Hanchen Huang

List of Publications by Year
in descending order

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122 papers	4,058 citations	117625 34 h-index	123424 61 g-index
122 all docs	122 docs citations	122 times ranked	3582 citing authors

#	Article	IF	Citations
1	Design of high SERS sensitive substrates based on branched Ti nanorods. Scientific Reports, 2022, 12, .	3.3	1
2	Branching of Titanium Nanorods. Nanomaterials, 2021, 11, 1070.	4.1	2
3	Simultaneous Thermal Stability and Ultrahigh Sensitivity of Heterojunction SERS Substrates. Nanomaterials, 2019, 9, 830.	4.1	14
4	When is Lonely Adatom Model valid?. Surface Science, 2019, 682, 60-63.	1.9	0
5	A theory of growing crystalline nanorods â€“ Mode I. Surface Science, 2018, 674, 18-24.	1.9	3
6	Micro-scale modeling of interface-dominated mechanical behavior. Journal of Materials Science, 2018, 53, 5546-5561.	3.7	25
7	A generalized theory of thin film growth. Surface Science, 2018, 669, 154-159.	1.9	7
8	Design of Ag nanorods for sensitivity and thermal stability of surface-enhanced Raman scattering. Nanotechnology, 2017, 28, 405602.	2.6	14
9	Degradation Mechanism of Ag Nanorods for Surface Enhanced Raman Spectroscopy. Scientific Reports, 2017, 7, 16282.	3.3	18
10	Clustering on Magnesium Surfaces â€“ Formation and Diffusion Energies. Scientific Reports, 2017, 7, 5167.	3.3	7
11	Generalized theory of smallest diameter of metallic nanorods. Physical Review Materials, 2017, 1, .	2.4	3
12	Synergy to discovery and innovation â€” Growth of nanorods. Theoretical and Applied Mechanics Letters, 2016, 6, 249-252.	2.8	1
13	Closed-form theory of nuclei separation on highly anisotropic surfaces. Applied Surface Science, 2016, 390, 107-110.	6.1	3
14	A first-principles study of the avalanche pressure of alpha zirconium. RSC Advances, 2016, 6, 72551-72558.	3.6	1
15	Control of Separation and Diameter of Ag Nanorods through Self-organized Seeds. Scientific Reports, 2015, 5, 16826.	3.3	9
16	Shape and surface chemistry effects on the cytotoxicity and cellular uptake of metallic nanorods and nanospheres. Journal of Biomedical Materials Research - Part A, 2015, 103, 3940-3955.	4.0	37
17	Combined Hydrophobicity and Mechanical Durability through Surface Nanoengineering. Scientific Reports, 2015, 5, 9260.	3.3	12
18	Wedding Cake Growth Mechanism in One-Dimensional and Two-Dimensional Nanostructure Evolution. Nano Letters, 2015, 15, 7766-7772.	9.1	43

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19	Enhanced thermal stability of Ag nanorods through capping. Applied Physics Letters, 2014, 105, 213104.	3.3	21
20	Controllable growth of aluminum nanorods using physical vapor deposition. Nanoscale Research Letters, 2014, 9, 400.	5.7	10
21	Mechanical Properties of Silicon Carbide Nanowires: Effect of Size-Dependent Defect Density. Nano Letters, 2014, 14, 754-758.	9.1	161
22	Functionalized aligned silver nanorod arrays for glucose sensing through surface enhanced Raman scattering. RSC Advances, 2014, 4, 23382.	3.6	45
23	Pressure effect on stabilities of self-Interstitials in HCP-Zirconium. Scientific Reports, 2014, 4, 5735.	3.3	18
24	Response embedded atom method of interatomic potentials. Physical Review B, 2013, 87, .	3.2	12
25	Smallest Metallic Nanorods Using Physical Vapor Deposition. Physical Review Letters, 2013, 110, 136102.	7.8	40
26	Axial ratio dependence of the stability of self-interstitials in HCP structures. Journal of Nuclear Materials, 2013, 437, 293-296.	2.7	10
27	Controversy Over Elastic Constants Based on Interatomic Potentials. Journal of Engineering Materials and Technology, Transactions of the ASME, 2013, 135, .	1.4	4
28	Syntheses and applications of small metallic nanorods from solution and physical vapor deposition. Nanotechnology Reviews, 2013, 2, 259-267.	5.8	8
29	Airtight metallic sealing at room temperature under small mechanical pressure. Scientific Reports, 2013, 3, 3066.	3.3	12
30	Radiation effects and tolerance mechanism in Î²-eucryptite. Journal of Applied Physics, 2013, 113, 033504.	2.5	5
31	Size dependence of twin formation energy of metallic nanowires. International Journal of Smart and Nano Materials, 2013, 4, 112-118.	4.2	3
32	Smallest separation of nanorods from physical vapor deposition. Applied Physics Letters, 2012, 100, .	3.3	8
33	Anomaly of film porosity dependence on deposition rate. Applied Physics Letters, 2012, 100, 061601.	3.3	16
34	Interaction of Edge Dislocation With Stacking Fault Tetrahedron in Cu. Journal of Engineering Materials and Technology, Transactions of the ASME, 2012, 134, .	1.4	1
35	Diffusion boundary condition at surface steps. Journal of Crystal Growth, 2012, 353, 174-176.	1.5	0
36	A Framework of Growing Crystalline Nanorods. Jom, 2012, 64, 1253-1257.	1.9	10

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37	Atomistic study of grain boundary sink strength under prolonged electron irradiation. Journal of Nuclear Materials, 2012, 422, 69-76.	2.7	40
38	Stability of self-interstitial atoms in hcp-Zr. Journal of Nuclear Materials, 2012, 429, 233-236.	2.7	43
39	Twin boundaries in nanowiresâ€"controllable introduction. Jom, 2011, 63, 58-61.	1.9	1
40	From covalent bonding to coalescence of metallic nanorods. Nanoscale Research Letters, 2011, 6, 559.	5.7	6
41	Another kinetic mechanism of stabilizing multiple-layer surface steps. Applied Physics Letters, 2011, 98, .	3.3	14
42	Anomaly in dependence of radiation-induced vacancy accumulation on grain size. Journal of Nuclear Materials, 2010, 405, 261-265.	2.7	15
43	Binding of In and Pb surfactants on Cu{111} surfaces. Surface Science, 2010, 604, 868-871.	1.9	7
44	Stress control in polycrystalline thin filmsâ€"reduction in adatoms diffusion into grain boundaries via surfactants. Applied Physics Letters, 2010, 96, 211903.	3.3	5
45	Controllable introduction of twin boundaries into nanowires. Journal of Applied Physics, 2010, 108, 103507.	2.5	11
46	Collective behavior of complex dislocation structures. Philosophical Magazine, 2010, 90, 3617-3619.	1.6	1
47	Twin Cu nanowires using energetic beams. Applied Physics Letters, 2009, 95, 111914.	3.3	6
48	Do Twin Boundaries Always Strengthen Metal Nanowires?. Nanoscale Research Letters, 2009, 4, 34-38.	5.7	70
49	Mechanics of Crystalline Nanowires. MRS Bulletin, 2009, 34, 178-183.	3.5	166
50	Diffusion and formation energies of adatoms and vacancies on magnesium surfaces. Computational Materials Science, 2009, 47, 121-127.	3.0	27
51	Atomistic Simulations of Mechanics of Nanostructures. MRS Bulletin, 2009, 34, 160-166.	3.5	24
52	Quantum mechanical calculations of uranium phases and niobium defects in Î³-uranium. Journal of Nuclear Materials, 2008, 375, 113-119.	2.7	38
53	An atomistic perspective on twinning phenomena in nano-enhanced fcc metals. Jom, 2008, 60, 79-84.	1.9	38
54	Stability of single-wall silicon carbide nanotubes â€“ molecular dynamics simulations. Computational Materials Science, 2008, 43, 664-669.	3.0	71

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55	Size dependence of twin formation energy in cubic SiC at the nanoscale. Applied Physics Letters, 2008, 92, 261908.	3.3	12
56	Twin formation during SiC nanowire synthesis. Journal of Applied Physics, 2008, 104, .	2.5	37
57	Ab initio determination of Ehrlichâ€“Schwoebel barriers on Cu{111}. Applied Physics Letters, 2008, 92, .	3.3	35
58	Characteristic Length Scale of Nanorod Diameter during Growth. Physical Review Letters, 2008, 101, 266102.	7.8	19
59	Nanowebs and nanocables of silicon carbide. Nanotechnology, 2007, 18, 335607.	2.6	18
60	Effects of three-dimensional Ehrlich-Schwoebel barrier on texture selection during Cu nanorod growth. Applied Physics Letters, 2007, 91, 121914.	3.3	16
61	Diffusion on (110) surface of molecular crystal pentaerythritol tetranitrate. Applied Physics Letters, 2007, 90, 101906.	3.3	5
62	Three-stage transition during silicon carbide nanowire growth. Applied Physics Letters, 2007, 90, 083106.	3.3	46
63	Atom diffusion of small Cu clusters across facetâ€“facet barriers over Cu{1â€‰1â€‰1} surfaces. Modelling and Simulation in Materials Science and Engineering, 2007, 15, 419-426.	2.0	9
64	Structural transformation of ZnO nanostructures. Applied Physics Letters, 2007, 90, 023115.	3.3	68
65	Double rotation mechanism in small Cu clusters concerted diffusion over Cu{111} surfaces. Surface Science, 2007, 601, 931-935.	1.9	9
66	From uniform Cu thin films to ã€˚110ã€‰ and ã€˚111ã€‰ columns. Vacuum, 2007, 81, 583-589.	3.5	2
67	Influence of soaking effects to the shear strength of the colluviums on Mt. Da-Lum. Wuhan University Journal of Natural Sciences, 2007, 12, 577-582.	0.4	0
68	Youngâ€™s moduli of ZnO nanoplates: Ab initio determinations. Applied Physics Letters, 2006, 89, 183111.	3.3	86
69	Spontaneous growth of indium nanostructures. Journal of Crystal Growth, 2006, 297, 300-305.	1.5	11
70	Growth study of nanocrystalline Ni and Ni3Al using molecular dynamics. Materials Research Society Symposia Proceedings, 2006, 978, .	0.1	0
71	Novel deformation mechanism of twinned nanowires. Applied Physics Letters, 2006, 88, 203112.	3.3	118
72	Size-dependent elasticity of nanowires: Nonlinear effects. Physical Review B, 2005, 71, .	3.2	323

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73	Nanoplate elasticity under surface reconstruction. Applied Physics Letters, 2005, 86, 151912.	3.3	69
74	Growth of Y-Shaped Nanorods through Physical Vapor Deposition. Nano Letters, 2005, 5, 2505-2508.	9.1	133
75	Texture Evolution During Thin Film Deposition. , 2005, , 1039-1049.		1
76	Texture Evolution During Thin Film Deposition. , 2005, , 1039-1049.		7
77	Chemistry-mediated two-dimensional to three-dimensional transition of In thin films. Applied Physics Letters, 2004, 84, 5401-5403.	3.3	2
78	Mechanisms of Cu<111> Columns Growth. Materials Research Society Symposia Proceedings, 2004, 849, 177.	0.1	4
79	Diffusion barriers on Cu surfaces and near steps. Modelling and Simulation in Materials Science and Engineering, 2004, 12, 1209-1225.	2.0	64
80	Glide of edge dislocations in tungsten and molybdenum. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 365, 96-100.	5.6	19
81	Atomistic simulator of polycrystalline thin film deposition in three dimensions. Journal of Computer-Aided Materials Design, 2004, 11, 59-74.	0.7	12
82	Are surfaces elastically softer or stiffer?. Applied Physics Letters, 2004, 84, 1940-1942.	3.3	325
83	Shockley partial dislocations to twin: Another formation mechanism and generic driving force. Applied Physics Letters, 2004, 85, 5983-5985.	3.3	138
84	Kinetic Limitations in Two-and Three-Dimensional Growth. Materials Research Society Symposia Proceedings, 2004, 849, 100.	0.1	2
85	Multiscale modelling of nanomechanics and micromechanics: an overview. Philosophical Magazine, 2003, 83, 3475-3528.	1.6	145
86	Dislocation nucleation in the initial stage during nanoindentation. Philosophical Magazine, 2003, 83, 3609-3622.	1.6	61
87	Young's Modulus Variation with Thickness of Thin Films. Materials Research Society Symposia Proceedings, 2003, 795, 409.	0.1	1
88	Copper thin film of alternating textures. Applied Physics Letters, 2003, 82, 4265-4267.	3.3	19
89	Kinetics-limited surface structures at the nanoscale. Applied Physics Letters, 2003, 82, 1272-1274.	3.3	15
90	Surface kinetics: Step-facet barriers. Applied Physics Letters, 2003, 83, 4752-4754.	3.3	39

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91	Development of microstructure in nanostructures and thin films. , 2003, , .		1
92	Engineering kinetic barriers in copper metallization. Applied Physics Letters, 2002, 81, 4359-4361.	3.3	20
93	Development of ã€˜110ã€‰ texture in copper thin films. Applied Physics Letters, 2002, 80, 2290-2292.	3.3	44
94	Schwoebel-Ehrlich barrier: from two to three dimensions. Applied Physics Letters, 2002, 80, 3295-3297.	3.3	100
95	Growth shapes of Ag crystallites on the Si(111) surface. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2002, 20, 2492.	1.6	22
96	Facet-Facet Barrier on Surfaces: Proposal and Experimental Validation. Materials Research Society Symposia Proceedings, 2002, 749, 1.	0.1	0
97	Multiple Layers of Copper Thin Films of Alternating Textures. Materials Research Society Symposia Proceedings, 2002, 750, 1.	0.1	0
98	Interaction of a transonic dislocation with subsonic dislocation and point defect clusters. Computational Materials Science, 2002, 23, 95-104.	3.0	11
99	Dislocation nucleation and propagation during thin film deposition under compression. Computational Materials Science, 2002, 23, 155-165.	3.0	17
100	Diffusion of clusters down aluminum islands. Computational Materials Science, 2002, 23, 85-94.	3.0	8
101	Texture competition during thin film deposition â€“ effects of grain boundary migration. Computational Materials Science, 2002, 23, 190-196.	3.0	16
102	Parallelization strategies for Monte Carlo simulations of thin film deposition. Computer Physics Communications, 2002, 144, 34-45.	7.5	3
103	Adatom diffusion along and down island steps. Journal of Computer-Aided Materials Design, 2002, 9, 75-80.	0.7	13
104	Self-interstitial Diffusion in Î±-Zirconium. Materials Research Society Symposia Proceedings, 2001, 677, 7311.	0.1	0
105	Dislocation Nucleation and Propagation During Deposition of Cubic Metal Thin Films. Materials Research Society Symposia Proceedings, 2001, 677, 7321.	0.1	0
106	GFCUBHEX: Program to calculate elastic Green's functions and displacement fields for applications in atomistic simulations of defects in cubic and HCP crystals. Computer Physics Communications, 2001, 137, 312-324.	7.5	10
107	Destabilization of dislocation dipole at high velocity. Applied Physics Letters, 2001, 79, 3621-3623.	3.3	13
108	Lattice Monte Carlo models of thin film deposition. Thin Solid Films, 2000, 365, 189-200.	1.8	114

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109	Three-dimensional Schwoebelâ€“Ehrlich barrier. Journal of Computer-Aided Materials Design, 2000, 7, 195-201.	0.7	17
110	Atomistic simulation of texture competition during thin film deposition. Journal of Computer-Aided Materials Design, 2000, 7, 203-216.	0.7	16
111	Atomistic studies of stress effects on self-interstitial diffusion in Î±-titanium*. Journal of Computer-Aided Materials Design, 2000, 7, 97-110.	0.7	10
112	Stability of Dislocation Short-Range Reactions in BCC Crystals. Journal of Engineering Materials and Technology, Transactions of the ASME, 1999, 121, 143-150.	1.4	18
113	Multi-lattice Monte Carlo model of thin films. Journal of Computer-Aided Materials Design, 1999, 6, 117-127.	0.7	26
114	Diffusion and clustering on the titanium (0001) surface. Journal of Computer-Aided Materials Design, 1999, 6, 311-321.	0.7	14
115	Growth and Structure of Metallic Barrier Layers and Interconnect Films II: Atomistic Simulations of Film Deposition onto Inclined Surfaces. Materials Research Society Symposia Proceedings, 1999, 562, 129.	0.1	3
116	Multi-scale modeling of polycrystal plasticity: a workshop report. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 251, 1-22.	5.6	37
117	Thin film deposition: fundamentals and modeling. Computational Materials Science, 1998, 12, 354-380.	3.0	112
118	An atomistic simulator for thin film deposition in three dimensions. Journal of Applied Physics, 1998, 84, 3636-3649.	2.5	210
119	A swelling model for stoichiometric SiC at temperatures below 1000Â°C under neutron irradiation. Journal of Nuclear Materials, 1997, 250, 192-199.	2.7	31
120	Molecular dynamics determination of defect energetics in beta -SiC using three representative empirical potentials. Modelling and Simulation in Materials Science and Engineering, 1995, 3, 615-627.	2.0	105
121	Molecular dynamics calculations of defect energetics in Î²-SiC. Journal of Nuclear Materials, 1994, 212-215, 148-153.	2.7	30
122	Atomistic simulations of interconnect metallization. , 0, , .		0