Gerd Mutschke

List of Publications by Year
in descending order

49 papers	1,261 citations	279798 23 h-index	377865 34 g-index
50 all docs	50 docs citations	50 times ranked	710 citing authors

#	Article	IF	Citations
1	Experiments on cylinder wake stabilization in an electrolyte solution by means of electromagnetic forces localized on the cylinder surface. Experimental Thermal and Fluid Science, 1998, 16, 84-91.	2.7	90
2	On the action of magnetic gradient forces in micro-structured copper deposition. Electrochimica Acta, 2010, 55, 9060-9066.	5.2	80
3	Marangoni convection at electrogenerated hydrogen bubbles. Physical Chemistry Chemical Physics, 2018, 20, 11542-11548.	2.8	71
4	A Finite-Time Thermodynamics of Unsteady Fluid Flows. Journal of Non-Equilibrium Thermodynamics, 2008, 33, .	4.2	53
5	Control of Flow Separation Using Electromagnetic Forces. Flow, Turbulence and Combustion, 2003, 71, 5-17.	2.6	52
6	Oscillating Hydrogen Bubbles at Pt Microelectrodes. Physical Review Letters, 2019, 123, 214503.	7.8	45
7	Thermocapillary convection during hydrogen evolution at microelectrodes. Electrochimica Acta, 2019, 297, 929-940.	5.2	45
8	The scenario of three-dimensional instabilities of the cylinder wake in an external magnetic field: A linear stability analysis. Physics of Fluids, 2001, 13, 723-734.	4.0	44
9	On the Electrolyte Convection around a Hydrogen Bubble Evolving at a Microelectrode under the Influence of a Magnetic Field. Journal of the Electrochemical Society, 2016, 163, E248-E257.	2.9	44
10	Separation control at hydrofoils using Lorentz forces. European Journal of Mechanics, B/Fluids, 2006, 25, 137-152.	2.5	43
11	Cylinder wake control by magnetic fields in liquid metal flows. Experimental Thermal and Fluid Science, 1998, 16, 92-99.	2.7	42
12	On the 3D character of the magnetohydrodynamic effect during metal electrodeposition in cuboid cells. Electrochemistry Communications, 2008, 10, 597-601.	4.7	40
13	Structured electrodeposition in magnetic gradient fields. European Physical Journal: Special Topics, 2013, 220, 287-302.	2.6	39
14	Two- and three-dimensional instabilities of the cylinder wake in an aligned magnetic field. Physics of Fluids, 1997, 9, 3114-3116.	4.0	36
15	Magnetic field effects on electrochemical metal depositions. Science and Technology of Advanced Materials, 2008, 9, 024208.	6.1	36
16	Studies on the patterning effect of copper deposits in magnetic gradient fields. Electrochimica Acta, 2010, 56, 297-304.	5.2	35
17	Lorentz-force-driven convection during copper magnetoelectrolysis in the presence of a supporting buoyancy force. Electrochimica Acta, 2012, 69, 209-219.	5.2	32
18	Slow relaxation and phase space properties of a conservative system with many degrees of freedom. Physical Review E, 1994, 49, 5018-5024.	2.1	30

#	Article	IF	Citations
19	How to obtain structured metal deposits from diamagnetic ions in magnetic gradient fields?. Electrochemistry Communications, 2011, 13, 946-950.	4.7	29
20	Clarifying the Mechanism of Reverse Structuring during Electrodeposition in Magnetic Gradient Fields. Analytical Chemistry, 2012, 84, 2328-2334.	6.5	29
21	The thermocapillary effect on gas bubbles growing on electrodes of different sizes. Electrochimica Acta, 2020, 353, 136461.	5.2	28
22	Growth and detachment of single hydrogen bubbles in a magnetohydrodynamic shear flow. Physical Review Fluids, 2017, 2, .	2.5	28
23	On the stability of the boundary layer subject to a wall-parallel Lorentz force. Physics of Fluids, 2006, 18, 098103.	4.0	25
24	Magnetic-field-assisted electrodeposition of metal to obtain conically structured ferromagnetic layers. Electrochimica Acta, 2021, 365, 137374.	5.2	23
25	Dynamics of single hydrogen bubbles at Pt microelectrodes in microgravity. Physical Chemistry Chemical Physics, 2021, 23, 11818-11830.	2.8	20
26	Comment on â€œMagnetic Structuring of Electrodepositsâ€• Physical Review Letters, 2012, 109, 229401; author reply 229402.	7.8	19
27	Mass transfer and electrolyte flow during electrodeposition on a conically shaped electrode under the influence of a magnetic field. Journal of Electroanalytical Chemistry, 2019, 842, 203-213.	3.8	18
28	Three-dimensional linear stability analysis of lid-driven magnetohydrodynamic cavity flow. Physics of Fluids, 2003, 15, 2141-2151.	4.0	17
29	On the origin of horizontal counter-rotating electrolyte flow during copper magnetoelectrolysis. Electrochimica Acta, 2010, 55, 1543-1547.	5.2	17
30	Magnetic field effects on the mass transport at small electrodes studied by voltammetry and magnetohydrodynamic impedance measurements. Electrochimica Acta, 2010, 56, 133-138.	5.2	16
31	On the homogenization of the thickness of Cu deposits by means of MHD convection within small dimension cells. Electrochemistry Communications, 2013, 36, 80-83.	4.7	15
32	On the prospects of magnetic-field-assisted electrodeposition of nano-structured ferromagnetic layers. Electrochimica Acta, 2022, 420, 140422.	5.2	15
33	Numerical simulation of the onset of mass transfer and convection in copper electrolysis subjected to a magnetic field. Russian Journal of Electrochemistry, 2012, 48, 682-691.	0.9	13
34	Experiments on the magnetic enrichment of rare-earth metal ions in aqueous solutions in a microflow device. Journal of Flow Chemistry, 2019, 9, 175-185.	1.9	11
35	Experimental and numerical investigations of Niâ€“Coâ€“SiO2 alloy films deposited by magnetic-field-assisted jet plating. Surface and Coatings Technology, 2021, 423, 127583.	4.8	11
36	Combining magnetic forces for contactless manipulation of fluids in microelectrode-microfluidic systems. Scientific Reports, 2019, 9, 5103.	3.3	10

#	Article	IF	Citations
37	Interplay of the Open Circuit Potential-Relaxation and the Dissolution Behavior of a Single H2Bubble Generated at a Pt Microelectrode. Journal of Physical Chemistry C, 2016, 120, 15137-15146.	3.1	9
38	Kolmogorov-Sinai entropy and Lyapunov spectrum of a one-dimensional Î¦4-lattice model. Physica D: Nonlinear Phenomena, 1993, 69, 302-308.	2.8	8
39	Tollmien--Schlichting wave damping by a streamwise oscillating Lorentz force. Magnetohydrodynamics, 2008, 44, 205-222.	0.3	8
40	On the electrodeposition of conically nano-structured nickel layers assisted by a capping agent. Journal of Electroanalytical Chemistry, 2022, 904, 115935.	3.8	7
41	On Three-Dimensional Magnetic Field Effects during Metal Deposition in Cuboid Cells. ECS Transactions, 2008, 13, 9-13.	0.5	5
42	Oscillatory Copper Deposition on Conical Iron Electrodes in a Nonuniform Magnetic Field. Magnetochemistry, 2021, 7, 46.	2.4	5
43	Erratum to the article â€œA Finite-Time Thermodynamics of Unsteady Fluid Flowsâ€• Journal of Non-Equilibrium Thermodynamics, 2008, 33, .	4.2	4
44	Oscillatory surface deformation of paramagnetic rare-earth solutions driven by an inhomogeneous magnetic field. Physical Review E, 2020, 101, 062601.	2.1	4
45	Numerical simulation of the mass transfer of magnetic species at electrodes exposed to small-scale gradients of the magnetic field. Magnetohydrodynamics, 2015, 51, 369-374.	0.3	3
46	Numerical simulation of mass transfer and convection near a hydrogen bubble during water electrolysis in a magnetic field. Magnetohydrodynamics, 2017, 53, 193-200.	0.3	3
47	Pulse Reverse Plating of Copper Micro-Structures in Magnetic Gradient Fields. Magnetochemistry, 2022, 8, 66.	2.4	3
48	Electromagnetic Control of Separation at Hydrofoils. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2009, , 563-573.	0.2	1
49	Magnetic Field Assisted Electrodeposition of Metal on Conically Structured Electrodes. ECS Meeting Abstracts, 2020, MA2020-02, 1477-1477.	0.0	0