Eric Chason

List of Publications by Year
in descending order

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78 papers	3,731 citations	186265 28 h-index	128289 60 g-index
80 all docs	80 docs citations	80 times ranked	3230 citing authors

#	Article	IF	Citations
1	Review Article: Stress in thin films and coatings: Current status, challenges, and prospects. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2018, 36, .	2.1	482
2	Making waves: Kinetic processes controlling surface evolution during low energy ion sputtering. Journal of Applied Physics, 2007, 101, 121301.	2.5	434
3	Spontaneous Pattern Formation on Ion Bombarded Si(001). Physical Review Letters, 1999, 82, 2330-2333.	7.8	288
4	Physical Origins of Intrinsic Stresses in Volmerâ€"Weber Thin Films. MRS Bulletin, 2002, 27, 19-25.	3.5	274
5	Model for stress generated upon contact of neighboring islands on the surface of a substrate. Journal of Applied Physics, 2001, 89, 4866-4873.	2.5	187
6	Tutorial: Understanding residual stress in polycrystalline thin films through real-time measurements and physical models. Journal of Applied Physics, 2016, 119, .	2.5	148
7	A kinetic analysis of residual stress evolution in polycrystalline thin films. Thin Solid Films, 2012, 526, 1-14.	1.8	140
8	Stress and microstructure evolution in thick sputtered films. Acta Materialia, 2009, 57, 2055-2065.	7.9	116
9	Growth of whiskers from Sn surfaces: Driving forces and growth mechanisms. Progress in Surface Science, 2013, 88, 103-131.	8.3	105
10	Epitaxial lift-off of electrodeposited single-crystal gold foils for flexible electronics. Science, 2017, 355, 1203-1206.	12.6	104
11	Nonlinear amplitude evolution during spontaneous patterning of ion-bombarded Si(001). Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2000, 18, 115-120.	2.1	96
12	Compressive Stress Generation in Sn Thin Films and the Role of Grain Boundary Diffusion. Physical Review Letters, 2009, 103, 056102.	7.8	85
13	Kinetic Model of Stress Evolution during Coalescence and Growth of Polycrystalline Thin Films. Physical Review Letters, 2007, 98, 216104.	7.8	74
14	Competition between tensile and compressive stress mechanisms during Volmer-Weber growth of aluminum nitride films. Journal of Applied Physics, 2005, 98, 043509.	2.5	70
15	Nonclassical Smoothening of Nanoscale Surface Corrugations. Physical Review Letters, 2000, 84, 5800-5803.	7.8	60
16	Kinetics of ion-induced ripple formation on Cu(001) surfaces. Physical Review B, 2004, 69, .	3.2	55
17	Real-time SEM/FIB studies of whisker growth and surface modification. Jom, 2010, 62, 30-37.	1.9	50
18	Intrinsic tensile stress and grain boundary formation during Volmerâ€"Weber film growth. Applied Physics Letters, 2002, 81, 1204-1206.	3.3	47

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19	Finite Element Modeling of Stress Evolution in Sn Films due to Growth of the Cu6Sn5 Intermetallic Compound. Journal of Electronic Materials, 2009, 38, 2676.	2.2	47
20	Stress behavior of electroplated Sn films during thermal cycling. Journal of Materials Research, 2009, 24, 1522-1528.	2.6	44
21	Understanding the Correlation Between Intermetallic Growth, Stress Evolution, and Sn Whisker Nucleation. IEEE Transactions on Electronics Packaging Manufacturing, 2010, 33, 183-192.	1.4	42
22	Altering the Mechanical Properties of Sn Films by Alloying with Bi: Mimicking the Effect of Pb to Suppress Whiskers. Journal of Electronic Materials, 2013, 42, 312-318.	2.2	41
23	Intrinsic compressive stress in polycrystalline films with negligible grain boundary diffusion. Journal of Applied Physics, 2003, 94, 948-957.	2.5	36
24	Understanding Residual Stress in Electrodeposited Cu Thin Films. Journal of the Electrochemical Society, 2013, 160, D3285-D3289.	2.9	35
25	Kinetic model for thin film stress including the effect of grain growth. Journal of Applied Physics, 2018, 123, .	2.5	32
26	Stress evolution and defect diffusion in Cu during low energy ion irradiation: Experiments and modeling. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2008, 26, 44-51.	2.1	30
27	Spontaneous formation of patterns on sputtered surfaces. Scripta Materialia, 2003, 49, 953-959.	5.2	29
28	Stress Relaxation in Sn-Based Films: Effects of Pb Alloying, Grain Size, and Microstructure. Journal of Electronic Materials, 2012, 41, 588-595.	2.2	28
29	Sputter ripples and radiation-enhanced surface kinetics on Cu(001). Physical Review B, 2005, 72, .	3.2	27
30	Effect of layer properties on stress evolution, intermetallic volume, and density during tin whisker formation. Jom, 2011, 63, 62-68.	1.9	26
31	Correlating whisker growth and grain structure on Sn-Cu samples by real-time scanning electron microscopy and backscattering diffraction characterization. Applied Physics Letters, 2012, 100, .	3.3	26
32	Stress evolution and whisker growth during thermal cycling of Sn films: A comparison of analytical modeling and experiments. Acta Materialia, 2017, 129, 462-473.	7.9	25
33	Relation of Sn whisker formation to intermetallic growth: Results from a novel Snâ€“Cu â€œbimetal ledge specimenâ€. Journal of Materials Research, 2009, 24, 3583-3589.	2.6	22
34	In Situ Measurement of Stress and Whisker/Hillock Density During Thermal Cycling of Sn Layers. Journal of Electronic Materials, 2014, 43, 80-87.	2.2	21
35	Measurements of the Phase and Stress Evolution during Initial Lithiation of Sn Electrodes. Journal of the Electrochemical Society, 2017, 164, A574-A579.	2.9	21
36	Understanding the relation between stress and surface morphology in sputtered films: Atomistic simulations and experiments. Applied Physics Letters, 2009, 95, .	3.3	20

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37	Correlation Between Surface Morphology Evolution and Grain Structure: Whisker/Hillock Formation in Sn-Cu. Jom, 2012, 64, 1176-1183.	1.9	20
38	Stress evolution in Si during low-energy ion bombardment. Journal of Materials Research, 2014, 29, 2942-2948.	2.6	19
39	The influence of deposition parameters on the stress evolution of sputter deposited copper. Surface and Coatings Technology, 2019, 357, 939-946.	4.8	19
40	Surface morphology evolution during sputter deposition of thin films â€" lattice Monte Carlo simulations. Journal of Crystal Growth, 2010, 312, 1183-1187.	1.5	18
41	Whisker growth under a controlled driving force: Pressure induced whisker nucleation and growth. Scripta Materialia, 2020, 182, 43-47.	5.2	18
42	A unified kinetic model for stress relaxation and recovery during and after growth interruptions in polycrystalline thin films. Acta Materialia, 2020, 193, 202-209.	7.9	17
43	Surface stress induced in Cu foils during and after low energy ion bombardment. Nuclear Instruments & Methods in Physics Research B, 2007, 257, 428-432.	1.4	16
44	In Situ Measurement of Voltage-Induced Stress in Conducting Polymers with Redox-Active Dopants. ACS Applied Materials & Interfaces, 2016, 8, 24168-24176.	8.0	16
45	Measuring the Stress Dependence of Nucleation and Growth Processes in Sn Whisker Formation. Jom, 2015, 67, 2416-2424.	1.9	15
46	Thick beryllium coatings by ion-assisted magnetron sputtering. Journal of Materials Research, 2012, 27, 822-828.	2.6	14
47	Equilibrium shape of graphene domains on Ni(111). Physical Review B, 2013, 88, .	3.2	14
48	The microstructural and stress evolution in sputter deposited Ni thin films. Surface and Coatings Technology, 2021, 412, 126973.	4.8	14
49	Quantifying the Rates of Sn Whisker Growth and Plastic Strain Relaxation Using Thermally-Induced Stress. Journal of Electronic Materials, 2016, 45, 21-29.	2.2	13
50	Nanoscale mechanisms of surface stress and morphology evolution in FCC metals under noble-gas ion bombardments. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 2550-2573.	2.1	12
51	Relating residual stress to thin film growth processes via a kinetic model and real-time experiments. Thin Solid Films, 2015, 596, 2-7.	1.8	12
52	Kinetic mechanisms in ion-induced ripple formation on Cu(001) surfaces. Nuclear Instruments & Methods in Physics Research B, 2006, 242, 232-236.	1.4	10
53	FORMATION OF CRACK-LIKE DIFFUSION WEDGES AND COMPRESSIVE STRESS EVOLUTION DURING THIN FILM GROWTH WITH INHOMOGENEOUS GRAIN BOUNDARY DIFFUSIVITY. International Journal of Applied Mechanics, 2009, 01, 1-19.	2.2	10
54	Kinetic Monte Carlo simulations of stress and morphology evolution in polycrystalline thin films. Journal of Applied Physics, 2019, 125, .	2.5	10

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55	Measurements and modeling of residual stress in sputtered TiN and ZrN: Dependence on growth rate and pressure. Surface and Coatings Technology, 2020, 404, 126462.	4.8	10
56	Molecular dynamics simulation of stress induced by energetic particle bombardment in Mo thin films. Materialia, 2021, 16, 101043.	2.7	9
57	Understanding residual stress in thin films: Analyzing wafer curvature measurements for Ag, Cu, Ni, Fe, Ti, and Cr with a kinetic model. Journal of Applied Physics, 2021, 130, .	2.5	9
58	Surface nanopatterning mechanisms by keV ions: Linear instability models and beyond. Nuclear Instruments & Methods in Physics Research B, 2012, 272, 178-182.	1.4	8
59	Epitaxial electrodeposition of freestanding large area single crystal substrates. Applied Physics Letters, 2007, 90, 261909.	3.3	7
60	Studying the Effect of Grain Size on Whisker Nucleation and Growth Kinetics Using Thermal Strain. Journal of Electronic Materials, 2019, 48, 17-24.	2.2	7
61	Erlebacheret al.Reply:. Physical Review Letters, 2002, 88, .	7.8	5
62	Morphology of ion sputtered Cu(001) surface: Transition from unidirectional roughening to bidirectional roughening. Nuclear Instruments & Methods in Physics Research B, 2006, 242, 228-231.	1.4	5
63	Stress control in polycrystalline thin filmsâ€"reduction in adatoms diffusion into grain boundaries via surfactants. Applied Physics Letters, 2010, 96, 211903.	3.3	5
64	Analytical model of transient compressive stress evolution during growth of high diffusivity thin films on substrates. Philosophical Magazine, 2010, 90, 3037-3048.	1.6	5
65	Quantifying the Effect of Stress on Sn Whisker Nucleation Kinetics. Journal of Electronic Materials, 2018, 47, 103-109.	2.2	5
66	Analysis of Pressure-Induced Whisker Nucleation and Growth in Thin Sn Films. Journal of Electronic Materials, 2021, 50, 6639.	2.2	5
67	Kinetic phase diagram for morphological evolution on Cu(001) surfaces during ion bombardment. Nuclear Instruments & Methods in Physics Research B, 2007, 256, 305-312.	1.4	3
68	Effect of grain size on thin film stress and morphology using kinetic Monte Carlo simulations. Journal of Applied Physics, 2020, 128, 145301.	2.5	3
69	Thick Beryllium Coatings by Magnetron Sputtering. Materials Research Society Symposia Proceedings, 2011, 1339, 1.	0.1	2
70	Stress Measurement in Thin Films Using Wafer Curvature: Principles and Applications. , 2018, , 1-33.		2
71	Stress Measurement in Thin Films Using Wafer Curvature: Principles and Applications. , 2019, , 2051-2082.		2
72	Whisker Formation in Sn Coatings on Cu. Materials Research Society Symposia Proceedings, 2004, 851, 316.	0.1	1

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73	Determination of Stresses in Incrementally Deposited Films From Wafer-Curvature Measurements. Journal of Applied Mechanics, Transactions ASME, 2020, 87, .	2.2	1
74	Stress and Microstructure Evolution during the Deposition and Crystallization of DCMagnetron Sputter Deposited Amorphous ITO. Materials Research Society Symposia Proceedings, 2001, 666, 251.	0.1	0
75	A Structural Study of the Amorphous to Crystalline Transformation in In2O3 Thin Films. Materials Research Society Symposia Proceedings, 2002, 747, 1.	0.1	0
76	Observation of ion-induced ripples in Cu(001). Materials Research Society Symposia Proceedings, 2003, 777, 961.	0.1	0
77	Temperature and Flux dependence of ion induced ripple: a way to study defect and relaxation kinetics during ion bombardment. Materials Research Society Symposia Proceedings, 2004, 849, 142.	0.1	0
78	Investigation of Tin (Sn) Film Using an Aerosol Jet Additive Manufacturing Deposition Process. Journal of Electronic Materials, 2017, 46, 5174-5182.	2.2	0