Paul H Mayrhofer

List of Publications by Citations

290 papers	10,529 citations	53 h-index	89 g-index
303 ext. papers	11,696 ext. citations	4.4 avg, IF	6.45 L-index

#	Paper	IF	Citations
290	Microstructural design of hard coatings. *Progress in Materials Science*, **2006**, 51, 1032-1114	42.2	682
289	Self-organized nanostructures in the Ti-Al-N system. *Applied Physics Letters*, **2003**, 83, 2049-2051	3.4	477
288	Thermal stability of Al-Cr-N hard coatings. *Scripta Materialia*, **2006**, 54, 1847-1851	5.6	201
287	Microstructure and mechanical/thermal properties of Cr-N coatings deposited by reactive unbalanced magnetron sputtering. *Surface and Coatings Technology*, **2001**, 142-144, 78-84	4.4	189
286	ZrN/Cu nanocomposite film- novel superhard material. *Surface and Coatings Technology*, **1999**, 120-121, 179-183	4.4	178
285	Influence of the Al distribution on the structure, elastic properties, and phase stability of supersaturated Ti1-xAlxN. *Journal of Applied Physics*, **2006**, 100, 094906	2.5	176
284	A comparative study on reactive and non-reactive unbalanced magnetron sputter deposition of TiN coatings. *Thin Solid Films*, **2002**, 415, 151-159	2.2	168
283	Microstructure and properties of nanocomposite Ti-B-N and Ti-B-C coatings. *Surface and Coatings Technology*, **1999**, 120-121, 405-411	4.4	158
282	Structure, mechanical and tribological properties of sputtered Ti1-xAlxN coatings with 0.5-x-0.75. *Surface and Coatings Technology*, **2005**, 200, 2358-2365	4.4	155
281	Thermal stability and oxidation resistance of Ti-Al-N coatings. *Surface and Coatings Technology*, **2012**, 206-318, 2954-2960	4.4	148
280	Self-organized nanocolumnar structure in superhard TiB2 thin films. *Applied Physics Letters*, **2005**, 86, 131909	3.4	148
279	Decomposition pathways in age hardening of Ti-Al-N films. *Journal of Applied Physics*, **2011**, 110, 023515	2.5	131
278	Calorimetric evidence for frictional self-adaptation of TiAlN/VN superlattice coatings. *Surface and Coatings Technology*, **2004**, 177-178, 341-347	4.4	131
277	Magn- phase formation of PVD Mo-N and W-N coatings. *Surface and Coatings Technology*, **2006**, 201, 3335-3341	4.4	130
276	Structure and properties of hard and superhard Zr-Cu-N nanocomposite coatings. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2000**, 289, 189-197	5.3	123
275	Trends in the elastic response of binary early transition metal nitrides. *Physical Review B*, **2012**, 85,	3.3	121
274	Ab initio calculated binodal and spinodal of cubic Ti1-xAlxN. *Applied Physics Letters*, **2006**, 88, 071922	3.4	120

273	Structure–property relationships in single- and dual-phase nanocrystalline hard coatings. *Surface and Coatings Technology*, **2003**, 174-175, 725-731	4.4	120
272	High-temperature properties of nanocomposite TiBxNy and TiBxCy coatings. *Surface and Coatings Technology*, **2000**, 133-134, 131-137	4.4	111
271	A new low-friction concept for Ti1−xAlxN based coatings in high-temperature applications. *Surface and Coatings Technology*, **2004**, 188-189, 358-363	4.4	108
270	Oxidation kinetics of sputtered CrN hard coatings. *Surface and Coatings Technology*, **2001**, 146-147, 222-228	4.4	106
269	Thermal stability of PVD hard coatings. *Vacuum*, **2003**, 71, 279-284	3.7	105
268	A New Low Friction Concept for High Temperatures: Lubricious Oxide Formation on Sputtered VN Coatings. *Tribology Letters*, **2004**, 17, 751-756	2.8	103
267	Superlattice effect for enhanced fracture toughness of hard coatings. *Scripta Materialia*, **2016**, 124, 67-70	3.6	98
266	High-entropy ceramic thin films; A case study on transition metal diborides. *Scripta Materialia*, **2018**, 149, 93-97	5.6	95
265	Energetic balance and kinetics for the decomposition of supersaturated Ti1−xAlxN. *Acta Materialia*, **2007**, 55, 1441-1446	8.4	95
264	Structure and phase evolution of CrAlN coatings during annealing. *Surface and Coatings Technology*, **2008**, 202, 4935-4938	4.4	93
263	Structure, elastic properties and phase stability of Cr1−xAlxN. *Acta Materialia*, **2008**, 56, 2469-2475	8.4	93
262	Influence of Zr on structure, mechanical and thermal properties of Ti-Al-N. *Thin Solid Films*, **2011**, 519, 5503-5510	2.2	90
261	Phase stability and alloy-related trends in TiAlN, ZrAlN and HfAlN systems from first principles. *Surface and Coatings Technology*, **2011**, 206, 1698-1704	4.4	89
260	Increased thermal stability of TiAlN thin films by Ta alloying. *Surface and Coatings Technology*, **2012**, 211, 98-103	4.4	87
259	Thermal stability and oxidation resistance of arc evaporated TiAlN, TaAlN, TiAlTaN, and TiAlN/TaAlN coatings. *Surface and Coatings Technology*, **2014**, 259, 599-607	4.4	86
258	Low-stress superhard Ti?B films prepared by magnetron sputtering. *Surface and Coatings Technology*, **2003**, 174-175, 744-753	4.4	85
257	Influence of oxide phase formation on the tribological behaviour of TiAlVN coatings. *Surface and Coatings Technology*, **2005**, 200, 1731-1737	4.4	83
256	Structure and properties of high power impulse magnetron sputtering and DC magnetron sputtering CrN and TiN films deposited in an industrial scale unit. *Thin Solid Films*, **2010**, 518, 5558-5564	2.2	82

255	Three-dimensional atom probe investigations of TiAlN thin films. *Scripta Materialia*, **2009**, 61, 725-728	5.6	79
254	The effect of yttrium incorporation on the oxidation resistance of CrAlN coatings. *Surface and Coatings Technology*, **2008**, 202, 5870-5875	4.4	79
253	Structural stability and thermodynamics of CrN magnetic phases from ab initio calculations and experiment. *Physical Review B*, **2014**, 90,	3.3	78
252	Experimental and computational study on the phase stability of Al-containing cubic transition metal nitrides. *Journal Physics D: Applied Physics*, **2010**, 43, 035302	3	77
251	Structure–property relations of arc-evaporated AlCrSiN coatings. *Surface and Coatings Technology*, **2008**, 202, 3555-3562	4.4	73
250	The influence of age-hardening on turning and milling performance of TiAlN coated inserts. *Surface and Coatings Technology*, **2008**, 202, 5158-5161	4.4	65
249	Mechanical Size-Effects in Miniaturized and Bulk Materials. *Advanced Engineering Materials*, **2006**, 8, 1033-1045	3.5	64
248	Age hardening of PACVD TiBN thin films. *Scripta Materialia*, **2005**, 53, 241-245	5.6	64
247	Pressure-dependent stability of cubic and wurtzite phases within the TiN–AlN and CrN–AlN systems. *Scripta Materialia*, **2010**, 62, 349-352	5.6	62
246	TiAlN based nanoscale multilayer coatings designed to adapt their tribological properties at elevated temperatures. *Thin Solid Films*, **2005**, 485, 160-168	2.2	61
245	Effects of structure and interfaces on fracture toughness of CrN/AlN multilayer coatings. *Scripta Materialia*, **2013**, 68, 917-920	5.6	60
244	Fracture toughness and structural evolution in the TiAlN system upon annealing. *Scientific Reports*, **2017**, 7, 16476	4.9	60
243	Structure and mechanical properties of CrN/TiN multilayer coatings prepared by a combined HIPIMS/UBMS deposition technique. *Thin Solid Films*, **2008**, 517, 1239-1244	2.2	60
242	Thermally induced transitions of CrN thin films. *Scripta Materialia*, **2007**, 57, 249-252	5.6	58
241	Surface energies of AlN allotropes from first principles. *Scripta Materialia*, **2012**, 67, 760-762	5.6	57
240	Compositional and structural evolution of sputtered Ti-Al-N. *Thin Solid Films*, **2009**, 517, 6635-6641	2.2	57
239	Origin of high temperature oxidation resistance of TiAlTaN coatings. *Surface and Coatings Technology*, **2014**, 257, 78-86	4.4	56
238	Phase stability and decomposition products of TiAlTaN thin films. *Applied Physics Letters*, **2010**, 97, 151901	3.4	53

237	Structure–property relations in CrC/a-C:H coatings deposited by reactive magnetron sputtering. *Surface and Coatings Technology*, **2005**, 200, 1147-1150	4.4	53
236	Thermal stability and oxidation resistance of sputtered Ti Al Cr N hard coatings. *Surface and Coatings Technology*, **2017**, 324, 48-56	4.4	52
235	Temperature driven evolution of thermal, electrical, and optical properties of Ti-Al-N coatings. *Acta Materialia*, **2012**, 60, 2091-2096	8.4	52
234	Experimental and computational study on the effect of yttrium on the phase stability of sputtered CrAlYN hard coatings. *Acta Materialia*, **2010**, 58, 2708-2715	8.4	52
233	Self-Organized Nanostructures in Hard Ceramic Coatings. *Advanced Engineering Materials*, **2005**, 7, 1071-1082	3.5	52
232	Thermal decomposition routes of CrN hard coatings synthesized by reactive arc evaporation and magnetron sputtering. *Thin Solid Films*, **2008**, 517, 568-574	2.2	51
231	First-principles study of elastic properties of cubic Cr1−xAlxN alloys. *Journal of Applied Physics*, **2013**, 113, 043511	2.5	50
230	Alloying-related trends from first principles: An application to the TiAlXN system. *Journal of Applied Physics*, **2013**, 113, 113510	2.5	49
229	Point defects stabilise cubic Mo-N and Ta-N. *Journal Physics D: Applied Physics*, **2016**, 49, 375303	3	49
228	In situ observation of rapid reactions in nanoscale NiAl multilayer foils using synchrotron radiation. *Applied Physics Letters*, **2010**, 97, 144101	3.4	45
227	Thermal stability of superhard TiBN coatings. *Surface and Coatings Technology*, **2007**, 201, 6148-6153	4.4	45
226	Toughness enhancement in TiN/WN superlattice thin films. *Acta Materialia*, **2019**, 172, 18-29	8.4	44
225	Thermally induced self-hardening of nanocrystalline TiBN thin films. *Journal of Applied Physics*, **2006**, 100, 044301	2.5	44
224	Phase stability, mechanical properties and thermal stability of Y alloyed TiAlN coatings. *Surface and Coatings Technology*, **2013**, 235, 174-180	4.4	43
223	Structure and stability of phases within the NbN–AlN system. *Journal Physics D: Applied Physics*, **2010**, 43, 145403	3	43
222	Environmental protection of γ-TiAl based alloy Ti-45Al-8Nb by CrAlYN thin films and thermal barrier coatings. *Intermetallics*, **2010**, 18, 479-486	3.5	42
221	Thermal stability and thermo-mechanical properties of magnetron sputtered Cr-Al-Y-N coatings. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2008**, 26, 29-35	2.9	42
220	Thermal stability of nanocomposite CrC/a-C:H thin films. *Thin Solid Films*, **2007**, 515, 5411-5417	2.2	42

219	Structure of sputtered nanocomposite CrC[sub x]Ð-C:H thin films. *Journal of Vacuum Science & Technology B*, **2006**, 24, 1837		42
218	The impact of nitrogen content and vacancies on structure and mechanical properties of MoÑ thin films. *Journal of Applied Physics*, **2016**, 120, 185301	2.5	42
217	The influence of the ion bombardment on the optical properties of TiNx and ZrNx coatings. *Surface and Coatings Technology*, **1998**, 108-109, 230-235	4.4	41
216	Spinodal decomposition of cubic Ti1ØAlxN: Comparison between experiments and modeling. *International Journal of Materials Research*, **2007**, 98, 1054-1059	0.5	41
215	Ab initio inspired design of ternary boride thin films. *Scientific Reports*, **2018**, 8, 9288	4.9	40
214	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	4.4	38
213	Influence of CrN and AlN layer thicknesses on structure and mechanical properties of CrN/AlN superlattices. *Thin Solid Films*, **2013**, 545, 375-379	2.2	38
212	Effect of Hf on structure and age hardening of TiÆl-N thin films. *Surface and Coatings Technology*, **2012**, 206, 2667-2672	4.4	37
211	Thermal expansion of Ti-Al-N and Cr-Al-N coatings. *Scripta Materialia*, **2017**, 127, 182-185	5.6	37
210	Influence of deposition conditions on texture development and mechanical properties of TiN coatings. *International Journal of Materials Research*, **2009**, 100, 1052-1058	0.5	37
209	Influence of Nb on the phase stability of TiÆlÑ. *Scripta Materialia*, **2010**, 63, 807-810	5.6	37
208	Yttrium-induced structural changes in sputtered Ti1ØAlxN thin films. *Scripta Materialia*, **2007**, 57, 357-360	3.6	37
207	Microstructure and piezoelectric response of YxAl1ØN thin films. *Acta Materialia*, **2015**, 100, 81-89	8.4	36
206	Atom probe specimen preparation and 3D interfacial study of TiÆlÑ thin films. *Surface and Coatings Technology*, **2010**, 204, 1811-1816	4.4	36
205	Hardness evolution of AlŒrÑ coatings under thermal load. *Journal of Materials Research*, **2008**, 23, 2880-2885	2.5	36
204	Characterization of tribo-layers on self-lubricating plasma-assisted chemical-vapor-deposited TiN coatings. *Thin Solid Films*, **2004**, 460, 125-132	2.2	36
203	Solid solution hardening of vacancy stabilized Ti W1ÐB2. *Acta Materialia*, **2015**, 101, 55-61	8.4	34
202	Influence of bias potential and layer arrangement on structure and mechanical properties of arc evaporated AlŒrÑ coatings. *Vacuum*, **2014**, 106, 49-52	3.7	34

201	Influence of Yttrium on the Thermal Stability of Ti-Al-N Thin Films. *Materials*, **2010**, 3, 1573-1592	3.5	34
200	Recrystallization and grain growth of nanocomposite TiBN coatings. *Thin Solid Films*, **2003**, 440, 174-179	2.2	34
199	Ab initiostudy of the alloying effect of transition metals on structure, stability and ductility of CrN. *Journal Physics D: Applied Physics*, **2013**, 46, 365301	3	33
198	Towards predictive modeling of near-edge structures in electron energy-loss spectra of AlN-based ternary alloys. *Physical Review B*, **2011**, 83,	3.3	33
197	Low friction CrN/TiN multilayer coatings prepared by a hybrid high power impulse magnetron sputtering/DC magnetron sputtering deposition technique. *Thin Solid Films*, **2010**, 518, 5553-5557	2.2	33
196	Mechanical properties and thermal stability of reactively sputtered multi-principal-metal Hf-Ta-Ti-V-Zr nitrides. *Surface and Coatings Technology*, **2020**, 389, 125674	4.4	32
195	Electronic origin of structure and mechanical properties in Y and Nb alloyed TiAlN thin films. *International Journal of Materials Research*, **2011**, 102, 735-742	0.5	32
194	Impact of yttrium on structure and mechanical properties of CrAlN thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2007**, 25, 1336	2.9	32
193	Cross-sectional structure-property relationship in a graded nanocrystalline Ti1−xAlxN thin film. *Acta Materialia*, **2016**, 102, 212-219	8.4	31
192	Vacancy-dependent stability of cubic and wurtzite Ti Al N. *Surface and Coatings Technology*, **2015**, 275, 214-218	4.4	31
191	Stabilization criteria for cubic AlN in TiN/AlN and CrN/AlN bi-layer systems. *Journal Physics D: Applied Physics*, **2013**, 46, 045305	3	31
190	Effect of nitrogen-incorporation on structure, properties and performance of magnetron sputtered CrB2. *Surface and Coatings Technology*, **2008**, 202, 3088-3093	4.4	31
189	Hard and superhard nanocomposite AlCuN films prepared by magnetron sputtering. *Surface and Coatings Technology*, **2001**, 142-144, 603-609	4.4	31
188	Computational and experimental studies on structure and mechanical properties of MoAlN. *Acta Materialia*, **2016**, 107, 273-278	8.4	30
187	Composition driven phase evolution and mechanical properties of MoCrN hard coatings. *Journal of Applied Physics*, **2015**, 118, 025305	2.5	30
186	Hard and superhard TiAlBN coatings deposited by twin electron-beam evaporation. *Surface and Coatings Technology*, **2007**, 201, 6078-6083	4.4	30
185	Comparative study of Ti1−xAlxN coatings alloyed with Hf, Nb, and B. *Surface and Coatings Technology*, **2005**, 200, 113-117	4.4	30
184	Thermal conductivity and mechanical properties of AlN-based thin films. *Journal of Applied Physics*, **2016**, 119, 225304	2.5	30

183	Influence of Ta on the fracture toughness of arc evaporated Ti-Al-N. *Vacuum*, **2018**, 150, 24-28	3.7	29
182	Ab initio-guided development of super-hard Mo-Al-Cr-N coatings. *Scripta Materialia*, **2017**, 140, 27-30	5.6	28
181	Macroscopic elastic properties of textured ZrN-AlN polycrystalline aggregates: From ab initio calculations to grain-scale interactions. *Physical Review B*, **2014**, 90,	3.3	28
180	Phase equilibria, thermodynamics and microstructure simulation of metastable spinodal decomposition in c-Ti1-xAlxN coatings. *Calphad: Computer Coupling of Phase Diagrams and Thermochemistry*, **2017**, 56, 92-101	1.9	27
179	Thermal stability and mechanical properties of arc evaporated Ti-Al-Zr-N hard coatings. *Surface and Coatings Technology*, **2015**, 266, 1-9	4.4	27
178	Non-reactively sputtered ultra-high temperature Hf-C and Ta-C coatings. *Surface and Coatings Technology*, **2017**, 309, 436-444	4.4	27
177	Designing thin film materials - Ternary borides from first principles. *Thin Solid Films*, **2015**, 583, 46-49	2.2	26
176	Fracture toughness of Ti-Si-N thin films. *International Journal of Refractory Metals and Hard Materials*, **2018**, 72, 78-82	4.1	26
175	Cross-sectional X-ray nanobeam diffraction analysis of a compositionally graded CrNx thin film. *Thin Solid Films*, **2013**, 542, 1-4	2.2	26
174	Improved Ti-Al-N coatings through Ta alloying and multilayer architecture. *Surface and Coatings Technology*, **2017**, 328, 428-435	4.4	26
173	Synthesis-structure-property relations for CrBN coatings sputter deposited reactively from a CrB target with 20at% B. *Vacuum*, **2008**, 82, 771-776	3.7	26
172	Influence of Mo on the structure and the tribomechanical properties of arc evaporated Ti-Al-N. *Surface and Coatings Technology*, **2017**, 311, 330-336	4.4	25
171	Influence of AlN layers on mechanical properties and thermal stability of Cr-based nitride coatings. *Thin Solid Films*, **2013**, 531, 113-118	2.2	25
170	On the influence of coating and oxidation on the mechanical properties of a TiAl based alloy. *Intermetallics*, **2008**, 16, 1206-1211	3.5	25
169	Corundum-type Fe-doped cathodic arc evaporated Al-Cr-O coatings. *Scripta Materialia*, **2015**, 97, 49-52	5.6	24
168	High-entropy oxide thin films based on Al-Cr-Nb-Ta-Ti. *Vacuum*, **2019**, 168, 108850	3.7	24
167	Role of droplets and iron on the phase formation of arc evaporated Al-Cr-oxide coatings. *Surface and Coatings Technology*, **2015**, 276, 735-742	4.4	24
166	Curvature-induced excess surface energy of fullerenes: Density functional theory and Monte Carlo simulations. *Physical Review B*, **2010**, 81,	3.3	24

165	Interfaces in nanostructured thin films and their influence on hardness. *International Journal of Materials Research*, **2005**, 96, 468-480		24
164	Stability and elasticity of metastable solid solutions and superlattices in the MoN□aN system: First-principles calculations. *Materials and Design*, **2018**, 144, 310-322	8.1	23
163	Insight into the structural evolution during TiN film growth via atomic resolution TEM. *Journal of Alloys and Compounds*, **2018**, 754, 257-267	5.7	23
162	Substoichiometry and tantalum dependent thermal stability of □structured W-Ta-B thin films. *Scripta Materialia*, **2018**, 155, 5-10	5.6	23
161	Structural properties of wurtzitelike ScGaN films grown by NH3-molecular beam epitaxy. *Journal of Applied Physics*, **2009**, 106, 113533	2.5	23
160	Continuum modeling of van der Waals interactions between carbon onion layers. *Carbon*, **2011**, 49, 1620-1627	6.2	23
159	Surface chemical changes induced by low-energy ion bombardment in chromium nitride layers. *Surface and Interface Analysis*, **2002**, 34, 740-743	1.5	23
158	Thermal expansion of rock-salt cubic AlN. *Applied Physics Letters*, **2015**, 107, 071602	3.4	22
157	Deformation and Cracking Mechanism in CrN/TiN Multilayer Coatings. *Coatings*, **2019**, 9, 363	2.9	22
156	Influence of Si on the target oxide poisoning during reactive arc evaporation of (Al,Cr)2O3 coatings. *Vacuum*, **2014**, 100, 29-32	3.7	22
155	A model for evolution of shape changing precipitates in multicomponent systems. *Acta Materialia*, **2008**, 56, 4896-4904	8.4	22
154	Correlating structural and mechanical properties of AlN/TiN superlattice films. *Scripta Materialia*, **2019**, 165, 159-163	5.6	21
153	Influence of carbon deficiency on phase formation and thermal stability of super-hard TaCy thin films. *Scripta Materialia*, **2018**, 149, 150-154	5.6	21
152	Ti-Al-N/Mo-Si-B multilayers: An architectural arrangement for high temperature oxidation resistant hard coatings. *Surface and Coatings Technology*, **2017**, 328, 80-88	4.4	21
151	Influence of different atmospheres on the thermal decomposition of Al-Cr-N coatings. *Journal Physics D: Applied Physics*, **2008**, 41, 155316	3	21
150	Influence of bipolar pulsed DC magnetron sputtering on elemental composition and micro-structure of Ti□lN thin films. *Surface and Coatings Technology*, **2008**, 203, 148-155	4.4	21
149	Annealing effect on the fracture toughness of CrN/TiN superlattices. *International Journal of Refractory Metals and Hard Materials*, **2018**, 71, 352-356	4.1	21
148	Tuning structure and mechanical properties of Ta-C coatings by N-alloying and vacancy population. *Scientific Reports*, **2018**, 8, 17669	4.9	21

147	Complementary ab initio and X-ray nanodiffraction studies of TaO. *Acta Materialia*, **2015**, 83, 276-284	8.4	20
146	Influence of coating thickness and substrate on stresses and mechanical properties of (Ti,Al,Ta)N/(Al,Cr)N multilayers. *Surface and Coatings Technology*, **2018**, 347, 92-98	4.4	20
145	Influence of oxygen impurities on growth morphology, structure and mechanical properties of TiAlN thin films. *Thin Solid Films*, **2016**, 603, 39-49	2.2	20
144	Assessment of ductile character in superhard Ta-C-N thin films. *Acta Materialia*, **2019**, 179, 17-25	8.4	20
143	The effect of interlayer composition and thickness on the stabilization of cubic AlN in AlN/TiAlN superlattices. *Thin Solid Films*, **2014**, 565, 94-100	2.2	20
142	Structural and mechanical properties of nitrogen-deficient cubic CrMoN and CrWN systems. *Scripta Materialia*, **2016**, 123, 34-37	5.6	19
141	Protective Transition Metal Nitride Coatings **2014**, 355-388		19
140	Influence of Tantalum on phase stability and mechanical properties of WB2. *MRS Communications*, **2019**, 9, 375-380	2.7	19
139	Influence of Deposition Temperature on the Phase Evolution of HfNbTiVZr High-Entropy Thin Films. *Materials*, **2019**, 12,	3.5	19
138	Crystallographic orientation dependent maximum layer thickness of cubic AlN in CrN/AlN multilayers. *Acta Materialia*, **2019**, 168, 190-202	8.4	18
137	Fracture properties of thin film TiN at elevated temperatures. *Materials and Design*, **2020**, 194, 108885	8.1	18
136	Thermal stability of CrN/AlN superlattice coatings. *Surface and Coatings Technology*, **2014**, 240, 250-254	4.4	18
135	Composition, microstructure and mechanical properties of boron containing multilayer coatings for hot forming tools. *Surface and Coatings Technology*, **2011**, 205, S24-S28	4.4	18
134	Tribological Properties of Nanocomposite CrC x /a-C:H Thin Films. *Tribology Letters*, **2007**, 27, 97-104	2.8	18
133	Toughness of Si alloyed high-entropy nitride coatings. *Materials Letters*, **2019**, 251, 238-240	3.3	17
132	Improved mechanical properties, thermal stabilities, and oxidation resistance of arc evaporated Ti-Al-N coatings through alloying with Ta. *Surface and Coatings Technology*, **2018**, 344, 244-249	4.4	17
131	Interfaces in arc evaporated Al-Cr-N/Al-Cr-O multilayers and their impact on hardness. *Surface and Coatings Technology*, **2017**, 324, 236-242	4.4	17
130	Reactive HiPIMS deposition of Ti-Al-N: Influence of the deposition parameters on the cubic to hexagonal phase transition. *Surface and Coatings Technology*, **2020**, 382, 125007	4.4	17

129	Correlating elemental distribution with mechanical properties of TiN/SiNx nanocomposite coatings. *Scripta Materialia*, **2019**, 170, 20-23	5.6	16
128	Guidelines for increasing the oxidation resistance of Ti-Al-N based coatings. *Thin Solid Films*, **2019**, 688, 137290	2.2	16
127	Thermal stability and mechanical properties of boron enhanced MoSi coatings. *Surface and Coatings Technology*, **2015**, 280, 282-290	4.4	16
126	Thermally-induced phase transformation sequence of arc evaporated TaAlN coatings. *Scripta Materialia*, **2016**, 113, 75-78	5.6	16
125	Influence of Fe impurities on structure and properties of arc-evaporated AlCrN coatings. *Surface and Coatings Technology*, **2013**, 215, 96-103	4.4	16
124	Impact of bias potential and layer arrangement on thermal stability of arc evaporated Al-Cr-N coatings. *Thin Solid Films*, **2016**, 610, 26-34	2.2	16
123	Cross-sectional X-ray nano-diffraction and -reflectivity analysis of multilayered AlTiNTiSiN thin films: Correlation between residual strain and bi-layer period. *Scripta Materialia*, **2015**, 107, 153-156	5.6	15
122	Thermal stability and age hardening of supersaturated AlCrN hard coatings. *International Heat Treatment and Surface Engineering*, **2007**, 1, 75-79		15
121	First principles studies on the impact of point defects on the phase stability of (AlxCr1x)2O3 solid solutions. *AIP Advances*, **2016**, 6, 025002	1.5	15
120	Diffusion behavior of C, Cr, and Fe in arc evaporated TiN- and CrN-based coatings and their influence on thermal stability and hardness. *Surface and Coatings Technology*, **2015**, 275, 185-192	4.4	14
119	High-rate deposition of AlTiN and related coatings with dense morphology by central cylindrical direct current magnetron sputtering. *Thin Solid Films*, **2014**, 556, 361-368	2.2	14
118	Vacancy-driven extended stability of cubic metastable Ta-Al-N and Nb-Al-N phases. *Surface and Coatings Technology*, **2017**, 326, 37-44	4.4	14
117	Effect of wavelength modulation of arc evaporated TiAlN/TiAlVN multilayer coatings on microstructure and mechanical/tribological properties. *Thin Solid Films*, **2015**, 581, 20-24	2.2	14
116	Epitaxial growth of AlCrN thin films on MgO(111). *Thin Solid Films*, **2008**, 517, 598-602	2.2	14
115	Sputter-deposited AlAu coatings. *Intermetallics*, **2004**, 12, 579-587	3.5	14
114	Thermal stability and mechanical properties of sputtered (Hf,Ta,V,W,Zr)-diborides. *Acta Materialia*, **2020**, 200, 559-569	8.4	14
113	Controlling microstructure, preferred orientation, and mechanical properties of Cr-Al-N by bombardment and alloying with Ta. *Journal of Applied Physics*, **2016**, 119, 065304	2.5	14
112	Dislocation densities and alternating strain fields in CrN/AlN nanolayers. *Thin Solid Films*, **2017**, 638, 189-200	2.2	13

111	Selective phase formation in substoichiometric Al-Cr-based oxides. *Scripta Materialia*, **2017**, 139, 144-147	5.6	13
110	Microstructural modifications in powder-metallurgically produced Al0.675Cr0.275Fe0.05 targets during cathodic arc evaporation. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2016**, 34, 021603	2.9	13
109	Mechanical properties and oxidation resistance of Al-Cr-N/Ti-Al-Ta-N multilayer coatings. *Surface and Coatings Technology*, **2018**, 347, 427-433	4.4	13
108	How to get noWear? A new take on the design of in-situ formed high performing low-friction tribofilms. *Materials and Design*, **2020**, 190, 108519	8.1	12
107	Influence of phase transformation on the damage tolerance of Ti-Al-N coatings. *Vacuum*, **2018**, 155, 153-157	3.7	12
106	Mechanical properties and epitaxial growth of TiN/AlN superlattices. *Surface and Coatings Technology*, **2019**, 375, 1-7	4.4	12
105	Superlattice-induced oscillations of interplanar distances and strain effects in the CrN/AlN system. *Physical Review B*, **2017**, 95,	3.3	12
104	Oxidation behavior of arc evaporated Al-Cr-Si-N thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2012**, 30, 061501	2.9	12
103	Thermal annealing of sputtered AlSiCuN films. *Vacuum*, **2003**, 72, 21-28	3.7	12
102	Mechanistic study of superlattice-enabled high toughness and hardness in MoN/TaN coatings. *Communications Materials*, **2020**, 1,	6	12
101	Structure, mechanical properties, and thermal stability of arc evaporated (Al1-xCrx)2O3 coatings. *Surface and Coatings Technology*, **2018**, 342, 37-47	4.4	11
100	Magnetic field strength influence on the reactive magnetron sputter deposition of Ta2O5. *Journal Physics D: Applied Physics*, **2013**, 46, 335203	3	11
99	Cerium doping of Ti-Al-N coatings for excellent thermal stability and oxidation resistance. *Surface and Coatings Technology*, **2017**, 326, 165-172	4.4	11
98	Effect of Mo on the thermal stability, oxidation resistance, and tribo-mechanical properties of arc evaporated Ti-Al-N coatings. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2017**, 35, 061515	2.9	11
97	Oxidation behavior and tribological properties of multilayered Ti-Al-N/Mo-Si-B thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2015**, 33, 05E129	2.9	11
96	Improving phase stability, hardness, and oxidation resistance of reactively magnetron sputtered (Al,Cr,Nb,Ta,Ti)N thin films by Si-alloying. *Surface and Coatings Technology*, **2021**, 416, 127162	4.4	11
95	Fracture toughness trends of modulus-matched TiN/(Cr,Al)N thin film superlattices. *Acta Materialia*, **2021**, 202, 376-386	8.4	11
94	Atomistic Modeling-Based Design of Novel Materials . *Advanced Engineering Materials*, **2017**, 19, 1600688	3.5	10

93	Influence of substrate bias on structure and mechanical properties of arc evaporated (Al,Cr) 2 O 3 and (Al,Cr,Fe) 2 O 3 coatings. *Surface and Coatings Technology*, **2017**, 319, 386-393	4.4	10
92	Thermally stable superhard diborides: An ab initio guided case study for V-W-diboride thin films. *Acta Materialia*, **2020**, 186, 487-493	8.4	10
91	High Temperature Oxidation Resistance of CrAlYN-Coated Ti45Al8Nb. *Oxidation of Metals*, **2011**, 75, 359-376	1.6	10
90	Development of a multi-variate calibration approach for quantitative analysis of oxidation resistant Mo–Si–B coatings using laser ablation inductively coupled plasma mass spectrometry. *Spectrochimica Acta, Part B: Atomic Spectroscopy*, **2016**, 120, 57-62	3.1	10
89	Thermal stability and mechanical properties of Ti-Al-B-N thin films. *International Journal of Refractory Metals and Hard Materials*, **2018**, 71, 320-324	4.1	10
88	Electron-configuration stabilized (W,Al)B2 solid solutions. *Acta Materialia*, **2019**, 174, 398-405	8.4	9
87	Hard TiAlN endowed with high heat-resistance through alloying with Ta and Ce. *Surface and Coatings Technology*, **2019**, 372, 26-33	4.4	9
86	Arc evaporated W-alloyed Ti-Al-N coatings for improved thermal stability, mechanical, and tribological properties. *Surface and Coatings Technology*, **2017**, 332, 275-282	4.4	9
85	On the phase evolution of arc evaporated Al-Cr-based intermetallics and oxides. *Thin Solid Films*, **2017**, 644, 120-128	2.2	9
84	Kinetics of Ga droplet decay on thin carbon films. *Applied Physics Letters*, **2013**, 102, 161601	3.4	9
83	Single-crystal growth of NaCl-structure AlCrN thin films on MgO(001) by magnetron sputter epitaxy. *Scripta Materialia*, **2007**, 57, 1089-1092	5.6	9
82	Thermal stability of sputtered intermetallic AlAu coatings. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2007**, 25, 1402	2.9	9
81	Influence of Ta on the oxidation resistance of WB2 coatings. *Journal of Alloys and Compounds*, **2021**, 864, 158121	5.7	9
80	Interface controlled microstructure evolution in nanolayered thin films. *Scripta Materialia*, **2016**, 123, 13-16	5.6	8
79	Structure, phase evolution, and mechanical properties of DC, pulsed DC, and high power impulse magnetron sputtered TaN films. *Surface and Coatings Technology*, **2018**, 347, 304-312	4.4	8
78	Annealing studies and oxidation tests of a hybrid multilayer arrangement of cathodic arc evaporated TiAlN and reactively sputtered TaAlN coatings. *Surface and Coatings Technology*, **2015**, 283, 89-95	4.4	8
77	Interfacial coherency stress distribution in TiN/AlN bilayer and multilayer films studied by FEM analysis. *Computational Materials Science*, **2012**, 55, 211-216	3.2	8
76	Microstructure and mechanical properties of sputtered intermetallic AlAu coatings. *Journal of Applied Physics*, **2007**, 102, 023523	2.5	8

75	Atomic scale investigations of thermally treated nano-structured Ti-Al-N/Mo-Si-B multilayers. *Surface and Coatings Technology*, **2018**, 349, 480-487	4.4	8
74	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	4.4	7
73	Adhesive wear formation on PVD coated tools applied in hot forming of Al-Si coated steel sheets. *Wear*, **2019**, 430-431, 309-316	3.5	7
72	Deformation behaviour of TiN and TiAlN coatings at 295 to 573 K. *Thin Solid Films*, **2019**, 688, 137363	2.2	7
71	Impact of lanthanum and boron on the growth, thermomechanical properties and oxidation resistance of TiAlN thin films. *Thin Solid Films*, **2019**, 688, 137239	2.2	7
70	Thermal stability of arc evaporated Al-Cr-O and Al-Cr-O/Al-Cr-N multilayer coatings. *Surface and Coatings Technology*, **2018**, 352, 213-221	4.4	7
69	Nano-structural investigation of Ti-Al-N/Mo-Si-B multilayer coatings: A comparative study by APT and HR-TEM. *Vacuum*, **2018**, 157, 173-179	3.7	7
68	Low Friction CrN/TiN Multilayer Coatings. *Tribology Letters*, **2012**, 46, 87-93	2.8	7
67	Thermal Stability and Self-Arrangement of Nanocrystalline Hard Coatings **2004**, 57-68		7
66	Point-defect engineering of MoN/TaN superlattice films: A first-principles and experimental study. *Materials and Design*, **2020**, 186, 108211	8.1	7
65	High-throughput first-principles search for ceramic superlattices with improved ductility and fracture resistance. *Acta Materialia*, **2021**, 206, 116615	8.4	7
64	Atomic insights on intermixing of nanoscale nitride multilayer triggered by nanoindentation. *Acta Materialia*, **2021**, 214, 117004	8.4	7
63	Experimental Chemistry and Structural Stability of AlNbEnabled by Antisite Defects Formation. *Materials*, **2019**, 12,	3.5	6
62	On the oxidation behaviour of cathodic arc evaporated Al Cr and Al Cr O coatings. *Vacuum*, **2019**, 163, 1-9	3.7	6
61	Impact of Si and B on the phase stability of cathodic arc evaporated Al0.70Cr0.30-based oxides. *Scripta Materialia*, **2018**, 152, 107-111	5.6	6
60	The impact of Ni and Mo on growth-morphology and mechanical properties of arc evaporated Ti-Cr-N hard coatings. *Surface and Coatings Technology*, **2019**, 377, 124917	4.4	6
59	In situ transmission electron microscopy studies of the kinetics of Pt-Mo alloy diffusion in ZrB2 thin films. *Applied Physics Letters*, **2013**, 103, 121601	3.4	6
58	In-situ XRD studies of arc evaporated Al-Cr-O coatings during oxidation. *Surface and Coatings Technology*, **2019**, 358, 934-941	4.4	6

57	Impact of morphology and phase composition on mechanical properties of □structured (Cr,Al)2O3/(Al,Cr,X)2O3 multilayers. *Scripta Materialia*, **2018**, 146, 208-212	5.6	6
56	Thermal stability of arc evaporated Al-Cr-O-N coatings. *Surface and Coatings Technology*, **2018**, 356, 64-71	4.4	6
55	Indentation response of a superlattice thin film revealed by in-situ scanning X-ray nanodiffraction. *Acta Materialia*, **2020**, 195, 425-432	8.4	5
54	Impact of sputter deposition parameters on the microstructural and piezoelectric properties of CrxAl1□N thin films. *Thin Solid Films*, **2018**, 648, 76-82	2.2	5
53	Triggering the Phase Evolution Within (Al,Cr)2O3-based Coatings by Alloying and Microstructural Concepts. *BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik*, **2016**, 161, 325-329	0.6	5
52	Oxidation behavior of intermetallic Al-Cr and Al-Cr-Fe macroparticles. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2017**, 35, 061601	2.9	5
51	Crossover of texture and morphology in (Ti1□Alx)1□YyN alloy films and the pathway of structure evolution. *Surface and Coatings Technology*, **2014**, 257, 3-14	4.4	5
50	Laser based analysis of transition metal boride thin films using liquid standards. *Microchemical Journal*, **2020**, 152, 104449	4.8	5
49	Reactive in-situ formation and self-assembly of MoS2 nanoflakes in carbon tribofilms for low friction. *Materials and Design*, **2021**, 199, 109427	8.1	5
48	Oxygen dependent morphology and mechanical properties of AlCr(Fe)-based coatings. *Surface and Coatings Technology*, **2018**, 349, 103-110	4.4	5
47	Some Materials Science Aspects of PVD Hard Coatings **2001**, 263-274		5
46	Microstructure of Al-containing magnetron sputtered TiB2 thin films. *Thin Solid Films*, **2019**, 688, 137361	2.2	4
45	The influence of synthetic air flow on the properties of arc evaporated Al-Cr-O-N coatings. *Thin Solid Films*, **2019**, 688, 137252	2.2	4
44	On the phase formation of cathodic arc evaporated Al1□Crx-based intermetallic coatings and substoichiometric oxides. *Surface and Coatings Technology*, **2018**, 352, 392-398	4.4	4
43	Structure Models of Massively Transformed High Niobium Containing TiAl Alloys. *Materials Research Society Symposia Proceedings*, **2006**, 980, 1		4
42	Processing Fiber-Reinforced Polymers: Specific Wear Phenomena Caused by Filler Materials. *Polymer Engineering and Science*, **2020**, 60, 78-85	2.3	4
41	Ultra-high oxidation resistance of nano-structured thin films. *Materials and Design*, **2021**, 201, 109499	8.1	4
40	Enhanced fracture toughness in ceramic superlattice thin films: On the role of coherency stresses and misfit dislocations. *Materials and Design*, **2021**, 202, 109517	8.1	4

39	Correlating point defects with mechanical properties in nanocrystalline TiN thin films. *Materials and Design*, **2021**, 207, 109844	8.1	4
38	Oxidation Resistance and Ductility of a Coated □TiAl Based Alloy. *BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik*, **2008**, 153, 268-272	0.6	3
37	Self-hardening of Nanocrystalline Ti-B-N Thin Films. *Microscopy and Microanalysis*, **2006**, 12, 720-721	0.5	3
36	First Principles Study of Water-Based Self-Assembled Nanobearing Effect in CrN/TiN Multilayer Coatings. *Solid State Phenomena*, **2016**, 258, 373-378	0.4	3
35	Microstructure and phase evolution of gradually-structured arc evaporated Al0.25Cr0.75-based oxide coatings. *Vacuum*, **2018**, 155, 645-649	3.7	3
34	Atomistic mechanisms underlying plasticity and crack growth in ceramics: a case study of AlN/TiN superlattices. *Acta Materialia*, **2022**, 229, 117809	8.4	3
33	On the oxidation behavior of cathodic arc evaporated Al-Cr-Fe and Al-Cr-Fe-O coatings. I. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2019**, 37, 041503	2.9	2
32	On the oxidation behavior of cathodic arc evaporated Al-Cr-Fe and Al-Cr-Fe-O coatings. II. Transmission electron microscopy investigations of Al0.675Cr0.275Fe0.05-based films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2019**, 37, 041504	2.9	2
31	Ab initio studies on the adsorption and implantation of Al and Fe to nitride materials. *Journal of Applied Physics*, **2015**, 118, 125306	2.5	2
30	How microalloying of the Al target can improve process and film characteristics of sputtered alumina. *Surface and Coatings Technology*, **2020**, 393, 125762	4.4	2
29	Progress in the synthesis of Al- and Cr-based sesquioxide coatings for protective applications. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2019**, 37, 060802	2.9	2
28	Strain-stabilized Al-containing high-entropy sublattice nitrides. *Acta Materialia*, **2022**, 224, 117483	8.4	2
27	Thermal Stability and Mechanical Properties of Sputtered (Hf,Ta,V,W,Zr)-Diborides. *SSRN Electronic Journal*,	1	2
26	Mapping the mechanical properties in nitride coatings at the nanometer scale. *Acta Materialia*, **2020**, 194, 343-353	8.4	2
25	Growth-twins in CrN/AlN multilayers induced by hetero-phase interfaces. *Acta Materialia*, **2020**, 185, 157-170	8.4	2
24	Thermal stability and oxidation resistance of architecturally designed TiAlN- and TiAlTaN-based multilayers. *Surface and Coatings Technology*, **2020**, 385, 125444	4.4	2
23	The MoNTaN system: Role of vacancies in phase stability and mechanical properties. *Materials and Design*, **2021**, 202, 109568	8.1	2
22	Phase formation and mechanical properties of reactively and non-reactively sputtered Ti-B-N hard coatings. *Surface and Coatings Technology*, **2021**, 420, 127327	4.4	2

21	Atomic-scale understanding of the structural evolution of TiN/AlN superlattice during nanoindentation—Part 1: Deformation. *Acta Materialia*, **2022**, 234, 118008	8.4	2
20	Thermomechanical properties and oxidation resistance of Cr–Si alloyed TiAlN thin films. *Vacuum*, **2019**, 166, 231-238	3.7	1
19	Structure and mechanical properties of architecturally designed Ti-Al-N and Ti-Al-Ta-N-based multilayers. *Surface and Coatings Technology*, **2020**, 385, 125355	4.4	1
18	Tuning of structure, grain orientation and mechanical properties in reactively sputtered (Al,Mo,Ta,V,W)N. *Materials and Design*, **2022**, 213, 110346	8.1	1
17	Impact of oxygen content on the thermal stability of Ti-Al-O-N coatings based on computational and experimental studies. *Acta Materialia*, **2022**, 227, 117706	8.4	1
16	Influence of experimental constraints on micromechanical assessment of micromachined hard-tissue samples. *Journal of the Mechanical Behavior of Biomedical Materials*, **2020**, 106, 103741	4.1	1
15	Time-averaged and time-resolved ion fluxes related to reactive HiPIMS deposition of Ti-Al-N films. *Surface and Coatings Technology*, **2021**, 424, 127638	4.4	1
14	Mechanical properties of CrN-based superlattices: Impact of magnetism. *Acta Materialia*, **2021**, 218, 117195	8.4	1
13	Synthesis and electrochemical properties of nanoporous CrN thin film electrodes for supercapacitor applications. *Materials and Design*, **2021**, 209, 109949	8.1	1
12	Atomic-scale understanding of the structural evolution in TiN/AlN superlattice during nanoindentation—Part 2: Strengthening. *Acta Materialia*, **2022**, 118009	8.4	1
11	Effect of Si-addition on structure and thermal stability of Ti-Al-N coatings. *Journal of Alloys and Compounds*, **2022**, 917, 165483	5.7	1
10	TGO formation and oxygen diffusion in Al-rich gamma-TiAl PVD-coatings on TNM alloys. *Scripta Materialia*, **2022**, 210, 114455	5.6	0
9	Reactive HiPIMS deposition of Al-oxide thin films using W-alloyed Al targets. *Surface and Coatings Technology*, **2021**, 422, 127467	4.4	0
8	Wear in hard metal check valves: In-situ surface modification through tribolayer formation in dry contact. *Vacuum*, **2021**, 192, 110482	3.7	0
7	Heavy-element-alloying for toughness enhancement of hard nitrides on the example Ti-W-N. *Acta Materialia*, **2022**, 231, 117897	8.4	0
6	High-entropy alloy inspired development of compositionally complex superhard (Hf,Ta,Ti,V,Zr)-B-N coatings. *Materials and Design*, **2022**, 218, 110695	8.1	0
5	Magnetron Sputtered Intermetallic Al2Au and Al-Zr-Y Coatings for the Oxidation Protection of γ-TiAl. *Materials Research Society Symposia Proceedings*, **2006**, 980, 8		
4	Sputtered Coatings Based on the Al2AU Phase. *Materials Research Society Symposia Proceedings*, **2004**, 842, 333		

3	Thermal Stability of Nanostructured TiN-TiB2 Thin Films. *Materials Research Society Symposia Proceedings*, **2004**, 854, U6.2.1	
2	Ab initio supported development of TiN/MoN superlattice thin films with improved hardness and toughness. *Acta Materialia*, **2022**, 231, 117871	8.4
1	Magnetron sputtered NiAl/TiBx multilayer thin films. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2022**, 40, 033410	2.9