

# Ah Heuer

## List of Publications by Year in descending order

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106  
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citations

76326

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106  
docs citations

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times ranked

2894  
citing authors

#	ARTICLE	IF	CITATIONS
1	Thin-film shape-memory alloy actuated micropumps. <i>Journal of Microelectromechanical Systems</i> , 1998, 7, 245-251.	2.5	318
2	Oxygen and aluminum diffusion in $\gamma$ -Al <sub>2</sub> O <sub>3</sub> : How much do we really understand?. <i>Journal of the European Ceramic Society</i> , 2008, 28, 1495-1507.	5.7	237
3	Transformation-toughening in partially-stabilized zirconia (PSZ). <i>Acta Metallurgica</i> , 1979, 27, 1649-1654.	2.1	183
4	On a martensitic phase transformation in zirconia (ZrO <sub>2</sub> ) <sup>I</sup> . Metallographic evidence. <i>Acta Metallurgica</i> , 1972, 20, 1281-1289.	2.1	173
5	TiNi (shape memory) films silicon for MEMS applications. <i>Journal of Microelectromechanical Systems</i> , 1995, 4, 206-212.	2.5	162
6	Synthesis and characterization of TiO <sub>2</sub> thin films on organic self-assembled monolayers: Part I. Film formation from aqueous solutions. <i>Journal of Materials Research</i> , 1995, 10, 692-698.	2.6	145
7	Fracture toughness of polysilicon MEMS devices. <i>Sensors and Actuators A: Physical</i> , 2000, 82, 274-280.	4.1	145
8	Overview no. 45. <i>Acta Metallurgica</i> , 1985, 33, 2101-2112.	2.1	142
9	On the growth of Al <sub>2</sub> O <sub>3</sub> scales. <i>Acta Materialia</i> , 2013, 61, 6670-6683.	7.9	140
10	On a martensitic phase transformation in zirconia (ZrO <sub>2</sub> ) <sup>II</sup> . Crystallographic aspects. <i>Acta Metallurgica</i> , 1974, 22, 409-417.	2.1	116
11	The displacive cubic $\rightarrow$ tetragonal transformation in ZrO <sub>2</sub> alloys. <i>Acta Metallurgica</i> , 1987, 35, 661-666.	2.1	109
12	Carbide precipitation in austenitic stainless steel carburized at low temperature. <i>Acta Materialia</i> , 2007, 55, 1895-1906.	7.9	97
13	A new technique for producing large-area as-deposited zero-stress LPCVD polysilicon films: the MultiPoly process. <i>Journal of Microelectromechanical Systems</i> , 2000, 9, 485-494.	2.5	96
14	High temperature plastic anisotropy in MoSi <sub>2</sub> single crystals. <i>Acta Metallurgica Et Materialia</i> , 1995, 43, 657-668.	1.8	90
15	Monte Carlo simulation of effective elastic constants of polycrystalline thin films. <i>Acta Materialia</i> , 1997, 45, 2247-2255.	7.9	88
16	Dynamic fatigue of silicon. <i>Current Opinion in Solid State and Materials Science</i> , 2004, 8, 71-76.	11.5	85
17	Fracture Toughness, Fracture Strength, and Stress Corrosion Cracking of Silicon Dioxide Thin Films. <i>Journal of Microelectromechanical Systems</i> , 2008, 17, 943-947.	2.5	85
18	Solution hardening by aliovalent cations in ionic crystals. <i>Materials Science and Engineering</i> , 1977, 28, 81-97.	0.1	84

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19	Deposition mechanism of oxide thin films on self-assembled organic monolayers. Paper presented at Sympo. Synergistic Synthesis of Inorganic Materials, March 1996, Schloß Ringberg, Germany. Acta Materialia, 1998, 46, 801-815.	7.9	84
20	On basal slip and basal twinning in sapphire ( $\alpha$ -Al <sub>2</sub> O <sub>3</sub> ). Basal slip revisited. Acta Materialia, 1996, 44, 2145-2152.	7.9	79
21	Enhanced fatigue resistance in 316L austenitic stainless steel due to low-temperature paraequilibrium carburization. Acta Materialia, 2007, 55, 5572-5580.	7.9	75
22	Oxygen self-diffusion in corundum ( $\alpha$ -Al <sub>2</sub> O <sub>3</sub> ): A conundrum. Philosophical Magazine Letters, 1999, 79, 619-627.	1.2	72
23	Stacking fault energy in sapphire ( $\alpha$ -Al <sub>2</sub> O <sub>3</sub> ). Acta Metallurgica, 1984, 32, 97-105.	2.1	69
24	Stress-induced martensitic transformation and ferroelastic deformation adjacent microhardness indents in tetragonal zirconia single crystals. Acta Materialia, 1998, 46, 2151-2171.	7.9	67
25	On the slip systems in MoSi <sub>2</sub> . Acta Metallurgica Et Materialia, 1992, 40, 3159-3165.	1.8	65
26	A robust co-sputtering fabrication procedure for TiNi shape memory alloys for MEMS. Journal of Microelectromechanical Systems, 2001, 10, 69-79.	2.5	65
27	Enhanced corrosion resistance of interstitially hardened stainless steel: Implications of a critical passive layer thickness for breakdown. Acta Materialia, 2012, 60, 716-725.	7.9	65
28	Work-hardening in sapphire ( $\alpha$ -Al <sub>2</sub> O <sub>3</sub> ). Acta Metallurgica, 1977, 25, 25-33.	2.1	61
29	Orientation dependence of nitrogen supersaturation in austenitic stainless steel during low-temperature gas-phase nitriding. Acta Materialia, 2014, 79, 339-350.	7.9	60
30	The use of laser scanning confocal microscopy (LSCM) in materials science. Journal of Microscopy, 2010, 240, 173-180.	1.8	59
31	Mechanical fatigue of polysilicon: Effects of mean stress and stress amplitude. Acta Materialia, 2006, 54, 667-678.	7.9	58
32	Enhanced Corrosion Resistance of Stainless Steel Carburized at Low Temperature. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2009, 40, 1805-1810.	2.2	57
33	Synthesis and characterization of TiO <sub>2</sub> thin films on organic self-assembled monolayers: Part II. Film formation via an organometallic route. Journal of Materials Research, 1995, 10, 699-703.	2.6	55
34	Precipitation from cubic ZrO <sub>2</sub> solid solutions. Acta Metallurgica, 1983, 31, 387-395.	2.1	54
35	Anodic oxidation during MEMS processing of silicon and polysilicon: native oxides can be thicker than you think. Journal of Microelectromechanical Systems, 2005, 14, 914-923.	2.5	48
36	High-temperature precipitation hardening of Y <sub>2</sub> O <sub>3</sub> partially-stabilized ZrO <sub>2</sub> (Y-PSZ) single crystals. Acta Metallurgica, 1989, 37, 559-567.	2.1	47

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37	A zonal dislocation mechanism for rhombohedral twinning in sapphire ( $\hat{\Gamma}\pm\text{-Al}_2\text{O}_3$ ). Acta Metallurgica Et Materialia, 1994, 42, 1367-1372.	1.8	47
38	Enhanced Carbon Diffusion in Austenitic Stainless Steel Carburized at Low Temperature. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2009, 40, 1768-1780.	2.2	47
39	On Basal slip and basal twinning in sapphire ( $\hat{\Gamma}\pm\text{-Al}_2\text{O}_3$ )â€”II. A new model of basal twinning. Acta Materialia, 1996, 44, 2153-2164.	7.9	42
40	Surface oxide effects on failure of polysilicon MEMS after cyclic and monotonic loading. Scripta Materialia, 2008, 59, 912-915.	5.2	41
41	Work hardening and recovery in sapphire ( $\hat{\Gamma}\pm\text{-Al}_2\text{O}_3$ ) undergoing prism plane deformation. Acta Metallurgica, 1982, 30, 2205-2218.	2.1	38
42	A disconnection mechanism of enhanced grain boundary diffusion in $\text{Al}_2\text{O}_3$ . Scripta Materialia, 2015, 102, 15-18.	5.2	37
43	Interstitial defects in 316L austenitic stainless steel containing â€œcolossalâ€-carbon concentrations: An internal friction study. Scripta Materialia, 2007, 56, 1067-1070.	5.2	36
44	Overview No. 6. Acta Metallurgica, 1979, 27, 1677-1691.	2.1	34
45	An improved model of break-up of dislocation dipoles into loops: Application to sapphire ( $\hat{\Gamma}\pm\text{-Al}_2\text{O}_3$ ). Acta Metallurgica, 1982, 30, 491-498.	2.1	33
46	Plastic deformation in nonstoichiometric $\text{UO}_2 + x$ single crystalsâ€”II. Deformation at high temperatures. Acta Metallurgica, 1988, 36, 1073-1083.	2.1	32
47	On basal slip and basal twinning in sapphire ( $\hat{\Gamma}\pm\text{-Al}_2\text{O}_3$ )â€”III. HRTEM of the twin/matrix interface. Acta Materialia, 1996, 44, 2165-2174.	7.9	30
48	Dislocation substructures in doped sapphire ( $\hat{\Gamma}\pm\text{-Al}_2\text{O}_3$ ) deformed by basal slip. Acta Metallurgica, 1982, 30, 147-156.	2.1	29
49	Plastic deformation in nonstoichiometric $\text{UO}_2+x$ single crystalsâ€”I. Deformation at low temperatures. Acta Metallurgica, 1988, 36, 1061-1071.	2.1	29
50	Resistance curve behavior of supertough MgO-partially-stabilized $\text{ZrO}_2$ . Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1988, 105-106, 83-89.	5.6	27
51	Electrostrictive stresses and breakdown of thin passive films on stainless steel. Electrochimica Acta, 2011, 58, 157-160.	5.2	27
52	A titanium-nickel shape-memory alloy actuated micropump. , 0, , .		25
53	The effects of heterogeneity and anisotropy on the size effect in cracked polycrystalline films. International Journal of Fracture, 1999, 95, 19-39.	2.2	24
54	Dislocations and Mechanical Properties of Ceramics. Dislocations in Solids, 2004, 12, 339-402.	1.6	24

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55	HREM studies of coherent and incoherent interfaces in ZrO <sub>2</sub> -containing ceramics: A preliminary account. <i>Ultramicroscopy</i> , 1985, 18, 335-348.	1.9	23
56	High temperature precipitation hardening of Y <sub>2</sub> O <sub>3</sub> partially-stabilized ZrO <sub>2</sub> (Y-PSZ) single crystals <sup>II</sup> . A quantitative model for the hardening. <i>Acta Metallurgica Et Materialia</i> , 1993, 41, 3171-3180.	1.8	23
57	Static and electrically actuated shaped MEMS mirrors. <i>Journal of Microelectromechanical Systems</i> , 2005, 14, 29-36.	2.5	23
58	Energetics of the break-up of dislocation dipoles into prismatic loops. <i>Acta Metallurgica</i> , 1989, 37, 3315-3325.	2.1	21
59	High temperature precipitation hardening in Y <sub>2</sub> O <sub>3</sub> partially-stabilized ZrO <sub>2</sub> (Y-PSZ) single crystals <sup>III</sup> . Effect of solute composition and orientation on the hardening. <i>Acta Metallurgica Et Materialia</i> , 1995, 43, 2469-2484.	1.8	21
60	The Fracture Toughness of Polysilicon Microdevices. <i>Materials Research Society Symposia Proceedings</i> , 1998, 518, 137.	0.1	21
61	Diffusion profiles after nitrocarburizing austenitic stainless steel. <i>Surface and Coatings Technology</i> , 2015, 279, 180-185.	4.8	21
62	Ultrahigh-strength AISI-316 austenitic stainless steel foils through concentrated interstitial carbon. <i>Acta Materialia</i> , 2019, 167, 231-240.	7.9	19
63	Stress relaxation and solid solution hardening of cubic ZrO <sub>2</sub> single crystals. <i>Acta Metallurgica Et Materialia</i> , 1995, 43, 1917-1923.	1.8	18
64	Colossal <sup>I</sup> interstitial supersaturation in delta ferrite in stainless steels <sup>I</sup> . Low-temperature carburization. <i>Acta Materialia</i> , 2015, 86, 193-207.	7.9	18
65	Ferromagnetism in interstitially hardened austenitic stainless steel induced by low-temperature gas-phase nitriding. <i>Scripta Materialia</i> , 2011, 65, 1089-1092.	5.2	16
66	Localized yielding during high temperature deformation of Y <sub>2</sub> O <sub>3</sub> -fully-stabilized cubic ZrO <sub>2</sub> single crystals. <i>Acta Materialia</i> , 1996, 44, 2651-2662.	7.9	15
67	Wafer-Level Strength and Fracture Toughness Testing of Surface-Micromachined MEMS Devices. <i>Materials Research Society Symposia Proceedings</i> , 1999, 605, 25.	0.1	15
68	Confocal photo-stimulated microspectroscopy (CPSM) <sup>II</sup> residual stress measurements in Al <sub>2</sub> O <sub>3</sub> using confocal microscopy. <i>Scripta Materialia</i> , 2005, 53, 347-349.	5.2	15
69	Fatigue crack growth in interstitially hardened AISI 316L stainless steel. <i>International Journal of Fatigue</i> , 2013, 47, 100-105.	5.7	14
70	Precipitation of Mo <sub>5</sub> Si <sub>3</sub> in MoSi <sub>2</sub> . <i>Journal of Materials Research</i> , 1993, 8, 1079-1085.	2.6	13
71	On-Chip Testing of Mechanical Properties of MEMS Devices. <i>MRS Bulletin</i> , 2001, 26, 300-301.	3.5	13
72	Quantitative phase transformation behavior in TiNi shape memory alloy thin films. <i>Journal of Materials Research</i> , 2004, 19, 2822-2833.	2.6	12

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73	On the quantitative EDS analysis of low carbon concentrations in analytical TEM. Ultramicroscopy, 1993, 49, 220-224.	1.9	11
74	Growth stresses and viscosity of thermal oxides on silicon and polysilicon. Journal of Materials Research, 2006, 21, 209-214.	2.6	11
75	Do moving basal dislocations in sapphire ( $\text{Al}_2\text{O}_3$ ) have non-stoichiometric cores?. Philosophical Magazine, 2009, 89, 489-499.	1.6	9
76	Colossal interstitial supersaturation in delta ferrite in stainless steels: (II) low-temperature nitridation of the 17-7PH alloy. Acta Materialia, 2017, 124, 237-246.	7.9	9
77	R-Curve Behavior and The Mechanical Properties of Transformation-Toughened ZrO <sub>2</sub> -Containing Ceramics. Materials Research Society Symposia Proceedings, 1985, 60, 469.	0.1	8
78	Solution softening in spinel—Submitted to Scripta Materialia. Scripta Materialia, 1998, 39, 537-544.	5.2	7
79	MEMS Structures for On-chip Testing of Mechanical and Surface Properties of Thin Films. , 2003, , 325-356.		7
80	Determination of the growth strain of LPCVD polysilicon. Journal of Microelectromechanical Systems, 2005, 14, 160-166.	2.5	7
81	Sustained-load crack growth of hydrogen-charged surface-hardened 316L stainless steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 556, 43-50.	5.6	7
82	On a high-purity Ge EDS detector I. Determination of detector efficiency. Ultramicroscopy, 1993, 50, 207-218.	1.9	6
83	NiAl precipitation in delta ferrite grains of 17-7 precipitation-hardening stainless steel during low-temperature interstitial hardening. Scripta Materialia, 2015, 108, 136-140.	5.2	6
84	Transformation plasticity and thermoelastic behavior in ZrO <sub>2</sub> -containing ceramics. Revue De Physique Appliquée, 1988, 23, 565-569.	0.4	5
85	Polycrystalline Silicon Films for Microelectromechanical Devices. Materials Research Society Symposia Proceedings, 1995, 403, 321.	0.1	5
86	Surface Oxide Effects on Static Fatigue of Polysilicon MEMS. Materials Research Society Symposia Proceedings, 2002, 741, 341.	0.1	5
87	Structural Evolution of TiO <sub>2</sub> Precipitates in Ti-Doped Sapphire ( $\text{Al}_2\text{O}_3$ ). Journal of the American Ceramic Society, 2011, 94, 1272-1280.	3.8	5
88	HREM of coherent precipitates in ZrO <sub>2</sub> alloys. Ultramicroscopy, 1987, 22, 27-34.	1.9	4
89	On the Fracture Toughness of Polysilicon MEMS Structures. Materials Research Society Symposia Proceedings, 2000, 657, 211.	0.1	4
90	Increasing the coefficient of sliding friction of NiCr at low loads by interstitial surface hardening. Wear, 2016, 346-347, 1-5.	3.1	3

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91	On a high-purity Ge EDS detector II. Ice layer formation and optimization of detector design. Ultramicroscopy, 1993, 50, 219-227.	1.9	2
92	Interstitial faulted dislocation dipole formation in sapphire ( $\hat{\Gamma}$ -Al <sub>2</sub> O <sub>3</sub> ). Philosophical Magazine, 2013, 93, 152-161.	1.6	2
93	On a high-purity Ge EDS detector III. The reliable acquisition of EDS spectra. Ultramicroscopy, 1993, 50, 229-235.	1.9	1
94	Colossal Carbon Supersaturation of Delta Ferrite in 17-7 PH Stainless Steel. Microscopy and Microanalysis, 2014, 20, 2102-2103.	0.4	1
95	ELECTRON MICROSCOPIC STUDY OF PHASE TRANSFORMATIONS IN PURE AND PARTIALLY-STABILIZED ZrO <sub>2</sub> . , 1973, , 299-305.		1
96	Transformation Toughening. , 1991, , 494-497.		1
97	Tem of Dislocations in Sapphire ( $\hat{\Gamma}$ -Al <sub>2</sub> O <sub>3</sub> ). Materials Research Society Symposia Proceedings, 1983, 31, 303.	0.1	0
98	Ordered Defect-Fluorite Compounds in ZrO <sub>2</sub> Alloys. Materials Research Society Symposia Proceedings, 1983, 31, 357.	0.1	0
99	TEM Examination of Microstructures in LiNbO <sub>3</sub> Optical Waveguides. , 1986, , .		0
100	LPCVD polysilicon films with controlled curvature for optical MEMS: the MultiPoly/sup TM/ process. , 0, , .		0
101	Microindentation behavior of the shell of the conch Strombus gigas. Microscopy and Microanalysis, 2001, 7, 392-393.	0.4	0
102	Design and fabrication of curved micromirrors using the multipoly process. , 0, , .		0
103	The Role of Electron Microscopy and Focused Ion Beam in Studying Friction Modifiers in Engine Oils. Microscopy and Microanalysis, 2012, 18, 646-647.	0.4	0
104	Colossal Interstitial Supersaturation in Delta Ferrite in 17-7 PH Stainless Steels After Low-temperature Nitridation. Microscopy and Microanalysis, 2016, 22, 2020-2023.	0.4	0
105	MATRIX - DIRECTED IN VITRO OSTEOGENESIS. , 1999, , .		0
106	Comment on "Self-diffusion in high-purity $\hat{\Gamma}$ -Al <sub>2</sub> O <sub>3</sub> : Comparison of Ti-doped, Mg-doped and undoped single crystals" P. Fielitz, S. Ganschow, K. Klemens, and G. Borchardt, J. Eur. Ceram. Soc., 41, (2021), 663-668. Journal of the European Ceramic Society, 2022, 42, 1829-1831.	5.7	0