Kurt R Hebert

List of Publications by Year
in descending order

55 papers	1,762 citations	304368 22 h-index	276539 41 g-index
56 all docs	56 docs citations	56 times ranked	1039 citing authors

#	Article	IF	Citations
1	The role of viscous flow of oxide in the growth of self-ordered porous anodic alumina films. Nature Materials, 2009, 8, 415-420.	13.3	384
2	Morphological instability leading to formation of porous anodic oxide films. Nature Materials, 2012, 11, 162-166.	13.3	241
3	Role of Oxide Stress in the Initial Growth of Self-Organized Porous Aluminum Oxide. Electrochimica Acta, 2015, 167, 404-411.	2.6	81
4	Development of Surface Impurity Segregation during Dissolution of Aluminum. Journal of the Electrochemical Society, 1996, 143, 83-91.	1.3	74
5	Modeling the Potential Distribution in Porous Anodic Alumina Films during Steady-State Growth. Journal of the Electrochemical Society, 2006, 153, B566.	1.3	63
6	A Model for Coupled Electrical Migration and Stress-Driven Transport in Anodic Oxide Films. Journal of the Electrochemical Society, 2009, 156, C275.	1.3	52
7	Formation of Aluminum Hydride during Alkaline Dissolution of Aluminum. Journal of the Electrochemical Society, 2008, 155, C16.	1.3	47
8	Observations of the Early Stages of the Pitting Corrosion of Aluminum. Journal of the Electrochemical Society, 1991, 138, 48-54.	1.3	43
9	Positron Annihilation Spectroscopy Study of Interfacial Defects Formed by Dissolution of Aluminum in Aqueous Sodium Hydroxide. Journal of the Electrochemical Society, 2001, 148, B92.	1.3	35
10	Factors controlling the time evolution of the corrosion potential of aluminum in alkaline solutions. Corrosion Science, 2008, 50, 1414-1421.	3.0	35
11	Statistical model of defects in Al-H system. Physical Review B, 2010, 81, .	1.1	35
12	Factors Controlling Stress Generation during the Initial Growth of Porous Anodic Aluminum Oxide. Electrochimica Acta, 2015, 159, 16-22.	2.6	32
13	Electrochemical impedance spectroscopy analysis of corrosion product layer formation on pipeline steel. Electrochimica Acta, 2020, 346, 136232.	2.6	32
14	Stressâ€driven transport in ordered porous anodic films. Physica Status Solidi (A) Applications and Materials Science, 2008, 205, 2396-2399.	0.8	30
15	Stress-generating electrochemical reactions during the initial growth of anodic titanium dioxide nanotube layers. Electrochimica Acta, 2019, 295, 418-426.	2.6	28
16	Measurement of Stress Changes during Growth and Dissolution of Anodic Oxide Films on Aluminum. Journal of the Electrochemical Society, 2014, 161, D256-D262.	1.3	27
17	In Situ Stress Measurement During Aluminum Anodizing Using Phase-Shifting Curvature Interferometry. Journal of the Electrochemical Society, 2013, 160, D501-D506.	1.3	26
18	The Effect of Prior Cathodic Polarization on the Initiation of Pitting on Aluminum. Journal of the Electrochemical Society, 1990, 137, 3723-3730.	1.3	25

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19	A Mathematical Model for the Initiation of Aluminum Etch Tunnels. Journal of the Electrochemical Society, 1998, 145, 3100-3109.	1.3	24
20	Participation of Aluminum Hydride in the Anodic Dissolution of Aluminum in Alkaline Solutions. Journal of the Electrochemical Society, 2008, 155, C189.	1.3	24
21	Surface Films Produced by Cathodic Polarization of Aluminum. Journal of the Electrochemical Society, 1994, 141, 96-104.	1.3	23
22	A Mathematical Model for the Growth of Aluminum Etch Tunnels. Journal of the Electrochemical Society, 2001, 148, B236.	1.3	22
23	Metal Dissolution Kinetics in Aluminum Etch Tunnels. Journal of the Electrochemical Society, 2000, 147, 4103.	1.3	21
24	Passivation of Surfaces within Aluminum Etch Tunnels. Journal of the Electrochemical Society, 1991, 138, 371-379.	1.3	19
25	Initial Events during the Passivation of Rapidly Dissolving Aluminum Surfaces. Journal of the Electrochemical Society, 1994, 141, 1453-1459.	1.3	19
26	Changes Produced by Cathodic Polarization in the Electrical Conduction Behavior of Surface Films on Aluminum. Journal of the Electrochemical Society, 1994, 141, 104-110.	1.3	18
27	Nanoindentation study of corrosion-induced grain boundary degradation in a pipeline steel. Electrochemistry Communications, 2018, 88, 88-92.	2.3	18
28	Evolution of Microscopic Surface Topography during Passivation of Aluminum. Journal of the Electrochemical Society, 1994, 141, 1446-1452.	1.3	17
29	Flow Instability Mechanism for Formation of Self-Ordered Porous Anodic Oxide Films. Electrochimica Acta, 2016, 222, 1186-1190.	2.6	17
30	Tensile stress and plastic deformation in aluminum induced by aqueous corrosion. Acta Materialia, 2016, 115, 434-441.	3.8	16
31	Hydrogen in aluminum during alkaline corrosion. Electrochimica Acta, 2010, 55, 5326-5331.	2.6	15
32	Oxide Growth Efficiencies and Self-Organization of TiO₂Nanotubes. Journal of the Electrochemical Society, 2012, 159, H697-H703.	1.3	15
33	Oxide Microstructural Changes Accompanying Pore Formation During Anodic Oxidation of Aluminum. Electrochimica Acta, 2017, 232, 303-309.	2.6	15
34	Electrochemical Current Noise on Aluminum Microelectrodes. Journal of the Electrochemical Society, 1999, 146, 502-509.	1.3	14
35	Stress Induced by Electrolyte Anion Incorporation in Porous Anodic Aluminum Oxide. Electrochimica Acta, 2017, 238, 368-374.	2.6	14
36	Trapping of Hydrogen Absorbed in Aluminum during Corrosion. Electrochimica Acta, 2015, 168, 199-205.	2.6	13

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37	Self-organization of anodic aluminum oxide layers by a flow mechanism. Electrochimica Acta, 2020, 340, 135879.	2.6	13
38	Effect of Impurities on Interfacial Void Formation in Aluminum. Journal of the Electrochemical Society, 2004, 151, B227.	1.3	12
39	Kinetic Model for Oxide Film Passivation in Aluminum Etch Tunnels. Journal of the Electrochemical Society, 2000, 147, 4111.	1.3	11
40	Atom Probe Tomography Characterization of Thin Copper Layers on Aluminum Deposited by Galvanic Displacement. Langmuir, 2012, 28, 1673-1677.	1.6	11
41	Model of Stress Generation in Anodic Aluminum Oxide Films: Part II. Surface Stress Accumulation Preceding Formation of Self-Organized Pore Arrays. Journal of the Electrochemical Society, 2018, 165, E744-E750.	1.3	10
42	Mechanical degradation due to vacancies produced by grain boundary corrosion of steel. Acta Materialia, 2020, 200, 471-480.	3.8	10
43	Modeling electrochemical and metal-phase processes during alkaline aluminum corrosion. Electrochimica Acta, 2011, 58, 203-208.	2.6	9
44	Stress in aluminum induced by hydrogen absorption during cathodic polarization. Corrosion Science, 2015, 98, 366-371.	3.0	9
45	Stress induced by incorporation of sulfate ions into aluminum oxide films. Electrochemistry Communications, 2018, 88, 39-42.	2.3	8
46	Model of Stress Generation in Anodic Aluminum Oxide Films: Part I. Origin of Stress at the Film Interfaces. Journal of the Electrochemical Society, 2018, 165, E737-E743.	1.3	8
47	Morphology and stress evolution during the initial stages of intergranular corrosion of X70 steel. Electrochimica Acta, 2018, 285, 336-343.	2.6	8
48	An Electrical Model for the Cathodically Charged Aluminum Electrode. Journal of the Electrochemical Society, 1996, 143, 2827-2834.	1.3	7
49	Transient Relaxations of Ionic Conductance during Growth of Porous Anodic Alumina Films: Electrochemical Impedance Spectroscopy and Current Step Experiments. Electrochimica Acta, 2016, 222, 641-647.	2.6	6
50	Use of High-Voltage Cyclic Voltammetry to Characterize Bulk and Interfacial Conduction Processes in Anodic Alumina Films. Electrochimica Acta, 2016, 221, 1-7.	2.6	5
51	Roles of mechanical stress and lower-valent oxide in the formation of anodic titanium dioxide nanotube layers. Electrochimica Acta, 2018, 292, 676-684.	2.6	5
52	The electrical double layer in a nanopore in a barrier surface film. Journal of Electroanalytical Chemistry, 2004, 565, 103-114.	1.9	4
53	Model of vacancy diffusion-assisted intergranular corrosion in low-alloy steel. Acta Materialia, 2021, 220, 117348.	3.8	4
54	Reply to comments on â€˜Electrochemical transients during the initial moments of anodic oxidation of aluminumâ€™. Electrochimica Acta, 2002, 48, 131-133.	2.6	3

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55	A Relationship Among the Transport Properties of Some Concentrated Aqueous Solutions of Binary Electrolytes. Journal of the Electrochemical Society, 1990, 137, 3854-3858.	1.3	2