

Matthias Bartosik

List of Publications by Year in descending order

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52
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257450

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docs citations

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times ranked

1232
citing authors

#	ARTICLE	IF	CITATIONS
1	Superlattice effect for enhanced fracture toughness of hard coatings. Scripta Materialia, 2016, 124, 67-70.	5.2	128
2	X-ray nanodiffraction reveals strain and microstructure evolution in nanocrystalline thin films. Scripta Materialia, 2012, 67, 748-751.	5.2	103
3	Structural stability and thermodynamics of CrN magnetic phases from <i>ab initio</i> calculations and experiment. Physical Review B, 2014, 90, .	3.2	95
4	Fracture toughness and structural evolution in the TiAlN system upon annealing. Scientific Reports, 2017, 7, 16476.	3.3	93
5	Size effect of thermal expansion and thermal/intrinsic stresses in nanostructured thin films: Experiment and model. Acta Materialia, 2011, 59, 6631-6645.	7.9	77
6	New insights on the formation of supersaturated solid solutions in the Cu-Cr system deformed by high-pressure torsion. Acta Materialia, 2014, 69, 301-313.	7.9	73
7	Toughness enhancement in TiN/WN superlattice thin films. Acta Materialia, 2019, 172, 18-29.	7.9	72
8	Thermal expansion of Ti-Al-N and Cr-Al-N coatings. Scripta Materialia, 2017, 127, 182-185.	5.2	48
9	Structural and mechanical evolution of reactively and non-reactively sputtered Zr-Al-N thin films during annealing. Surface and Coatings Technology, 2014, 244, 52-56.	4.8	42
10	Influence of Ta on the fracture toughness of arc evaporated Ti-Al-N. Vacuum, 2018, 150, 24-28.	3.5	42
11	Fracture toughness of Ti-Si-N thin films. International Journal of Refractory Metals and Hard Materials, 2018, 72, 78-82.	3.8	40
12	Lateral gradients of phases, residual stress and hardness in a laser heated Ti _{0.52} Al _{0.48} N coating on hard metal. Surface and Coatings Technology, 2012, 206, 4502-4510.	4.8	37
13	Insight into the structural evolution during TiN film growth via atomic resolution TEM. Journal of Alloys and Compounds, 2018, 754, 257-267.	5.5	36
14	Fracture properties of thin film TiN at elevated temperatures. Materials and Design, 2020, 194, 108885.	7.0	36
15	Fracture toughness trends of modulus-matched TiN/(Cr,Al)N thin film superlattices. Acta Materialia, 2021, 202, 376-386.	7.9	35
16	Cross-sectional structure-property relationship in a graded nanocrystalline Ti _{1-x} Al _x N thin film. Acta Materialia, 2016, 102, 212-219.	7.9	34
17	Toughness of Si alloyed high-entropy nitride coatings. Materials Letters, 2019, 251, 238-240.	2.6	31
18	Crystallographic orientation dependent maximum layer thickness of cubic AlN in CrN/AlN multilayers. Acta Materialia, 2019, 168, 190-202.	7.9	31

#	ARTICLE	IF	CITATIONS
19	Cross-sectional X-ray nanobeam diffraction analysis of a compositionally graded CrN _x thin film. <i>Thin Solid Films</i> , 2013, 542, 1-4.	1.8	29
20	Correlating structural and mechanical properties of AlN/TiN superlattice films. <i>Scripta Materialia</i> , 2019, 165, 159-163.	5.2	29
21	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.	4.8	28
22	Mechanistic study of superlattice-enabled high toughness and hardness in MoN/TaN coatings. <i>Communications Materials</i> , 2020, 1, .	6.9	27
23	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.	4.8	26
24	Thermal expansion of rock-salt cubic AlN. <i>Applied Physics Letters</i> , 2015, 107, .	3.3	25
25	Annealing effect on the fracture toughness of CrN/TiN superlattices. <i>International Journal of Refractory Metals and Hard Materials</i> , 2018, 71, 352-356.	3.8	25
26	Mechanical properties and epitaxial growth of TiN/AlN superlattices. <i>Surface and Coatings Technology</i> , 2019, 375, 1-7.	4.8	25
27	Complementary ab initio and X-ray nanodiffraction studies of Ta ₂ O ₅ . <i>Acta Materialia</i> , 2015, 83, 276-284.	7.9	24
28	Correlating elemental distribution with mechanical properties of TiN/SiN _x nanocomposite coatings. <i>Scripta Materialia</i> , 2019, 170, 20-23.	5.2	23
29	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.	1.8	21
30	Thermal stability and mechanical properties of boron enhanced Mo-Si coatings. <i>Surface and Coatings Technology</i> , 2015, 280, 282-290.	4.8	19
31	Dislocation densities and alternating strain fields in CrN/AlN nanolayers. <i>Thin Solid Films</i> , 2017, 638, 189-200.	1.8	19
32	Atomic insights on intermixing of nanoscale nitride multilayer triggered by nanoindentation. <i>Acta Materialia</i> , 2021, 214, 117004.	7.9	19
33	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.	4.8	18
34	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.	5.2	18
35	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.	4.8	18
36	Correlating point defects with mechanical properties in nanocrystalline TiN thin films. <i>Materials and Design</i> , 2021, 207, 109844.	7.0	18

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37	Influence of phase transformation on the damage tolerance of Ti-Al-N coatings. <i>Vacuum</i> , 2018, 155, 153-157.	3.5	15
38	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.	3.5	14
39	Superlattice-induced oscillations of interplanar distances and strain effects in the CrN/AlN system. <i>Physical Review B</i> , 2017, 95, .	3.2	13
40	Enhanced fracture toughness in ceramic superlattice thin films: On the role of coherency stresses and misfit dislocations. <i>Materials and Design</i> , 2021, 202, 109517.	7.0	13
41	Point-defect engineering of MoN/TaN superlattice films: A first-principles and experimental study. <i>Materials and Design</i> , 2020, 186, 108211.	7.0	11
42	Real-time atomic-resolution observation of coherent twin boundary migration in CrN. <i>Acta Materialia</i> , 2021, 208, 116732.	7.9	10
43	Interface controlled microstructure evolution in nanolayered thin films. <i>Scripta Materialia</i> , 2016, 123, 13-16.	5.2	9
44	Strain and stress analyses on thermally annealed Ti-Al-N/Mo-Si-B multilayer coatings by synchrotron X-ray diffraction. <i>Surface and Coatings Technology</i> , 2019, 361, 364-370.	4.8	9
45	Growth-twins in CrN/AlN multilayers induced by hetero-phase interfaces. <i>Acta Materialia</i> , 2020, 185, 157-170.	7.9	8
46	Indentation response of a superlattice thin film revealed by in-situ scanning X-ray nanodiffraction. <i>Acta Materialia</i> , 2020, 195, 425-432.	7.9	7
47	Mapping the mechanical properties in nitride coatings at the nanometer scale. <i>Acta Materialia</i> , 2020, 194, 343-353.	7.9	6
48	Atomic-scale understanding of the structural evolution of TiN/AlN superlattice during nanoindentation” Part 1: Deformation. <i>Acta Materialia</i> , 2022, 234, 118008.	7.9	6
49	Mechanical properties of CrN-based superlattices: Impact of magnetism. <i>Acta Materialia</i> , 2021, 218, 117095.	7.9	5
50	Atomic-scale understanding of the structural evolution in TiN/AlN superlattice during nanoindentation”Part 2: Strengthening. <i>Acta Materialia</i> , 2022, 234, 118009.	7.9	3
51	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
52	Toughness Enhancement in TiN/WN Superlattice Thin Films. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0