems, 2003, 19, 1139-1153.	4.9	1
66	A Two-Point Boundary-Value Problem for the Axial Shear of Hardening Isotropic Incompressible Nonlinearly Elastic Materials. SIAM Journal on Applied Mathematics, 2002, 62, 1712-1727.	0.8	19
67	Numerical approximation of nonlinear BVPs by means of BVMs. Applied Numerical Mathematics, 2002, 42, 337-352.	1.2	17
68	Uniform air velocity field for a bioventing system design: some numerical results. International Journal of Engineering Science, 2002, 40, 1199-1210.	2.7	17
69	Isospectral flows and the inverse eigenvalue problem for Toeplitz matrices. Journal of Computational and Applied Mathematics, 1999, 110, 25-43.	1.1	5
70	A diffusive-convective model for the dynamics of population-toxicant interactions: some analytical and numerical results. Mathematical Biosciences, 1999, 157, 37-64.	0.9	37
71	Prediction of Morphological Properties of Smart-Coatings for Cr Replacement, Based on Mathematical Modelling. Advanced Materials Research, 0, 138, 93-106.	0.3	14