Paul Wynblatt

List of Publications by Year
in descending order

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139 papers	5,808 citations	81839 39 h-index	82499 72 g-index
140 all docs	140 docs citations	140 times ranked	3287 citing authors

#	Article	IF	Citations
1	The dependence of ostwald ripening kinetics on particle volume fraction. Acta Metallurgica, 1979, 27, 489-497.	2.1	485
2	Surface energy and solute strain energy effects in surface segregation. Surface Science, 1977, 65, 511-531.	0.8	398
3	Supported metal crystallites. Progress in Solid State Chemistry, 1975, 9, 21-58.	3.9	330
4	A review of wetting versus adsorption, complexions, and related phenomena: the rosetta stone of wetting. Journal of Materials Science, 2013, 48, 5681-5717.	1.7	238
5	Particle growth in model supported metal catalystsâ€"I. Theory. Acta Metallurgica, 1976, 24, 1165-1174.	2.1	228
6	The distribution of internal interfaces in polycrystals. International Journal of Materials Research, 2004, 95, 197-214.	0.8	198
7	Calcium Segregation to a Magnesium Oxide (100) Surface. Journal of the American Ceramic Society, 1983, 66, 111-117.	1.9	165
8	The chemisorption of CO and NO on Rh(110). Surface Science, 1980, 97, 346-362.	0.8	144
9	Anisotropy of segregation at grain boundaries and surfaces. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 2595-2620.	1.1	144
10	A calculation of relaxation, migration and formation energies for surface defects in copper. Surface Science, 1968, 12, 109-127.	0.8	116
11	Particle growth in model supported metal catalystsâ€"II. Comparison of experiment with theory. Acta Metallurgica, 1976, 24, 1175-1182.	2.1	97
12	A Monte Carlo study of surface segregation in alloys. Surface Science, 1975, 52, 569-587.	0.8	89
13	Equilibrium segregation and interfacial energy in multicomponent systems. Acta Metallurgica Et Materialia, 1991, 39, 771-778.	1.9	84
14	The effect of stress on grain boundary grooving. Acta Metallurgica Et Materialia, 1993, 41, 3541-3547.	1.9	83
15	Experimental evidence for a wetting transition in liquid Gaî—‚Pb alloys. Surface Science, 1996, 345, 85-90.	0.8	79
16	Equilibrium Shape of Copper Crystals Grown on Sapphire. Journal of Materials Science, 2004, 12, 7-18.	1.2	79
17	Development of glue-type potentials for the Alâ€"Pb system: phase diagram calculation. Acta Materialia, 2000, 48, 1753-1761.	3.8	77
18	Thermal nitridation of Si(111) by nitric oxide. Journal of Vacuum Science and Technology, 1981, 18, 965-970.	1.9	74

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19	A calculation of migration energies and binding energies for tungsten adatoms on tungsten surfaces. Surface Science, 1970, 22, 125-136.	0.8	68
20	Habits of Grains in Dense Polycrystalline Solids. Journal of the American Ceramic Society, 2004, 87, 724-726.	1.9	68
21	Calculation of the vacancy migration energy in cubic crystals. Journal of Physics and Chemistry of Solids, 1968, 29, 215-224.	1.9	61
22	Capillary instabilities in thin films: A model of thermal pitting at grain boundary vertices. Acta Metallurgica Et Materialia, 1992, 40, 3239-3248.	1.9	61
23	Grain boundary segregation in oxide ceramics. Journal of the European Ceramic Society, 2003, 23, 2841-2848.	2.8	61
24	Diffusion mechanisms in ordered body-centered cubic alloys. Acta Metallurgica, 1967, 15, 1453-1460.	2.1	57
25	Solid-state wetting transitions at grain boundaries. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 495, 119-125.	2.6	55
26	Computer simulation of phase transitions associated with surface miscibility gaps. Surface Science, 1990, 240, 245-252.	0.8	54
27	The role of electrochemical migration and moisture adsorption on the reliability of metallized ceramic substrates. Journal of Electronic Materials, 1989, 18, 339-353.	1.0	53
28	The effects of prewetting and wetting transitions on the surface energy of liquid binary alloys. Acta Materialia, 1998, 46, 2337-2347.	3.8	53
29	High-resolution electron microscopy and image simulation of TT-,T-, and H-niobia and model silica-supported niobium surface oxides. Chemistry of Materials, 1989, 1, 187-193.	3.2	51
30	The equilibrium form of pure gold crystals. Surface Science, 1998, 398, 259-266.	0.8	50
31	Step energetics of Pb(111) vicinal surfaces from facet shape. Surface Science, 1999, 424, 271-277.	0.8	49
32	Water Adsorption and Surface Conductivity Measurements on<tex>alpha</tex>-Alumina Substrates. IEEE Transactions on Components, Hybrids and Manufacturing Technology, 1987, 10, 247-251.	0.4	48
33	On the existence of surface miscibility gaps in Cuî—¸Ag alloys. Surface Science, 1991, 241, L21-L24.	0.8	48
34	Orientation relationships of copper crystals on c-plane sapphire. Acta Materialia, 2011, 59, 5320-5331.	3.8	47
35	Study of a surface critical phenomenon associated with surface segregation in Cuî—¸Ag alloys. Surface Science, 1993, 290, 335-344.	0.8	46
36	A determination of interfacial energy and interfacial composition in Cuî—¸Pb and Cuî—¸Pbî—¸X alloys by solid state wetting measurements. Acta Metallurgica Et Materialia, 1993, 41, 3331-3340.	1.9	44

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37	Surface segregation in a Ni-1 at% Pd alloy. Surface Science, 1979, 82, 79-92.	0.8	43
38	A model study of catalyst particle coarsening. Scripta Metallurgica, 1973, 7, 969-975.	1.2	41
39	SO2 adsorption on Rh(110) and Pt(110) surfaces. Applications of Surface Science, 1981, 8, 250-259.	1.0	41
40	Monte Carlo simulation of the Cuî—¸Ag (001) semicoherent interphase boundary. Acta Metallurgica Et Materialia, 1990, 38, 177-184.	1.9	41
41	Study of a wetting-related adsorption transition in the Gaâ€“Pb system:. Surface Science, 1998, 415, 336-345.	0.8	41
42	A Monte Carlo study of the structur and composition of (001) semicoherent interphase boundaries in Cuî—¸Agî—¸Au alloys. Acta Metallurgica Et Materialia, 1991, 39, 2681-2691.	1.9	40
43	Computer simulation of surface segregation in ternary alloys. Computational Materials Science, 1999, 15, 250-263.	1.4	39
44	Correlation of Grain Boundary Character with Wetting Behavior. Journal of Materials Science, 2001, 9, 265-273.	1.2	38
45	Scanning tunneling microscopy of equilibrium crystal shapes. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1998, 16, 1059-1065.	0.9	34
46	Pseudopartial Wetting and Precursor Film Growth in Immiscible Metal Systems. Langmuir, 2004, 20, 402-408.	1.6	34
47	Anisotropy of surface composition in a Ni-Au alloy. Surface Science, 1985, 155, 79-100.	0.8	33
48	Relation between grain boundary segregation and grain boundary character in FCC alloys. Journal of Materials Science, 2005, 40, 2765-2773.	1.7	33
49	Twoâ€dimensional phase transitions associated with surface miscibility gaps. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1992, 10, 2709-2717.	0.9	32
50	Continuous and discontinuous transitions on 3D equilibrium crystal shapes: a new look at Pb and Au. Surface Science, 2001, 481, 13-24.	0.8	32
51	Effects of Nb Doping and Segregation on the Grain Boundary Plane Distribution in TiO2. Journal of the American Ceramic Society, 2006, 89, 666-671.	1.9	32
52	Effects of concentration dependent diffusivity on the growth of precursing films of Pb on Cu(111). Surface Science, 2001, 488, 73-82.	0.8	31
53	Development of Finnisâ€“Sinclair type potentials for Pb, Pbâ€“Bi, and Pbâ€“Ni systems: application to surface segregation. Acta Materialia, 1998, 46, 3027-3032.	3.8	30
54	On the formation and migration entropies of vacancies in metals. Journal of Physics and Chemistry of Solids, 1969, 30, 2201-2211.	1.9	29

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55	A Calculation of the Formation and Migration Entropies of Surface Defects in Copper. Physica Status Solidi (B): Basic Research, 1969, 36, 797-808.	0.7	29
56	Equilibrium surface composition of ternary alloys. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1989, 20, 215-223.	1.4	29
57	Computer simulation of Pb/Al interfaces. Acta Materialia, 2000, 48, 2557-2563.	3.8	28
58	The effects of interfacial segregation on wetting in solid metal-on-metal and metal-on-ceramic systems. Acta Materialia, 2000, 48, 4439-4447.	3.8	28
59	Equilibrium crystal shape of Bi-saturated Cu crystals at 1223K. Acta Materialia, 2005, 53, 4057-4064.	3.8	28
60	Correlation Between Grainâ€Boundary Segregation and Grainâ€Boundary Plane Orientation in Nbâ€Doped TiO₂. Journal of the American Ceramic Society, 2005, 88, 2286-2291.	1.9	28
61	Simulation of spreading of precursing Ag films on Ni(). Computational Materials Science, 2002, 25, 503-509.	1.4	27
62	Equilibrium interphase interfaces and premelting of the Pb(110) surface. Physical Review B, 1995, 51, 10972-10980.	1.1	26
63	Melting behavior of nanosized lead particles embedded in an aluminum matrix. Acta Materialia, 2004, 52, 2305-2316.	3.8	25
64	Modeling grain boundary and surface segregation in multicomponent high-entropy alloys. Physical Review Materials, 2019, 3, .	0.9	24
65	Nucleation of two-dimensional phases on the (111) surface of Cu-Ag alloys. Surface Science, 1994, 310, 27-33.	0.8	23
66	Equilibrium form of Pb Bi Ni alloy crystals. Journal of Crystal Growth, 1997, 173, 513-527.	0.7	23
67	Surface segregation in a dilute copperâ€“silver alloy. Journal of Materials Research, 1986, 1, 646-651.	1.2	22
68	Electrochemical Examination of Dendritic Growth on Electronic Devices in HCl Electrolytes. Corrosion, 1990, 46, 665-671.	0.5	22
69	Modification of the gold/graphite interfacial energy by interfacial adsorption of nickel. Journal of Materials Science, 1995, 30, 94-100.	1.7	22
70	Scanning tunneling microscopy of equilibrium crystal shape of Pb particles: test of universality. Surface Science, 1998, 417, L160-L165.	0.8	22
71	Effect of Segregating Impurities on the Grainâ€Boundary Character Distribution of Magnesium Oxide. Journal of the American Ceramic Society, 2009, 92, 3044-3051.	1.9	22
72	Vacancy relaxation in cubic crystals. Journal of Physics and Chemistry of Solids, 1967, 28, 2108-2110.	1.9	21

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73	Flatness and shape of (111) facets of equilibrated Pb crystals. Physical Review B, 1997, 56, 12131-12134.	1.1	21
74	Study of a wetting-related adsorption transition in the Gaâ€“Pb system: 2. Surface composition measurements of Ga-rich liquids. Surface Science, 1998, 415, 346-350.	0.8	21
75	Wetting and energetics of solid Au andAuâ€“Ge/SiC interfaces. Acta Materialia, 1998, 46, 4853-4859.	3.8	20
76	Correlation of Grain Boundary Character with Wetting Behavior. Journal of Materials Science, 2000, 8, 351-361.	1.2	20
77	Summary Abstract: The segregation of gold at copper/silver interphase boundaries. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 1746-1747.	0.9	19
78	Surface composition of dilute Cuâ€“Ag alloys: A comparison between experiment and Monte Carlo modeling. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1991, 9, 27-31.	0.9	19
79	Wetting and prewetting transitions in Gaâ€Pb alloys. Zeitschrift Fur Elektrotechnik Und Elektrochemie, 1998, 102, 1142-1150.	0.9	19
80	Step-step interactions and universal exponents studied via three-dimensional equilibrium crystal shapes. New Journal of Physics, 2002, 4, 60-60.	1.2	19
81	The effects of prewetting and wetting transitions on the surface energy of liquid binary alloys. Acta Materialia, 1998, 46, 2337-2347.	3.8	19
82	Coarsening kinetics of platinum particles on oxide substrates. Acta Metallurgica, 1981, 29, 921-929.	2.1	18
83	Modeling the growth of dendrite-like gold islands on graphite substrates. Journal of Crystal Growth, 1990, 102, 618-628.	0.7	18
84	Interfacial Segregation Effects in Wetting Phenomena. Annual Review of Materials Research, 2008, 38, 173-196.	4.3	18
85	Copper crystals on the (11 $$f{ar{2}}$$ 0) sapphire plane: orientation relationships, triple line ridges and interface shape equilibrium. Journal of Materials Science, 2013, 48, 3013-3026.	1.7	18
86	Surface composition of ternary cu-ag-au alloys: part i. experimental results. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1991, 22, 1833-1840.	1.4	17
87	Observation of a Sharp Transition in Contact Angle in the Wetting of Graphite by Solid Pb-Ni Alloys. Journal of Materials Science, 1999, 7, 173-180.	1.2	17
88	Wetting-related adsorption transitions in liquid Gaâ€“Tl alloys. Surface Science, 2001, 476, L273-L277.	0.8	17
89	Electrochemical Migration of Copper in Adsorbed Moisture Layers. Corrosion, 1989, 45, 643-648.	0.5	14
90	Wetting in Multiphase Systems with Complex Geometries. Journal of Materials Science, 2001, 9, 191-197.	1.2	14

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91	Some aspects of the anisotropy of grain boundary segregation and wetting. Journal of Materials Science, 2006, 41, 7760-7768.	1.7	14
92	Computer Simulations of Epitaxial Interfaces. Materials Research Society Symposia Proceedings, 1988, 141, 399.	0.1	13
93	Observations of a two-dimensional compositional phase transition at the surface of a polycrystalline Pbî—¸Biî—¸Ni alloy. Surface Science, 1994, 302, 179-184.	0.8	13
94	Energy of the Pb{111}â€–Al{111} interface. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2002, 33, 1003-1007.	1.1	13
95	The Structure and Composition of Interphase Boundaries in Ni/Ag-(001) Thin Films Doped with Au. Materials Research Society Symposia Proceedings, 1985, 56, 189.	0.1	12
96	Segregation to the (100) surface of dilute Cuâ€“Ag alloys. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1994, 12, 255-257.	0.9	12
97	A model of compositional surface phase transitions in ternary alloys. Surface Science, 1996, 364, 409-416.	0.8	12
98	Impact of surface phase transitions and structure on surface diffusion profiles of Pb and Bi over Cu(100). Surface Science, 2006, 600, 1265-1276.	0.8	12
99	Surface segregation in multicomponent high entropy alloys: Atomistic simulations versus a multilayer analytical model. Computational Materials Science, 2021, 187, 110101.	1.4	12
100	Chemical Aspects of Equilibrium Segregation to Ceramic Interfaces. , 1981, , 83-95.		12
101	The effect of particle size on the surface composition of microcrystalline alloys. Surface Science, 1985, 160, 475-491.	0.8	11
102	Surface energy, adsorption, and wetting transitions in ternary liquid alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2001, 32, 2851-2858.	1.1	11
103	Importance of interfacial step alignment in hetero-epitaxy and orientation relationships: the case of Ag equilibrated on Ni substrates. Part 1 computer simulations. Journal of Materials Science, 2015, 50, 5262-5275.	1.7	11
104	Importance of interfacial step alignment in hetero-epitaxy and orientation relationships: the case of Ag equilibrated on Ni substrates. Part 2 experiments. Journal of Materials Science, 2015, 50, 5276-5285.	1.7	11
105	Summary Abstract: The elastic properties and the reconstruction of Au and Pt (011) surfaces. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 766-767.	0.9	10
106	Anisotropic phenomena at interfaces in bismuthâ€“saturated copper. Scripta Materialia, 2004, 50, 565-569.	2.6	10
107	Epitaxy for Weakly Interacting Systems of Large Misfit. Materials Research Society Symposia Proceedings, 1987, 94, 111.	0.1	9
108	A study of the Pb/Al (100) interfacial energy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2002, 33, 2569-2572.	1.1	9

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109	Combination of a Besocke-type scanning tunneling microscope with a scanning electron microscope. Review of Scientific Instruments, 2001, 72, 3546-3551.	0.6	8
110	Anisotropy of Segregation at Grain Boundaries and Surfaces. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2007, 38, 438-439.	1.1	8
111	Effects of anisotropy on the equilibrium shape of nanoscale pores at grain boundaries. Acta Materialia, 2013, 61, 4572-4580.	3.8	8
112	Surface composition of ternary cu-ag-au alloys: part ii. a comparison of experiment with theoretical models. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1991, 22, 1841-1848.	1.4	7
113	Summary Abstract: Anisotropy of equilibrium surface composition of alloys. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 1224-1225.	0.9	6
114	Calibration of Auger spectra and equilibrium surface composition in a dilute copperâ€“gold alloy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1988, 6, 2253-2259.	0.9	6
115	The effects of Tl additions on a wetting-related adsorption transition in liquid Gaâ€“Pb alloys. Surface Science, 2000, 465, 97-102.	0.8	6
116	Origin of an unusual systematic variation in the heteroepitaxy of AgÂonÂNi â€“ The roles of twinning and step alignment. Acta Materialia, 2019, 168, 121-132.	3.8	5
117	Heteroepitaxy of FCC-on-FCC systems of large misfit. Acta Materialia, 2022, 225, 117550.	3.8	5
118	The shapes of two-phase particles: The case of trapped voids in lead particles embedded in silicon. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2001, 81, 1873-1886.	0.7	4
119	An Auger microscopy study of the meeting and interdiffusion of pure Pb and Bi adsorbed layers on polycrystalline Cu. Surface Science, 2005, 575, 69-74.	0.8	4
120	Two-dimensional versus three-dimensional constraints in hetero-epitaxy/orientation relationships. Journal of Materials Science, 2017, 52, 9630-9639.	1.7	4
121	Two-Dimensional Phase Transitions Associated with a Surface Miscibility Gap in Cu-Ag Alloys. Materials Research Society Symposia Proceedings, 1990, 202, 421.	0.1	3
122	Influence of Segregation Effects on the Energies of Lead/Graphite and Gold/Graphite Interfaces. Materials Research Society Symposia Proceedings, 1993, 318, 393.	0.1	3
123	On the relation between the anisotropies of grain boundary segregation and grain boundary energy. International Journal of Materials Research, 2005, 96, 1142-1146.	0.8	3
124	Factors Affecting the Coverage Dependence of the Diffusivity of One Metal over the Surface of Another. International Journal of Thermophysics, 2007, 28, 646-660.	1.0	3
125	Growth and orientation relationships of Ni and Cu films annealed on slightly miscut <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si4.gif" overflow="scroll"><mml:mrow><mml:mo stretchy="false">(</mml:mo><mml:mn>1</mml:mn><mml:mspace width="5.0pt") Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 97 Td		3
126	Summary Abstract: Study of niobiaâ€“silica interfacial phenomena with model thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 1694-1695.	0.9	2

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127	A Survey of Segregation at Interphase Boundaries in Ternary Ni-Ag-X Alloys. Materials Research Society Symposia Proceedings, 1990, 205, 369.	0.1	2
128	Interdiffusion of adsorbed Pb and Bi on Cu(100). Surface Science, 2007, 601, 1101-1107.	0.8	2
129	Monte Carlo Modeling of Interphase Boundaries in Cu-Ag and Cu-Ag-Au Alloys. Materials Research Society Symposia Proceedings, 1990, 205, 375.	0.1	1
130	On the existence of surface miscibility gaps in Cuî—¸Ag alloys. Surface Science Letters, 1991, 241, L21-L24.	0.1	1
131	Molecular Dynamics Study of Disordering and Premelting of the Pb(110) Surface. Materials Research Society Symposia Proceedings, 1994, 355, 227.	0.1	1
132	Comparison between modeling and experimental measurements of interfacial properties. Applied Surface Science, 2003, 219, 39-46.	3.1	1
133	A model of oxygen adsorption at liquid copper surfaces. Surface Science, 2010, 604, 1369-1376.	0.8	1
134	Influence of step structure on preferred orientation relationships of Ag deposited on Ni(111). Acta Materialia, 2020, 200, 287-296.	3.8	1
135	A Comparison of the Surface Composition of Solid and Liquid Alloys. Materials Research Society Symposia Proceedings, 1986, 83, 67.	0.1	0
136	Reply to Comment on Pseudopartial Wetting and Precursor Film Growth in Immiscible Metal Systems. Langmuir, 2005, 21, 3724-3724.	1.6	0
137	Introduction to Interfaces and Diffusion. NATO Science for Peace and Security Series B: Physics and Biophysics, 2008, , 393-424.	0.2	0
138	Grain Boundary Orientations in a Fe-Mn-Cu Polycrystalline Alloy. Ceramic Transactions, 0, , 213-220.	0.1	0
139	On the relation between the anisotropies of grain boundary segregation and grain boundary energy. International Journal of Materials Research, 2022, 96, 1142-1146.	0.1	0