Markus Valtiner

List of Publications by Year
in descending order

83 papers	2,835 citations	236833 25 h-index	182361 51 g-index
84 all docs	84 docs citations	84 times ranked	3440 citing authors

#	Article	IF	Citations
1	Ionic liquids behave as dilute electrolyte solutions. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9674-9679.	3.3	345
2	Long range electrostatic forces in ionic liquids. Chemical Communications, 2017, 53, 1214-1224.	2.2	285
3	Long-range electrostatic screening in ionic liquids. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7432-7437.	3.3	214
4	Developing a General Interaction Potential for Hydrophobic and Hydrophilic Interactions. Langmuir, 2015, 31, 2051-2064.	1.6	188
5	Stability of Phosphonic Acid Self-Assembled Monolayers on Amorphous and Single-Crystalline Aluminum Oxide Surfaces in Aqueous Solution. Langmuir, 2010, 26, 156-164.	1.6	130
6	Temperature Stabilized Surface Reconstructions at Polar ZnO(0001). Physical Review Letters, 2009, 103, 065502.	2.9	118
7	The Electrochemical Surface Forces Apparatus: The Effect of Surface Roughness, Electrostatic Surface Potentials, and Anodic Oxide Growth on Interaction Forces, and Friction between Dissimilar Surfaces in Aqueous Solutions. Langmuir, 2012, 28, 13080-13093.	1.6	108
8	Characterizing the Influence of Water on Charging and Layering at Electrified Ionicâ€Liquid/Solid Interfaces. Advanced Materials Interfaces, 2015, 2, 1500159.	1.9	93
9	Stabilization and Acidic Dissolution Mechanism of Single-Crystalline ZnO(0001) Surfaces in Electrolytes Studied by In-Situ AFM Imaging and Ex-Situ LEED. Langmuir, 2008, 24, 5350-5358.	1.6	89
10	Effect of Interfacial Ion Structuring on Range and Magnitude of Electric Double Layer, Hydration, and Adhesive Interactions between Mica Surfaces in 0.05â€“3 M Li⁺ and Cs⁺ Electrolyte Solutions. Langmuir, 2014, 30, 4322-4332.	1.6	79
11	Pressure solution â€“ The importance of the electrochemical surface potentials. Geochimica Et Cosmochimica Acta, 2011, 75, 6882-6892.	1.6	75
12	Effect of Surface Roughness and Electrostatic Surface Potentials on Forces Between Dissimilar Surfaces in Aqueous Solution. Advanced Materials, 2011, 23, 2294-2299.	11.1	61
13	Hydrogen adsorption on polar ZnO(0001)-Zn: Extending equilibrium surface phase diagrams to kinetically stabilized structures. Physical Review B, 2010, 82, .	1.1	58
14	Preparation and characterisation of hydroxide stabilised ZnO(0001)â€“Znâ€“OH surfaces. Physical Chemistry Chemical Physics, 2007, 9, 2406-2412.	1.3	52
15	Direct and quantitative AFM measurements of the concentration and temperature dependence of the hydrophobic force law at nanoscopic contacts. Journal of Colloid and Interface Science, 2015, 446, 244-251.	5.0	50
16	Hydrophobic Forces, Electrostatic Steering, and Acidâ€“Base Bridging between Atomically Smooth Self-Assembled Monolayers and End-Functionalized PEGolated Lipid Bilayers. Journal of the American Chemical Society, 2012, 134, 1746-1753.	6.6	47
17	Resolving Nonâ€Specific and Specific Adhesive Interactions of Catechols at Solid/Liquid Interfaces at the Molecular Scale. Angewandte Chemie - International Edition, 2016, 55, 9524-9528.	7.2	43
18	Reply to Perkin et al.: Experimental observations demonstrate that ionic liquids form both bound (Stern) and diffuse electric double layers. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E4122.	3.3	40

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19	Deciphering the scaling of single-molecule interactions using Jarzynskiâ€™s equality. Nature Communications, 2014, 5, 5539.	5.8	38
20	Photocorrosion of ZnO Single Crystals during Electrochemical Water Splitting. ACS Applied Materials & Interfaces, 2020, 12, 51530-51536.	4.0	38
21	Unraveling Hydrophobic Interactions at the Molecular Scale Using Force Spectroscopy and Molecular Dynamics Simulations. ACS Nano, 2017, 11, 2586-2597.	7.3	37
22	Self-localization of polyacrylic acid molecules on polar ZnO(0001)â€“Zn surfaces. Physical Chemistry Chemical Physics, 2011, 13, 12959.	1.3	30
23	Lithium-ion battery electrolyte mobility at nano-confined graphene interfaces. Nature Communications, 2016, 7, 12693.	5.8	26
24	In Situ Mechanical Analysis of the Nanoscopic Solid Electrolyte Interphase on Anodes of Liâ€Ion Batteries. Advanced Science, 2019, 6, 1900190.	5.6	26
25	Influence of Molecular Dipole Orientations on Long-Range Exponential Interaction Forces at Hydrophobic Contacts in Aqueous Solutions. ACS Nano, 2014, 8, 10870-10877.	7.3	25
26	Angstrom-Resolved Real-Time Dissection of Electrochemically Active Noble Metal Interfaces. ACS Nano, 2014, 8, 5979-5987.	7.3	24
27	Deposition of Ag nanoparticles on fluoroalkylsilane self-assembled monolayers with varying chain length. Surface Science, 2008, 602, 3750-3759.	0.8	23
28	Single Molecules as Sensors for Local Molecular Adhesion Studies. Langmuir, 2010, 26, 815-820.	1.6	23
29	Structure and Dynamics of Confined Liquids: Challenges and Perspectives for the X-ray Surface Forces Apparatus. Langmuir, 2019, 35, 16679-16692.	1.6	23
30	Optimizing multiple beam interferometry in the surface forces apparatus: Novel optics, reflection mode modeling, metal layer thicknesses, birefringence, and rotation of anisotropic layers. Review of Scientific Instruments, 2019, 90, 043908.	0.6	23
31	Starâ€Shaped Crystallographic Cracking of Localized Nanoporous Defects. Advanced Materials, 2015, 27, 4877-4882.	11.1	21
32	Effect of Concentration on the Interfacial and Bulk Structure of Ionic Liquids in Aqueous Solution. Langmuir, 2018, 34, 2637-2646.	1.6	18
33	Comparative investigations on a series of [hexakis(1-(tetrazol-1-yl)alkane-N4)iron(II)] bis(tetrafluoroborate) spin crossover complexes: Methyl- to butyl-substituted species. Inorganica Chimica Acta, 2008, 361, 1291-1297.	1.2	17
34	Anion Layering and Steric Hydration Repulsion on Positively Charged Surfaces in Aqueous Electrolytes. ChemPhysChem, 2017, 18, 3056-3065.	1.0	17
35	Interactions and visualization of bio-mimetic membrane detachment at smooth and nano-rough gold electrode surfaces. Soft Matter, 2013, 9, 5231.	1.2	16
36	Scaling from Single Molecule to Macroscopic Adhesion at Polymer/Metal Interfaces. Langmuir, 2015, 31, 2722-2729.	1.6	16

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37	Real-Time Monitoring of Aluminum Crevice Corrosion and Its Inhibition by Vanadates with Multiple Beam Interferometry in a Surface Forces Apparatus. Journal of the Electrochemical Society, 2015, 162, C327-C332.	1.3	16
38	Adhesive barnacle peptides exhibit a steric-driven design rule to enhance adhesion between asymmetric surfaces. Colloids and Surfaces B: Biointerfaces, 2017, 152, 42-48.	2.5	16
39	Environmentally Friendly Layered Double Hydroxide Conversion Layers: Formation Kinetics on Znâ€"Alâ€"Mg-Coated Steel. ACS Applied Materials & Interfaces, 2022, 14, 6109-6119.	4.0	16
40	Atomic force microscope imaging and force measurements at electrified and actively corroding interfaces: Challenges and novel cell design. Review of Scientific Instruments, 2011, 82, 023703.	0.6	15
41	The Intersection of Interfacial Forces and Electrochemical Reactions. Journal of Physical Chemistry B, 2013, 117, 16369-16387.	1.2	15
42	Solid-supported lipid bilayers â€" A versatile tool for the structural and functional characterization of membrane proteins. Methods, 2020, 180, 56-68.	1.9	14
43	Surface chemistry and topographical changes of an electropolished NiTi shape memory alloy. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 807-811.	0.8	13
44	Resolving Nonâ€Specific and Specific Adhesive Interactions of Catechols at Solid/Liquid Interfaces at the Molecular Scale. Angewandte Chemie, 2016, 128, 9676-9680.	1.6	13
45	Interaction Profiles and Stability of Rigid and Polymer-Tethered Lipid Bilayer Models at Highly Charged and Highly Adhesive Contacts. Langmuir, 2019, 35, 15552-15563.	1.6	13
46	Novel in situ sensing surface forces apparatus for measuring gold versus gold, hydrophobic, and biophysical interactions. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, 023201.	0.9	11
47	Control of Polymer Brush Morphology, Rheology, and Protein Repulsion by Hydrogen Bond Complexation. Langmuir, 2021, 37, 4943-4952.	1.6	11
48	Electrochemical control of specific adhesion between amine-functionalized polymers and noble metal electrode interfaces. Materials and Corrosion - Werkstoffe Und Korrosion, 2014, 65, 362-369.	0.8	10
49	Characterizing the hydrophobic-to-hydrophilic transition of electrolyte structuring in proton exchange membrane mimicking surfaces. Physical Chemistry Chemical Physics, 2018, 20, 11722-11729.	1.3	10
50	Fast sputter deposition of MoOx/metal/MoOx transparent electrodes on glass and PET substrates. Journal of Materials Science, 2021, 56, 9047-9064.	1.7	10
51	The Basic Theorem of Temperature-Dependent Processes. Thermo, 2021, 1, 45-60.	0.6	10
52	Soft matter interactions at the molecular scale: interaction forces and energies between single hydrophobic model peptides. Physical Chemistry Chemical Physics, 2017, 19, 4216-4221.	1.3	9
53	Real-Time Multiple Beam Interferometry Reveals Complex Deformations of Metalâ€"Organic-Framework Crystals upon Humidity Adsorption/Desorption. Journal of Physical Chemistry C, 2015, 119, 16769-16776.	1.5	7
54	How specific halide adsorption varies hydrophobic interactions. Biointerphases, 2016, 11, 019007.	0.6	7

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55	Ions and solvation at biointerfaces. Biointerphases, 2016, 11, 018801.	0.6	7
56	Interaction Forces between Pegylated Star-Shaped Polymers at Mica Surfaces. ACS Applied Materials & Interfaces, 2017, 9, 28027-28033.	4.0	7
57	Forces, structures, and ion mobility in nanometer-to-subnanometer extreme spatial confinements: Electrochemisty and ionic liquids. Current Opinion in Colloid and Interface Science, 2020, 47, 126-136.	3.4	7
58	Bottom-up characterization of electrochemical passivity from simple binary alloys to high entropy alloys. Electrochimica Acta, 2022, 405, 139804.	2.6	7
59	Nanometer Resolved Real Time Visualization of Acidification and Material Breakdown in Confinement. Advanced Materials Interfaces, 2019, 6, 1802069.	1.9	6
60	Mechanistic understanding of catechols and integration into an electrochemically cross-linked mussel foot inspired adhesive hydrogel. Biointerphases, 2021, 16, 061002.	0.6	6
61	Adsorption and Diffusion Moderated by Polycationic Polymers during Electrodeposition of Zinc. ACS Applied Materials & Interfaces, 2020, 12, 29928-29936.	4.0	5
62	Low-Temperature-Processed Transparent Electrodes Based on Compact and Mesoporous Titanium Oxide Layers for Flexible Perovskite Solar Cells. ACS Applied Energy Materials, 2022, 5, 5318-5330.	2.5	5
63	Hydration Forces Dominate Surface Charge Dependent Lipid Bilayer Interactions under Physiological Conditions. Journal of Physical Chemistry Letters, 2021, 12, 9248-9252.	2.1	5
64	Versatile, low-cost, non-toxic potentiometric pH-sensors based on niobium. Sensing and Bio-Sensing Research, 2022, 35, 100478.	2.2	5
65	Scanning electrochemical microscopy methods (SECM) and ion-selective microelectrodes for corrosion studies. Corrosion Reviews, 2022, 40, 515-542.	1.0	5
66	Tether-Length Dependence of Bias in Equilibrium Free-Energy Estimates for Surface-to-Molecule Unbinding Experiments. Langmuir, 2018, 34, 766-772.	1.6	4
67	Corrosion protection of ÂZnâ€“Alâ€“Mgâ€coated steel by a layered double hydroxide conversion layer. Materials and Corrosion - Werkstoffe Und Korrosion, 2022, 73, 1657-1665.	0.8	4
68	Development and Up-Scaling of Electrochemical Production and Mild Thermal Reduction of Graphene Oxide. Materials, 2022, 15, 4639.	1.3	4
69	Interfacial Layering and Screening Behavior of Glyme-Based Lithium Electrolytes. Journal of Physical Chemistry Letters, 2018, 9, 577-582.	2.1	3
70	Visualization of Ion | Surface Binding and In Situ Evaluation of Surface Interaction Free Energies via Competitive Adsorption Isotherms. ACS Physical Chemistry Au, 2021, 1, 45-53.	1.9	3
71	Comparison of elemental resolved non-confined and restricted electrochemical degradation of nickel base alloys. Corrosion Science, 2021, 190, 109629.	3.0	3
72	Complementary electrochemical ICP-MS flow cell and in-situ AFM study of the anodic desorption of molecular adhesion promotors. Applied Surface Science, 2021, 570, 151015.	3.1	3

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73	Lipid Anchoring Improves Lubrication and Wear Resistance of the Collagen I Matrix. Langmuir, 2021, 37, 13810-13815.	1.6	3
74	pH-Dependent interaction mechanism of lignin nanofilms. Nanoscale, 2021, 13, 19568-19577.	2.8	3
75	Targeted Tuning of Interactive Forces by Engineering of Molecular Bonds in Series and Parallel Using Peptide-Based Adhesives. Langmuir, 2015, 31, 11051-11057.	1.6	2
76	Transparent electrodes based on molybdenumâ€"titaniumâ€"oxide with increased water stability for use as hole-transport/hole-injection components. Journal of Materials Science, 2022, 57, 8752-8766.	1.7	2
77	Cohesion Gain Induced by Nanosilica Consolidants for Monumental Stone Restoration. Langmuir, 2022, 38, 6949-6958.	1.6	2
78	In-situ AFM study of the crystallization and pH-dependent stability of ZnO(0001)-Zn surfaces. Materials Research Society Symposia Proceedings, 2007, 1035, 1.	0.1	1
79	Selfâ€Assembled Monolayers: Starâ€Shaped Crystallographic Cracking of Localized Nanoporous Defects (Adv. Mater. 33/2015). Advanced Materials, 2015, 27, 4947-4947.	11.1	0
80	Physikalische Chemie 2016: EinzelmolekÃ¼l-Kraftspektroskopie an FlÃ¼ssig-fest-GrenzflÃchen. Nachrichten Aus Der Chemie, 2017, 65, 329-333.	0.0	0
81	Probing Structures, Forces, and Dynamics of Soft Matter in Nanometer Confinement Using Multiple Beam Interferometry. , 2020, , 37-90.		0
82	Combining AFM imaging and elementally resolved spectroelectrochemistry for understanding stability and quality of passive films formed on Alloy 600. Materials and Corrosion - Werkstoffe Und Korrosion, 0, , .	0.8	0
83	Design and testing of drift free force probe experiments with absolute distance control. Review of Scientific Instruments, 2022, 93, 073705.	0.6	0