Rosa Espinosa-Marzal

List of Publications by Year
in descending order

79	2,537	30	47
papers	citations	h-index	g-index
		159525	214721

83	83	83	2533
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Advances in Understanding Damage by Salt Crystallization. Accounts of Chemical Research, 2010, 43, 897-905.	7.6	138
2	Phase changes of salts in porous materials: Crystallization, hydration and deliquescence. Construction and Building Materials, 2008, 22, 1758-1773.	3.2	115
3	Influence of the age and drying process on pore structure and sorption isotherms of hardened cement paste. Cement and Concrete Research, 2006, 36, 1969-1984.	4.6	113
4	Microslips to â€œAvalanchesâ€•in Confined, Molecular Layers of Ionic Liquids. Journal of Physical Chemistry Letters, 2014, 5, 179-184.	2.1	107
5	Ionic Liquids Confined in Hydrophilic Nanocontacts: Structure and Lubricity in the Presence of Water. Journal of Physical Chemistry C, 2014, 118, 6491-6503.	1.5	98
6	Insight into the Electrical Double Layer of an Ionic Liquid on Graphene. Scientific Reports, 2017, 7, 4225.	1.6	74
7	Model for the mechanical stress due to the salt crystallization in porous materials. Construction and Building Materials, 2008, 22, 1350-1367.	3.2	71
8	Hydrated-ion ordering in electrical double layers. Physical Chemistry Chemical Physics, 2012, 14, 6085.	1.3	68
9	Response of Simulated Drinking Water Biofilm Mechanical and Structural Properties to Long-Term Disinfectant Exposure. Environmental Science & Technology, 2016, 50, 1779-1787.	4.6	66
10	Irreversible structural change of a dry ionic liquid under nanoconfinement. Physical Chemistry Chemical Physics, 2015, 17, 13613-13624.	1.3	62
11	Inkbottle Pore-Method: Prediction of hygroscopic water content in hardened cement paste at variable climatic conditions. Cement and Concrete Research, 2006, 36, 1954-1968.	4.6	56
12	Impact of in-pore salt crystallization on transport properties. Environmental Earth Sciences, 2013, 69, 2657-2669.	1.3	53
13	Mitigation of ASR by the use of LiNO3â€”Characterization of the reaction products. Cement and Concrete Research, 2014, 59, 73-86.	4.6	53
14	Polymer Brushes under Shear: Molecular Dynamics Simulations Compared to Experiments. Langmuir, 2015, 31, 4798-4805.	1.6	53
15	Stickâ€“Slip Friction Reveals Hydrogel Lubrication Mechanisms. Langmuir, 2018, 34, 756-765.	1.6	52
16	Effect of the environmental humidity on the bulk, interfacial and nanoconfined properties of an ionic liquid. Physical Chemistry Chemical Physics, 2016, 18, 22719-22730.	1.3	51
17	Layering of ionic liquids on rough surfaces. Nanoscale, 2016, 8, 4094-4106.	2.8	48
18	The chemomechanics of crystallization during rewetting of limestone impregnated with sodium sulfate. Journal of Materials Research, 2011, 26, 1472-1481.	1.2	46

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19	Molecularly-Thin Precursor Films of Imidazolium-Based Ionic Liquids on Mica. Journal of Physical Chemistry C, 2013, 117, 23676-23684.	1.5	46
20	The role of water in fault lubrication. Nature Communications, 2018, 9, 2309.	5.8	44
21	Poly(acrylamide) films at the solvent-induced glass transition: adhesion, tribology, and the influence of crosslinking. Soft Matter, 2012, 8, 9092.	1.2	43
22	Molecular insight into the nanoconfined calciteâ€"solution interface. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 12047-12052.	3.3	43
23	Can drying and re-wetting of magnesium sulfate salts lead to damage of stone?. Environmental Earth Sciences, 2011, 63, 1463-1473.	1.3	42
24	Sodium sulfate heptahydrate I: The growth of single crystals. Journal of Crystal Growth, 2011, 329, 44-51.	0.7	41
25	Adhesion and Friction Properties of Polymer Brushes on Rough Surfaces: A Gradient Approach. Langmuir, 2013, 29, 15251-15259.	1.6	38
26	Exploring Lubrication Regimes at the Nanoscale: Nanotribological Characterization of Silica and Polymer Brushes in Viscous Solvents. Langmuir, 2013, 29, 10149-10158.	1.6	37
27	Mechanisms of damage by salt. Geological Society Special Publication, 2010, 331, 61-77.	0.8	36
28	Understanding the role of viscous solvent confinement in the tribological behavior of polymer brushes: a bioinspired approach. Soft Matter, 2013, 9, 10572.	1.2	35
29	Effect of divalent ions and a polyphosphate on composition, structure, and stiffness of simulated drinking water biofilms. Npj Biofilms and Microbiomes, 2018, 4, 15.	2.9	33
30	Adsorption Behavior and Nanotribology of Amine-Based Friction Modifiers on Steel Surfaces. Journal of Physical Chemistry C, 2019, 123, 13672-13680.	1.5	32
31	Influence of Environmental Humidity on the Wear and Friction of a Silica/Silicon Tribopair Lubricated with a Hydrophilic Ionic Liquid. ACS Applied Materials & Interfaces, 2016, 8, 2961-2973.	4.0	31
32	Impact of solvation on equilibrium conformation of polymer brushes in solvent mixtures. Soft Matter, 2013, 9, 4045.	1.2	30
33	Environmental Influence on the Surface Chemistry of Ionic-Liquid-Mediated Lubrication in a Silica/Silicon Tribopair. Journal of Physical Chemistry C, 2014, 118, 29389-29400.	1.5	30
34	Influence of Water on Structure, Dynamics, and Electrostatics of Hydrophilic and Hydrophobic Ionic Liquids in Charged and Hydrophilic Confinement between Mica Surfaces. ACS Applied Materials & Interfaces, 2019, 11, 33465-33477.	4.0	28
35	Potential-Dependent Layering in the Electrochemical Double Layer of Water-in-Salt Electrolytes. ACS Applied Energy Materials, 2020, 3, 8086-8094.	2.5	28
36	Electroviscous Retardation of the Squeeze Out of Nanoconfined Ionic Liquids. Journal of Physical Chemistry C, 2018, 122, 21344-21355.	1.5	27

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37	Insight into the Viscous and Adhesive Contributions to Hydrogel Friction. Tribology Letters, 2018, 66, 1.	1.2	27
38	Nucleation of sodium sulfate heptahydrate on mineral substrates studied by nuclear magnetic resonance. Journal of Crystal Growth, 2012, 338, 166-169.	0.7	25
39	Two-Fluid Model for the Interpretation of Quartz Crystal Microbalance Response: Tuning Properties of Polymer Brushes with Solvent Mixtures. Journal of Physical Chemistry C, 2013, 117, 4533-4543.	1.5	25
40	Influence of Chain Stiffness, Grafting Density and Normal Load on the Tribological and Structural Behavior of Polymer Brushes: A Nonequilibrium-Molecular-Dynamics Study. Polymers, 2016, 8, 254.	2.0	24
41	Lubrication of Si-Based Tribopairs with a Hydrophobic Ionic Liquid: The Multiscale Influence of Water. Journal of Physical Chemistry C, 2018, 122, 7331-7343.	1.5	23
42	Stepwise collapse of highly overlapping electrical double layers. Physical Chemistry Chemical Physics, 2016, 18, 24417-24427.	1.3	22
43	Effect of Crosslinking on the Microtribological Behavior of Model Polymer Brushes. Tribology Letters, 2016, 63, 1.	1.2	22
44	Insight into the Electrical Double Layer of Ionic Liquids Revealed through Its Temporal Evolution. Advanced Materials Interfaces, 2020, 7, 2001313.	1.9	22
45	Molecular Mechanisms Underlying Lubrication by Ionic Liquids: Activated Slip and Flow. Lubricants, 2018, 6, 64.	1.2	21
46	Correlation Between the Adsorption and the Nanotribological Performance of Fatty Acid-Based Organic Friction Modifiers on Stainless Steel. Tribology Letters, 2020, 68, 1.	1.2	21
47	Sugars Communicate through Water: Oriented Glycans Induce Water Structuring. Biophysical Journal, 2013, 104, 2686-2694.	0.2	20
48	Ab Initio Studies of Calcium Carbonate Hydration. Journal of Physical Chemistry A, 2015, 119, 11591-11600.	1.1	19
49	Effects of Layering and Supporting Substrate on Liquid Slip at the Single-Layer Graphene Interface. ACS Nano, 2021, 15, 10095-10106.	7.3	19
50	Advances in Understanding Hydrogel Lubrication. Colloids and Interfaces, 2020, 4, 54.	0.9	18
51	Ion specific hydration in nano-confined electrical double layers. Journal of Colloid and Interface Science, 2017, 506, 263-270.	5.0	17
52	Mechanistic Approach to Predict the Combined Effects of Additives and Surface Templates on Calcium Carbonate Mineralization. Crystal Growth and Design, 2016, 16, 6186-6198.	1.4	16
53	Assembly, Morphology, Diffusivity, and Indentation of Hydrogel-Supported Lipid Bilayers. Langmuir, 2017, 33, 7105-7117.	1.6	15
54	Reconciling DLVO and non-DLVO Forces and Their Implications for Ion Rejection by a Polyamide Membrane. Langmuir, 2017, 33, 8982-8992.	1.6	14

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55	Tailoring Calcite Growth through an Amorphous Precursor in a Hydrogel Environment. Crystal Growth and Design, 2019, 19, 3192-3205.	1.4	14
56	Influence of Loading Conditions and Temperature on Static Friction and Contact Aging of Hydrogels with Modulated Microstructures. ACS Applied Materials & Interfaces, 2019, 11, 42722-42733.	4.0	14
57	Effects of Nanoscale Roughness on the Lubricious Behavior of an Ionic Liquid. Advanced Materials Interfaces, 2020, 7, 2000314.	1.9	14
58	Density profile of water in nanoslit. Europhysics Letters, 2012, 99, 26001.	0.7	12
59	Slippery and Sticky Graphene in Water. ACS Nano, 2019, 13, 2072-2082.	7.3	12
60	Nanoscale insight into the degradation mechanisms of the cartilage articulating surface preceding OA. Biomaterials Science, 2020, 8, 3944-3955.	2.6	12
61	Effect of Fluid Chemistry on the Interfacial Composition, Adhesion, and Frictional Response of Calcite Single Crystalsâ€”Implications for Injectionâ€Induced Seismicity. Journal of Geophysical Research: Solid Earth, 2019, 124, 5607-5628.	1.4	11
62	Collective dehydration of ions in nano-pores. Physical Chemistry Chemical Physics, 2017, 19, 13462-13468.	1.3	9
63	Self-adaptive hydrogels to mineralization. Soft Matter, 2017, 13, 5469-5480.	1.2	9
64	Strong Stretching of Poly(ethylene glycol) Brushes Mediated by Ionic Liquid Solvation. Journal of Physical Chemistry Letters, 2017, 8, 3954-3960.	2.1	9
65	Nanoheterogeneity of LiTFSI Solutions Transitions Close to a Surface and with Concentration. Nano Letters, 2021, 21, 2304-2309.	4.5	9
66	Chargeâ€Induced Structural Changes of Confined Copolymer Hydrogels for Controlled Surface Morphology, Rheological Response, Adhesion, and Friction. Advanced Functional Materials, 2022, 32, .	7.8	9
67	Nanoscale insight into the relation between pressure solution of calcite and interfacial friction. Journal of Colloid and Interface Science, 2021, 601, 254-264.	5.0	7
68	Pathological cardiolipin-promoted membrane hemifusion stiffens pulmonary surfactant membranes. Biophysical Journal, 2022, 121, 886-896.	0.2	7
69	Calcium carbonate with nanogranular microstructure yields enhanced toughness. Nanoscale, 2017, 9, 16689-16699.	2.8	6
70	Mixing oil and water with ionic liquids: bicontinuous microemulsions under confinement. Soft Matter, 2019, 15, 9609-9613.	1.2	6
71	Ion specific effects on the pressure solution of calcite single crystals. Geochimica Et Cosmochimica Acta, 2020, 280, 116-129.	1.6	6
72	Using Patterned Self-Assembled Monolayers to Tune Grapheneâ€“Substrate Interactions. Langmuir, 2021, 37, 9996-10005.	1.6	6

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73	Rheological Characteristics of Ionic Liquids under Nanoconfinement. Langmuir, 2022, 38, 2961-2971.	1.6	6
74	Mediating the Enhanced Interaction Between Hydroxyapatite and Agarose through Amorphous Calcium Carbonate. Crystal Growth and Design, 2020, 20, 6917-6929.	1.4	5
75	Transient stiffening of cartilage during joint articulation: A microindentation study. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 113, 104113.	1.5	4
76	Velocity-weakening and -strengthening friction at single and multiasperity contacts with calcite single crystals. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	3
77	Compositional Tuning Reveals a Pathway to Achieve a Strong and Lubricious Double Network in Agarose-Polyacrylamide Hydrogels. Tribology Letters, 2022, 70, .	1.2	2
78	Interactions in Water Across Interfaces: From Nano to Macro-Scale Perspective. NATO Science for Peace and Security Series C: Environmental Security, 2014, , 1-14.	0.1	1
79	Confinement During In-Pore Crystallization. , 2013, , .		0