

Matthias Bartosik

List of Publications by Year in descending order

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52
papers

1,593
citations

257357

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times ranked

1232
citing authors

#	ARTICLE	IF	CITATIONS
1	Atomic-scale understanding of the structural evolution in TiN/AlN superlattice during nanoindentationâ€”Part 2: Strengthening. Acta Materialia, 2022, 234, 118009.	3.8	3
2	Atomic-scale understanding of the structural evolution of TiN/AlN superlattice during nanoindentationâ€” Part 1: Deformation. Acta Materialia, 2022, 234, 118008.	3.8	6
3	Fracture toughness trends of modulus-matched TiN/(Cr,Al)N thin film superlattices. Acta Materialia, 2021, 202, 376-386.	3.8	35
4	Real-time atomic-resolution observation of coherent twin boundary migration in CrN. Acta Materialia, 2021, 208, 116732.	3.8	10
5	Enhanced fracture toughness in ceramic superlattice thin films: On the role of coherency stresses and misfit dislocations. Materials and Design, 2021, 202, 109517.	3.3	13
6	Atomic insights on intermixing of nanoscale nitride multilayer triggered by nanoindentation. Acta Materialia, 2021, 214, 117004.	3.8	19
7	Correlating point defects with mechanical properties in nanocrystalline TiN thin films. Materials and Design, 2021, 207, 109844.	3.3	18
8	Mechanical properties of CrN-based superlattices: Impact of magnetism. Acta Materialia, 2021, 218, 117095.	3.8	5
9	Point-defect engineering of MoN/TaN superlattice films: A first-principles and experimental study. Materials and Design, 2020, 186, 108211.	3.3	11
10	Growth-twins in CrN/AlN multilayers induced by hetero-phase interfaces. Acta Materialia, 2020, 185, 157-170.	3.8	8
11	Mechanistic study of superlattice-enabled high toughness and hardness in MoN/TaN coatings. Communications Materials, 2020, 1, .	2.9	27
12	Indentation response of a superlattice thin film revealed by in-situ scanning X-ray nanodiffraction. Acta Materialia, 2020, 195, 425-432.	3.8	7
13	Fracture properties of thin film TiN at elevated temperatures. Materials and Design, 2020, 194, 108885.	3.3	36
14	Mapping the mechanical properties in nitride coatings at the nanometer scale. Acta Materialia, 2020, 194, 343-353.	3.8	6
15	Mechanical properties and epitaxial growth of TiN/AlN superlattices. Surface and Coatings Technology, 2019, 375, 1-7.	2.2	25
16	Strain and stress analyses on thermally annealed Ti-Al-N/Mo-Si-B multilayer coatings by synchrotron X-ray diffraction. Surface and Coatings Technology, 2019, 361, 364-370.	2.2	9
17	Correlating elemental distribution with mechanical properties of TiN/SiNx nanocomposite coatings. Scripta Materialia, 2019, 170, 20-23.	2.6	23
18	Toughness of Si alloyed high-entropy nitride coatings. Materials Letters, 2019, 251, 238-240.	1.3	31

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19	Toughness enhancement in TiN/WN superlattice thin films. <i>Acta Materialia</i> , 2019, 172, 18-29.	3.8	72
20	Correlating structural and mechanical properties of AlN/TiN superlattice films. <i>Scripta Materialia</i> , 2019, 165, 159-163.	2.6	29
21	Crystallographic orientation dependent maximum layer thickness of cubic AlN in CrN/AlN multilayers. <i>Acta Materialia</i> , 2019, 168, 190-202.	3.8	31
22	Influence of Ta on the fracture toughness of arc evaporated Ti-Al-N. <i>Vacuum</i> , 2018, 150, 24-28.	1.6	42
23	Fracture toughness of Ti-Si-N thin films. <i>International Journal of Refractory Metals and Hard Materials</i> , 2018, 72, 78-82.	1.7	40
24	Insight into the structural evolution during TiN film growth via atomic resolution TEM. <i>Journal of Alloys and Compounds</i> , 2018, 754, 257-267.	2.8	36
25	Influence of coating thickness and substrate on stresses and mechanical properties of (Ti,Al,Ta)N/(Al,Cr)N multilayers. <i>Surface and Coatings Technology</i> , 2018, 347, 92-98.	2.2	26
26	Improved mechanical properties, thermal stabilities, and oxidation resistance of arc evaporated Ti-Al-N coatings through alloying with Ta. <i>Surface and Coatings Technology</i> , 2018, 344, 244-249.	2.2	28
27	Annealing effect on the fracture toughness of CrN/TiN superlattices. <i>International Journal of Refractory Metals and Hard Materials</i> , 2018, 71, 352-356.	1.7	25
28	Mechanical properties and oxidation resistance of Al-Cr-N/Ti-Al-Ta-N multilayer coatings. <i>Surface and Coatings Technology</i> , 2018, 347, 427-433.	2.2	18
29	Influence of phase transformation on the damage tolerance of Ti-Al-N coatings. <i>Vacuum</i> , 2018, 155, 153-157.	1.6	15
30	Dislocation densities and alternating strain fields in CrN/AlN nanolayers. <i>Thin Solid Films</i> , 2017, 638, 189-200.	0.8	19
31	Fracture toughness and structural evolution in the TiAlN system upon annealing. <i>Scientific Reports</i> , 2017, 7, 16476.	1.6	93
32	Superlattice-induced oscillations of interplanar distances and strain effects in the CrN/AlN system. <i>Physical Review B</i> , 2017, 95, .	1.1	13
33	Thermal expansion of Ti-Al-N and Cr-Al-N coatings. <i>Scripta Materialia</i> , 2017, 127, 182-185.	2.6	48
34	Superlattice effect for enhanced fracture toughness of hard coatings. <i>Scripta Materialia</i> , 2016, 124, 67-70.	2.6	128
35	Interface controlled microstructure evolution in nanolayered thin films. <i>Scripta Materialia</i> , 2016, 123, 13-16.	2.6	9
36	Influence of oxygen impurities on growth morphology, structure and mechanical properties of Ti-Al-N thin films. <i>Thin Solid Films</i> , 2016, 603, 39-49.	0.8	21

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37	Cross-sectional structure-property relationship in a graded nanocrystalline Ti _{1-x} Al _x N thin film. <i>Acta Materialia</i> , 2016, 102, 212-219.	3.8	34
38	Cross-sectional X-ray nano-diffraction and -reflectivity analysis of multilayered AlTiN/TiSiN thin films: Correlation between residual strain and bi-layer period. <i>Scripta Materialia</i> , 2015, 107, 153-156.	2.6	18
39	Complementary ab initio and X-ray nanodiffraction studies of Ta ₂ O ₅ . <i>Acta Materialia</i> , 2015, 83, 276-284.	3.8	24
40	Thermal stability and mechanical properties of boron enhanced Mo-Si coatings. <i>Surface and Coatings Technology</i> , 2015, 280, 282-290.	2.2	19
41	Thermal expansion of rock-salt cubic AlN. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	25
42	Structural stability and thermodynamics of CrN magnetic phases from ab initio calculations and experiment. <i>Physical Review B</i> , 2014, 90, .	1.1	95
43	New insights on the formation of supersaturated solid solutions in the Cu-Cr system deformed by high-pressure torsion. <i>Acta Materialia</i> , 2014, 69, 301-313.	3.8	73
44	Structural and mechanical evolution of reactively and non-reactively sputtered Zr-Al-N thin films during annealing. <i>Surface and Coatings Technology</i> , 2014, 244, 52-56.	2.2	42
45	Cross-sectional X-ray nanobeam diffraction analysis of a compositionally graded Cr _{Nx} thin film. <i>Thin Solid Films</i> , 2013, 542, 1-4.	0.8	29
46	Macroscopic Fracture Behaviour of CrN Hard Coatings Evaluated by X-Ray Diffraction Coupled with Four-Point Bending. <i>Materials Science Forum</i> , 2013, 768-769, 272-279.	0.3	0
47	Lateral gradients of phases, residual stress and hardness in a laser heated Ti _{0.52} Al _{0.48} N coating on hard metal. <i>Surface and Coatings Technology</i> , 2012, 206, 4502-4510.	2.2	37
48	X-ray nanodiffraction reveals strain and microstructure evolution in nanocrystalline thin films. <i>Scripta Materialia</i> , 2012, 67, 748-751.	2.6	103
49	Size effect of thermal expansion and thermal/intrinsic stresses in nanostructured thin films: Experiment and model. <i>Acta Materialia</i> , 2011, 59, 6631-6645.	3.8	77
50	In Situ High Temperature X-Ray Diffraction Reveals Residual Stress Depth-Profiles in Blasted TiN Hard Coatings. <i>Advanced Engineering Materials</i> , 2011, 13, 705-711.	1.6	14
51	Thermally-induced formation of hexagonal AlN in AlCrN hard coatings on sapphire: Orientation relationships and residual stresses. <i>Surface and Coatings Technology</i> , 2010, 205, 1320-1323.	2.2	18
52	Toughness Enhancement in TiN/WN Superlattice Thin Films. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0