U M Angst

List of Publications by Year
in descending order

90 papers	4,086 citations	159573 30 h-index	128286 60 g-index
94 all docs	94 docs citations	94 times ranked	2266 citing authors

#	Article	IF	Citations
1	Critical chloride content in reinforced concrete â€" A review. Cement and Concrete Research, 2009, 39, 1122-1138.	11.0	971
2	Challenges and opportunities in corrosion of steel in concrete. Materials and Structures/Materiaux Et Constructions, 2018, 51, 1.	3.1	244
3	Chloride induced reinforcement corrosion: Electrochemical monitoring of initiation stage and chloride threshold values. Corrosion Science, 2011, 53, 1451-1464.	6.6	183
4	Corrosion rate of carbon steel in carbonated concrete â€" A critical review. Cement and Concrete Research, 2018, 103, 35-48.	11.0	172
5	The steelâ€"concrete interface. Materials and Structures/Materiaux Et Constructions, 2017, 50, 1.	3.1	170
6	Critical chloride content in reinforced concrete â€" An updated review considering Chinese experience. Cement and Concrete Research, 2019, 117, 58-68.	11.0	127
7	Mechanism of electrochemical chloride removal. Corrosion Science, 2007, 49, 4504-4522.	6.6	103
8	Modeling of corrosion-induced concrete cover cracking: A critical analysis. Construction and Building Materials, 2013, 42, 225-237.	7.2	103
9	The effect of the steelâ€"concrete interface on chloride-induced corrosion initiation in concrete: a critical review by RILEM TC 262-SCI. Materials and Structures/Materiaux Et Constructions, 2019, 52, 1.	3.1	98
10	Chloride induced reinforcement corrosion: Rate limiting step of early pitting corrosion. Electrochimica Acta, 2011, 56, 5877-5889.	5.2	80
11	Potentiometric determination of the chloride ion activity in cement based materials. Journal of Applied Electrochemistry, 2010, 40, 561-573.	2.9	76
12	Concrete cover cracking owing to reinforcement corrosion â€" theoretical considerations and practical experience. Materials and Corrosion - Werkstoffe Und Korrosion, 2012, 63, 1069-1077.	1.5	76
13	On the applicability of the Sternâ€"Geary relationship to determine instantaneous corrosion rates in macroâ€cell corrosion. Materials and Corrosion - Werkstoffe Und Korrosion, 2015, 66, 1017-1028.	1.5	75
14	Predicting the time to corrosion initiation in reinforced concrete structures exposed to chlorides. Cement and Concrete Research, 2019, 115, 559-567.	11.0	74
15	Kinetics of electrochemical dissolution of metals in porous media. Nature Materials, 2019, 18, 942-947.	27.5	73
16	Active Interaction Force Control for Contact-Based Inspection With a Fully Actuated Aerial Vehicle. IEEE Transactions on Robotics, 2021, 37, 709-722.	10.3	71
17	A Critical Review of the Science and Engineering of Cathodic Protection of Steel in Soil and Concrete. Corrosion, 2019, 75, 1420-1433.	1.1	64
18	The size effect in corrosion greatly influences the predicted life span of concrete infrastructures. Science Advances, 2017, 3, e1700751.	10.3	63

#	Article	IF	Citations
19	An Omnidirectional Aerial Manipulation Platform for Contact-Based Inspection. , 0, , .		62
20	Probabilistic considerations on the effect of specimen size on the critical chloride content in reinforced concrete. Corrosion Science, 2011, 53, 177-187.	6.6	56
21	Corrosion of steel in carbonated concrete: mechanisms, practical experience, and research priorities â€“ a critical review by RILEM TC 281-CCC. RILEM Technical Letters, 0, 5, 85-100.	0.0	52
22	Diffusion potentials as source of error in electrochemical measurements in concrete. Materials and Structures/Materiaux Et Constructions, 2009, 42, 365-375.	3.1	51
23	Electrochemistry and capillary condensation theory reveal the mechanism of corrosion in dense porous media. Scientific Reports, 2018, 8, 7407.	3.3	48
24	Spatial variability of chloride in concrete within homogeneously exposed areas. Cement and Concrete Research, 2014, 56, 40-51.	11.0	45
25	Ag/AgCl ion-selective electrodes in neutral and alkaline environments containing interfering ions. Materials and Structures/Materiaux Et Constructions, 2016, 49, 2637-2651.	3.1	42
26	Cathodic protection of soil buried steel pipelines - a critical discussion of protection criteria and threshold values. Materials and Corrosion - Werkstoffe Und Korrosion, 2016, 67, 1135-1142.	1.5	41
27	Performance under tensile loading of point-by-point wire and arc additively manufactured steel bars for structural components. Materials and Design, 2021, 205, 109740.	7.0	38
28	Detecting critical chloride content in concrete using embedded ion selective electrodes â€“ effect of liquid junction and membrane potentials. Materials and Corrosion - Werkstoffe Und Korrosion, 2009, 60, 638-643.	1.5	36
29	The kinetic competition between transport and oxidation of ferrous ions governs precipitation of corrosion products in carbonated concrete. RILEM Technical Letters, 0, 3, 8-16.	0.0	35
30	Present and future durability challenges for reinforced concrete structures. Materials and Corrosion - Werkstoffe Und Korrosion, 2012, 63, 1047-1051.	1.5	34
31	Local electrochemistry of reinforcement steel â€“ Distribution of open circuit and pitting potentials on steels with different surface condition. Corrosion Science, 2015, 98, 610-618.	6.6	33
32	Quantifying the anomalous water absorption behavior of cement mortar in view of its physical sensitivity to water. Cement and Concrete Research, 2021, 143, 106395.	11.0	33
33	The mechanism controlling corrosion of steel in carbonated cementitious materials in wetting and drying exposure. Cement and Concrete Composites, 2020, 113, 103717.	10.7	31
34	Influence of mortar resistivity on the rate-limiting step of chloride-induced macro-cell corrosion of reinforcing steel. Corrosion Science, 2016, 110, 46-56.	6.6	27
35	Solubility and speciation of iron in cementitious systems. Cement and Concrete Research, 2022, 151, 106620.	11.0	26
36	Beyond the chloride threshold concept for predicting corrosion of steel in concrete. Applied Physics Reviews, 2022, 9, .	11.3	25

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37	Climbing robot for corrosion monitoring of reinforced concrete structures. , 2012, , .		23
38	Experiences from RILEM TC 235-CTC in recommending a test method for chloride threshold values in concrete. RILEM Technical Letters, 0, 3, 25-31.	0.0	23
39	On the limitations of predicting the ohmic resistance in a macro-cell in mortar from bulk resistivity measurements. Cement and Concrete Research, 2015, 76, 147-158.	11.0	22
40	A Dual-Permeability Approach to Study Anomalous Moisture Transport Properties of Cement-Based Materials. Transport in Porous Media, 2020, 135, 59-78.	2.6	22
41	An organic corrosion-inhibiting admixture for reinforced concrete: 18Âyears of field experience. Materials and Structures/Materiaux Et Constructions, 2016, 49, 2807-2818.	3.1	20
42	Limitations of the use of concrete bulk resistivity as an indicator for the rate of chlorideâ€induced macroâ€cell corrosion. Structural Concrete, 2017, 18, 326-333.	3.1	20
43	Image analysis for determination of cement content in concrete to improve accuracy of chloride analyses. Cement and Concrete Research, 2017, 99, 1-7.	11.0	18
44	Monitoring pH in corrosion engineering by means of thermally produced iridium oxide electrodes. Materials and Corrosion - Werkstoffe Und Korrosion, 2018, 69, 76-88.	1.5	18
45	On Applicability of Wenner Method for Resistivity Measurements of Concrete. ACI Materials Journal, 2014, 111, .	0.2	18
46	Defects in epoxyâ€coated reinforcement and their impact on the service life of a concrete structure. Structural Concrete, 2015, 16, 398-405.	3.1	17
47	Development of a Novel Methodology to Assess the Corrosion Threshold in Concrete Based on Simultaneous Monitoring of pH and Free Chloride Concentration. Sensors, 2018, 18, 3101.	3.8	17
48	Modeling Anomalous Moisture Transport in Cement-Based Materials with Kinetic Permeability. International Journal of Molecular Sciences, 2020, 21, 837.	4.1	17
49	Corrosion inhibitors for reinforced concrete. , 2016, , 321-339.		16
50	PH-monitoring in mortar with thermally-oxidized iridium electrodes. RILEM Technical Letters, 0, 2, 59-66.	0.0	16
51	Recommended practice for reporting experimental data produced from studies on corrosion of steel in cementitious systems. RILEM Technical Letters, 0, 4, 22-32.	0.0	16
52	Measuring corrosion rates: A novel AC method based on processing and analysing signals recorded in the time domain. Corrosion Science, 2014, 89, 307-317.	6.6	15
53	A systematic data collection on chloride-induced steel corrosion in concrete to improve service life modelling and towards understanding corrosion initiation. Corrosion Science, 2019, 157, 331-336.	6.6	15
54	Epoxidharzbeschichtete Bewehrung. Beton- Und Stahlbetonbau, 2014, 109, 3-14.	0.4	14

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55	Anaerobic corrosion of carbon steel in bentonite: An evolving interface. Corrosion Science, 2021, 187, 109523.	6.6	14
56	A laboratory investigation of cutting damage to the steel-concrete interface. Cement and Concrete Research, 2020, 138, 106229.	11.0	12
57	Diffusion potentials in porous mortar in a moisture state below saturation. Electrochimica Acta, 2010, 55, 8545-8555.	5.2	11
58	Experimental Protocol to Determine the Chloride Threshold Value for Corrosion in Samples Taken from Reinforced Concrete Structures. Journal of Visualized Experiments, 2017, , .	0.3	11
59	Impact of IR Drops on the âˆ'850â€‰â€‰mVCSE Cathodic Protection Criterion for Coated Steel Pipes in Soil. Journal of Pipeline Systems Engineering and Practice, 2018, 9, .	1.6	11
60	A new perspective on measuring the corrosion rate of localized corrosion. Materials and Corrosion - Werkstoffe Und Korrosion, 2020, 71, 808-823.	1.5	11
61	Critical chloride content in reinforced concrete â€" State of the art. , 2008, , 149-150.		9
62	Epoxyâ€coated reinforcement in concrete structures: Results of a Swiss pilot project after 24 years of field exposure. Materials and Corrosion - Werkstoffe Und Korrosion, 2016, 67, 631-638.	1.5	8
63	Influence of Calcium Nitrate and Sodium Hydroxide on Carbonation-Induced Steel Corrosion in Concrete. Corrosion, 2019, 75, 737-744.	1.1	8
64	Corrosion Challenges and Opportunities in Digital Fabrication of Reinforced Concrete. RILEM Bookseries, 2019, , 225-233.	0.4	8
65	Microstructural examination of carbonated 3Dâ€printed concrete. Journal of Microscopy, 2022, 286, 141-147.	1.8	8
66	Corrosion Behavior of Carbon Steel in Alkaline, Deaerated Solutions: Influence of Carbonate Ions. Journal of the Electrochemical Society, 2020, 167, 061503.	2.9	7
67	Chloride-induced reinforcement corrosion in cracked concrete: the influence of time of wetness on corrosion propagation. Corrosion Engineering Science and Technology, 2021, 56, 1-10.	1.4	7
68	Methods for characterising the steelâ€"concrete interface to enhance understanding of reinforcement corrosion: a critical review by RILEM TC 262-SCI. Materials and Structures/Materiaux Et Constructions, 2022, 55, 1.	3.1	7
69	Corrosion Behaviour of L80 Steel Grade in Geothermal Power Plants in Switzerland. Metals, 2019, 9, 331.	2.3	6
70	Investigations of accelerated methods for determination of chloride threshold values for reinforcement corrosion in concrete. Sustainable and Resilient Infrastructure, 2023, 8, 197-208.	2.8	6
71	Laboratory tests simulating corrosion in geothermal power plants: influence of service conditions. Geothermal Energy, 2020, 8, .	1.9	6
72	A discussion of the paper â€œEffect of design parameters on microstructure of steel-concrete interface in reinforced concreteâ€. Cement and Concrete Research, 2020, 128, 105949.	11.0	5

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73	Electrochemical tomography as a nondestructive technique to study localized corrosion of metals. Npj Materials Degradation, 2021, 5, .	5.8	5
74	Monitoring corrosion rates with ER-probes â€" a critical assessment based on experiments and numerical modelling. Corrosion Engineering Science and Technology, 2022, 57, 254-268.	1.4	5
75	Towards understanding corrosion initiation in concrete â€" Influence of local electrochemical properties of reinforcing steel. MATEC Web of Conferences, 2018, 199, 04001.	0.2	4
76	Towards understanding corrosion initiation in concrete â€" influence of local concrete properties in the steel-concrete interfacial zone. MATEC Web of Conferences, 2018, 199, 04002.	0.2	4
77	Corrosion behaviour of pointâ€byâ€point wire and arc additively manufactured steel bars. Materials and Corrosion - Werkstoffe Und Korrosion, 2022, 73, 996-1014.	1.5	4
78	A discussion of the paper â€œInfluence of surface charge on ingress of chloride ion in hardened pastesâ€• by Y. Elakneswaran, T. Nawa, and K. Kurumisawa. Materials and Structures/Materiaux Et Constructions, 2011, 44, 1-3.	3.1	3
79	Influence of casting direction on chloride-induced rebar corrosion. , 2010, , 359-366.		3
80	A multiâ€technique study of corrosion products at the steelâ€"concrete interface under two exposure conditions. Journal of Microscopy, 2022, 286, 191-197.	1.8	3
81	A novel approach to systematically collect critical chloride contents in concrete in an open access data base. Data in Brief, 2019, 27, 104675.	1.0	2
82	A setup for electrochemical corrosion testing at elevated temperature and pressure. Measurement: Journal of the International Measurement Confederation, 2020, 155, 107537.	5.0	2
83	A comparison of methods to assess the resistance of reinforcing steel against chlorideâ€induced corrosion in concrete: Particular consideration of 12% chromium steel. Materials and Corrosion - Werkstoffe Und Korrosion, 0, , .	1.5	2
84	Monitoring chloride concentrations in concrete by means of Ag/AgCl ion-selective electrodes. , 2015, , 192-193.		2
85	Service life cost of selected design and repair strategies for concrete structures in chloride exposure: Particular consideration of 12% chromium steel. Structural Concrete, 0, , .	3.1	2
86	Prof. Dr. Bernhard Elsener â€" dedication on the occasion of his 60th birthday. Materials and Corrosion - Werkstoffe Und Korrosion, 2012, 63, 1046-1046.	1.5	1
87	Critical Analysis of Experiments on Reinforcing Bar Corrosion in Cracked Concrete. ACI Materials Journal, 2020, 117, .	0.2	1
88	A comparison of methods to assess the resistance of reinforcing steel against chlorideâ€induced corrosion in concreteâ€"Particular consideration of 12% chromium steel. Materials and Corrosion - Werkstoffe Und Korrosion, 2022, 73, 306-325.	1.5	1
89	Corrosion of Metallic Fasteners in Timberâ€"Concrete Composite Structures. Materials and Structures/Materiaux Et Constructions, 2019, 52, 1.	3.1	0
90	Effects of model boundary conditions on simulated drying kinetics and inversely determined liquid water permeability for cement-based materials. Drying Technology, 0, , 1-18.	3.1	0