C Rodriguez-Navarro

List of Publications by Year
in descending order

115 papers	8,525 citations	36299 51 h-index	45310 90 g-index
122 all docs	122 docs citations	122 times ranked	6848 citing authors

#	Article	IF	Citations
1	Salt weathering: influence of evaporation rate, supersaturation and crystallization pattern. Earth Surface Processes and Landforms, 1999, 24, 191-209.	2.5	505
2	Carbonate and silicate phase reactions during ceramic firing. European Journal of Mineralogy, 2001, 13, 621-634.	1.3	469
3	Conservation of Ornamental Stone by Myxococcus xanthus-Induced Carbonate Biomineralization. Applied and Environmental Microbiology, 2003, 69, 2182-2193.	3.1	442
4	How does sodium sulfate crystallize? Implications for the decay and testing of building materials. Cement and Concrete Research, 2000, 30, 1527-1534.	11.0	347
5	Thermal decomposition of calcite: Mechanisms of formation and textural evolution of CaO nanocrystals. American Mineralogist, 2009, 94, 578-593.	1.9	344
6	Influence of mineralogy and firing temperature on the porosity of bricks. Journal of the European Ceramic Society, 2004, 24, 547-564.	5.7	334
7	Bacterially mediated mineralization of vaterite. Geochimica Et Cosmochimica Acta, 2007, 71, 1197-1213.	3.9	291
8	Phase and morphology evolution of calcium carbonate precipitated by carbonation of hydrated lime. Journal of Materials Science, 2012, 47, 6151-6165.	3.7	207
9	The role of saline solution properties on porous limestone salt weathering by magnesium and sodium sulfates. Environmental Geology, 2007, 52, 269-281.	1.2	193
10	Role of particulate matter from vehicle exhaust on porous building stones (limestone) sulfation. Science of the Total Environment, 1996, 187, 79-91.	8.0	181
11	Influence of Substrate Mineralogy on Bacterial Mineralization of Calcium Carbonate: Implications for Stone Conservation. Applied and Environmental Microbiology, 2012, 78, 4017-4029.	3.1	174
12	Alcohol Dispersions of Calcium Hydroxide Nanoparticles for Stone Conservation. Langmuir, 2013, 29, 11457-11470.	3.5	169
13	Formation of amorphous calcium carbonate and its transformation into mesostructured calcite. CrystEngComm, 2015, 17, 58-72.	2.6	169
14	Precipitation and Growth Morphology of Calcium Carbonate Induced by Myxococcus Xanthus: Implications for Recognition of Bacterial Carbonates. Journal of Sedimentary Research, 2004, 74, 868-876.	1.6	156
15	Nanostructure and Irreversible Colloidal Behavior of Ca(OH)2:Â Implications in Cultural Heritage Conservation. Langmuir, 2005, 21, 10948-10957.	3.5	152
16	Aging of Lime Putty: Effects on Traditional Lime Mortar Carbonation. Journal of the American Ceramic Society, 2000, 83, 1070-1076.	3.8	141
17	Calcium Hydroxide Crystal Evolution upon Aging of Lime Putty. Journal of the American Ceramic Society, 1998, 81, 3032-3034.	3.8	130
18	Mechanism of leached layer formation during chemical weathering of silicate minerals. Geology, 2012, 40, 947-950.	4.4	127

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19	Consolidation of degraded ornamental porous limestone stone by calcium carbonate precipitation induced by the microbiota inhabiting the stone. Chemosphere, 2007, 68, 1929-1936.	8.2	117
20	Effects of ferrocyanide ions on NaCl crystallization in porous stone. Journal of Crystal Growth, 2002, 243, 503-516.	1.5	112
21	Dissolution and Carbonation of Portlandite [Ca(OH)₂] Single Crystals. Environmental Science & Technology, 2013, 47, 11342-11349.	10.0	105
22	An atomic force microscopy study of calcite dissolution in saline solutions: The role of magnesium ions. Geochimica Et Cosmochimica Acta, 2009, 73, 3201-3217.	3.9	99
23	A non-classical view on calcium oxalate precipitation and the role of citrate. Nature Communications, 2017, 8, 768.	12.8	99
24	TEM study of mullite growth after muscovite breakdown. American Mineralogist, 2003, 88, 713-724.	1.9	96
25	Consolidation of quarry calcarenite by calcium carbonate precipitation induced by bacteria activated among the microbiota inhabiting the stone. International Biodeterioration and Biodegradation, 2008, 62, 352-363.	3.9	93
26	Direct Nanoscale Imaging Reveals the Growth of Calcite Crystals via Amorphous Nanoparticles. Crystal Growth and Design, 2016, 16, 1850-1860.	3.0	89
27	The mechanism of thermal decomposition of dolomite: New insights from 2D-XRD and TEM analyses. American Mineralogist, 2012, 97, 38-51.	1.9	88
28	Bacterial biomineralization: new insights from <i>Myxococcus</i> -induced mineral precipitation. Geological Society Special Publication, 2010, 336, 31-50.	1.3	85
29	Effect of pH on calcite growth at constant ratio and supersaturation. Geochimica Et Cosmochimica Acta, 2011, 75, 284-296.	3.9	84
30	Amorphous and crystalline calcium carbonate phases during carbonation of nanolimes: implications in heritage conservation. CrystEngComm, 2016, 18, 6594-6607.	2.6	83
31	Protection and consolidation of stone heritage by self-inoculation with indigenous carbonatogenic bacterial communities. Nature Communications, 2017, 8, 279.	12.8	83
32	Origins of honeycomb weathering: The role of salts and wind. Bulletin of the Geological Society of America, 1999, 111, 1250-1255.	3.3	81
33	Nanolimes: from synthesis to application. Pure and Applied Chemistry, 2018, 90, 523-550.	1.9	80
34	Human impact in a tourist karstic cave (Aracena, Spain). Environmental Geology, 1997, 31, 142-149.	1.2	78
35	Lime Mortars for the Conservation of Historic Buildings. Studies in Conservation, 2002, 47, 62-75.	1.1	78
36	Swelling damage in clay-rich sandstones used in the church of San Mateo in Tarifa (Spain). Journal of Cultural Heritage, 2008, 9, 66-76.	3.3	77

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37	Damage Mechanisms of Porous Materials due to In-Pore Salt Crystallization. Physical Review Letters, 2012, 109, 265503.	7.8	77
38	Lime Mortars for the Conservation of Historic Buildings. Studies in Conservation, 2002, 47, 62.	1.1	75
39	Nonclassical crystallization in vivo et in vitro (II): Nanogranular features in biomimetic minerals disclose a general colloid-mediated crystal growth mechanism. Journal of Structural Biology, 2016, 196, 260-287.	2.8	74
40	Bioconservation of Deteriorated Monumental Calcarenite Stone and Identification of Bacteria with Carbonatogenic Activity. Microbial Ecology, 2010, 60, 39-54.	2.8	72
41	Control of silicate weathering by interface-coupled dissolution-precipitation processes at the mineral-solution interface. Geology, 2016, 44, 567-570.	4.4	68
42	Effects of particulate matter from gasoline and diesel vehicle exhaust emissions on silicate stones sulfation. Atmospheric Environment, 2006, 40, 6905-6917.	4.1	67
43	Ion-specific effects on the kinetics of mineral dissolution. Chemical Geology, 2011, 281, 364-371.	3.3	64
44	Liesegang pattern development in carbonating traditional lime mortars. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2002, 458, 2261-2273.	2.1	62
45	A review of selected inorganic consolidants and protective treatments for porous calcareous materials. Studies in Conservation, 2003, 48, 13-25.	1.1	62
46	Kinetics and Mechanism of Calcium Hydroxide Conversion into Calcium Alkoxides: Implications in Heritage Conservation Using Nanolimes. Langmuir, 2016, 32, 5183-5194.	3.5	62
47	Nonclassical crystallization in vivo et in vitro (I): Process-structure-property relationships of nanogranular biominerals. Journal of Structural Biology, 2016, 196, 244-259.	2.8	60
48	Predicting salt damage in practice: A theoretical insight into laboratory tests.. RILEM Technical Letters, 0, 2, 108-118.	0.0	60
49	Microstructure and Rheology of Lime Putty. Langmuir, 2010, 26, 3868-3877.	3.5	56
50	Consolidation of archaeological gypsum plaster by bacterial biomineralization of calcium carbonate. Acta Biomaterialia, 2014, 10, 3844-3854.	8.3	56
51	Alkaline treatment of clay minerals from the Alhambra Formation: Implications for the conservation of earthen architecture. Applied Clay Science, 2008, 39, 122-132.	5.2	54
52	Alkaline activation as an alternative method for the consolidation of earthen architecture. Journal of Cultural Heritage, 2015, 16, 461-469.	3.3	54
53	In situ nanoscale observations of the dissolution of dolomite cleavage surfaces. Geochimica Et Cosmochimica Acta, 2012, 80, 1-13.	3.9	53
54	Mineralogy and physicochemical features of Saharan dust wet deposited in the Iberian Peninsula during an extreme red rain event. Atmospheric Chemistry and Physics, 2018, 18, 10089-10122.	4.9	48

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55	Influencing Crystallization Damage in Porous Materials through the Use of Surfactants:Â Experimental Results Using Sodium Dodecyl Sulfate and Cetyldimethylbenzylammonium Chloride. Langmuir, 2000, 16, 947-954.	3.5	47
56	Role of clay minerals in the physicomechanical deterioration of sandstone. Journal of Geophysical Research, 2008, 113, .	3.3	47
57	Sulfation of calcitic and dolomitic lime mortars in the presence of diesel particulate matter. Environmental Geology, 2008, 56, 741-752.	1.2	46
58	Behavior of Brick Samples in Aggressive Environments. Water, Air, and Soil Pollution, 2000, 119, 191-207.	2.4	43
59	Sodium Sulfate Crystallization in the Presence of Phosphonates:â€‰ Implications in Ornamental Stone Conservation. Crystal Growth and Design, 2006, 6, 1575-1583.	3.0	43
60	Effectiveness of oxalic acid treatments for the protection of marble surfaces. Materials and Design, 2017, 115, 82-92.	7.0	42
61	Control of Crystal Nucleation and Growth by Additives. Elements, 2013, 9, 203-209.	0.5	40
62	Evidence of honeycomb weathering on Mars. Geophysical Research Letters, 1998, 25, 3249-3252.	4.0	39
63	Crystallization and Colloidal Stabilization of Ca(OH)₂ in the Presence of Nopal Juice (<i>Opuntia ficus indica</i>): Implications in Architectural Heritage Conservation. Langmuir, 2017, 33, 10936-10950.	3.5	39
64	Application limits of Q-switched Nd:YAG laser irradiation for stone cleaning based on colour measurements. Journal of Cultural Heritage, 2003, 4, 50-55.	3.3	38
65	The Role of Sepiolite-Palygorskite in the Decay of Ancient Egyptian Limestone Sculptures. Clays and Clay Minerals, 1998, 46, 414-422.	1.3	36
66	Lime Putties and Mortars. Studies in Conservation, 2008, 53, 9-23.	1.1	36
67	An urban model for dolomite precipitation: authigenic dolomite on weathered building stones. Sedimentary Geology, 1997, 109, 1-11.	2.1	35
68	An integrated methodology for salt damage assessment and remediation: the case of San JerÃ³nimo Monastery (Granada, Spain). Environmental Earth Sciences, 2011, 63, 1475-1486.	2.7	34
69	The Carbonation of Wollastonite: A Model Reaction to Test Natural and Biomimetic Catalysts for Enhanced CO2 Sequestration. Minerals (Basel, Switzerland), 2018, 8, 209.	2.0	34
70	Mechanism and Kinetics of Dehydration of Epsomite Crystals Formed in the Presence of Organic Additives. Journal of Physical Chemistry B, 2007, 111, 41-52.	2.6	33
71	Nonclassical Crystallization of Calcium Hydroxide via Amorphous Precursors and the Role of Additives. Crystal Growth and Design, 2020, 20, 4418-4432.	3.0	29
72	The Role of Clays in the Decay of Ancient Egyptian Limestone Sculptures. Journal of the American Institute for Conservation, 1997, 36, 151-163.	0.5	27

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73	Role of marble microstructure in near-infrared laser-induced damage during laser cleaning. Journal of Applied Physics, 2004, 95, 3350-3357.	2.5	27
74	Hydration Effects on the Stability of Calcium Carbonate Pre-Nucleation Species. Minerals (Basel,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 7	2.0	26
75	Exploring the effect of poly(acrylic acid) on pre- and post-nucleation BaSO₄species: new insights into the mechanisms of crystallization control by polyelectrolytes. CrystEngComm, 2016, 18, 2830-2842.	2.6	24
76	Interaction between Epsomite Crystals and Organic Additives. Crystal Growth and Design, 2008, 8, 2665-2673.	3.0	23
77	Hydration effects on gypsum dissolution revealed by in situ nanoscale atomic force microscopy observations. Geochimica Et Cosmochimica Acta, 2016, 179, 110-122.	3.9	23
78	The multiple roles of carbonic anhydrase in calcium carbonate mineralization. CrystEngComm, 2019, 21, 7407-7423.	2.6	23
79	The Role of Clays in the Decay of Ancient Egyptian Limestone Sculptures. Journal of the American Institute for Conservation, 1997, 36, 151.	0.5	23
80	Kinetic effect of carbonic anhydrase enzyme on the carbonation reaction of lime mortar. International Journal of Architectural Heritage, 2018, 12, 779-789.	3.1	22
81	The Mechanism of Vapor Phase Hydration of Calcium Oxide: Implications for CO₂ capture. Environmental Science & Technology, 2014, 48, 12411-12418.	10.0	21
82	Procesos de alteraciÃ³n asociados al contenido de minerales arcillosos en materiales pÃ©treos. Materiales De Construccion, 2001, 51, 163-182.	0.7	21
83	Bioinspired Alkoxysilane Conservation Treatments for Building Materials Based on Amorphous Calcium Carbonate and Oxalate Nanoparticles. ACS Applied Nano Materials, 2019, 2, 4954-4967.	5.0	20
84	Stone Consolidation by Bacterial Carbonatogenesis: Evaluation of in situ Applications. Restoration of Buildings and Monuments, 2015, 21, 9-20.	0.6	19
85	Bacterial Diversity Evolution in Maya Plaster and Stone Following a Bio-Conservation Treatment. Frontiers in Microbiology, 2020, 11, 599144.	3.5	19
86	CO2 sequestration and simultaneous zeolite production by carbonation of coal fly ash: Impact on the trapping of toxic elements. Journal of CO2 Utilization, 2020, 40, 101263.	6.8	19
87	Influence of organic matter on the reactivity of clay minerals in highly alkaline environments. Applied Clay Science, 2015, 111, 27-36.	5.2	18
88	Thaumasite as decay product of cement mortar in brick masonry of a church near Venice. Cement and Concrete Composites, 2003, 25, 1123-1129.	10.7	17
89	Reaction of pseudowollastonite with carbonate-bearing fluids: Implications for CO2 mineral sequestration. Chemical Geology, 2019, 524, 158-173.	3.3	17
90	Degradation and conservation of clay-containing stone: A review. Construction and Building Materials, 2022, 330, 127226.	7.2	17

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91	Template-Assisted Crystallization of Sulfates onto Calcite: Implications for the Prevention of Salt Damage. Crystal Growth and Design, 2013, 13, 40-51.	3.0	16
92	Signatures in magnetites formed by (Ca,Mg,Fe)CO3 thermal decomposition: Terrestrial and extraterrestrial implications. Geochimica Et Cosmochimica Acta, 2012, 87, 69-80.	3.9	15
93	Citrate Stabilizes Hydroxylapatite Precursors: Implications for Bone Mineralization. ACS Biomaterials Science and Engineering, 2021, 7, 2346-2357.	5.2	15
94	Carbonation of calcium-magnesium pyroxenes: Physical-chemical controls and effects of reaction-driven fracturing. Geochimica Et Cosmochimica Acta, 2021, 304, 258-280.	3.9	14
95	Laser cleaning of stone materials: an overview of current research. Studies in Conservation, 2003, 48, 65-82.	1.1	10
96	Degradation of ancient Maya carved tuff stone at Copan and its bacterial bioconservation. Npj Materials Degradation, 2021, 5, .	5.8	9
97	Consolidation of clay-rich earthen building materials: A comparative study at the Alhambra fortress (Spain). Journal of Building Engineering, 2022, 50, 104081.	3.4	9
98	Incipient Maya Burnt-Lime Technology: Characterization and Chronological Variations in Preclassic Plaster, Stucco and Mortar at Nakbe, Guatemala. Materials Research Society Symposia Proceedings, 1996, 462, 207.	0.1	8
99	The Sierra Nevada serpentinites: the serpentinites most used in Spanish heritage buildings. Geological Society Special Publication, 2015, 407, 101-108.	1.3	8
100	Weathering of serpentinite stone due to in situ generation of calcium and magnesium sulfates. Construction and Building Materials, 2021, 280, 122402.	7.2	7
101	Influence of the calcination process in traditional gypsum with structural behavior. Ge-Conservacion, 0, 11, 79-85.	0.2	7
102	Kinetics and Mechanisms of Acidâ€pH Weathering of Pyroxenes. Geochemistry, Geophysics, Geosystems, 2021, 22, e2021GC009711.	2.5	7
103	Mineralogical Evolution of Di- and Trioctahedral Smectites in Highly Alkaline Environments. Clays and Clay Minerals, 2015, 63, 414-431.	1.3	6
104	Protection and Consolidation of Stone Heritage by Bacterial Carbonatogenesis. , 2021, , 281-299.		6
105	Synthesis of high surface area CaSO₄Â·0.5H₂O nanorods using calcium ethoxide as precursor. Chemical Communications, 2021, 57, 7304-7307.	4.1	6
106	Suppression of salt weathering of porous limestone by borax-induced promotion of sodium and magnesium sulphate crystallization. Geological Society Special Publication, 2010, 331, 93-102.	1.3	5
107	Stabilization of Calcium Oxalate Precursors during the Pre- and Post-Nucleation Stages with Poly(acrylic acid). Nanomaterials, 2021, 11, 235.	4.1	5
108	Bioprotection. Encyclopedia of Earth Sciences Series, 2011, , 185-189.	0.1	5

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109	Carbonates. , 0, , 337-375.		5
110	Reactions between minerals and aqueous solutions. , 2017, , 419-467.		5
111	Virtual environments of teaching learning for training in experimental techniques. Innovation in multidisciplinary groups. Advances in Building Education, 2021, 5, 27.	0.1	3
112	New polymer-based treatments for the prevention of damage by salt crystallization in stone. Materials and Structures/Materiaux Et Constructions, 2019, 52, 1.	3.1	2
113	Pollution-Derived Heavy-Metal Enrichment on Building Stones. Mineralogical Magazine, 1994, 58A, 781-782.	1.4	1
114	Understanding kinetics and mechanisms of pyroxenes weathering. , 2021, , .		0
115	Reaction-Induced Fracturing during Silicate Weathering and Carbonation. , 2020, , .		0