Rostislav Daniel

List of Publications by Year
in descending order

82 papers	2,545 citations	172207 29 h-index	223531 46 g-index
82 all docs	82 docs citations	82 times ranked	1865 citing authors

#	Article	IF	Citations
1	The origin of stresses in magnetron-sputtered thin films with zone T structures. Acta Materialia, 2010, 58, 2621-2633.	3.8	152
2	Advanced characterization methods for wear resistant hard coatings: A review on recent progress. Surface and Coatings Technology, 2016, 285, 31-46.	2.2	116
3	X-ray nanodiffraction reveals strain and microstructure evolution in nanocrystalline thin films. Scripta Materialia, 2012, 67, 748-751.	2.6	103
4	Finite element simulation of the effect of surface roughness on nanoindentation of thin films with spherical indenters. Surface and Coatings Technology, 2007, 202, 1103-1107.	2.2	79
5	X-ray analysis of residual stress gradients in TiN coatings by a Laplace space approach and cross-sectional nanodiffraction: a critical comparison. Journal of Applied Crystallography, 2013, 46, 1378-1385.	1.9	78
6	Size effect of thermal expansion and thermal/intrinsic stresses in nanostructured thin films: Experiment and model. Acta Materialia, 2011, 59, 6631-6645.	3.8	77
7	Grain boundary design of thin films: Using tilted brittle interfaces for multiple crack deflection toughening. Acta Materialia, 2017, 122, 130-137.	3.8	71
8	Structure and thermal stability of arc evaporated (Ti0.33Al0.67)1â^ˆ’xSixN thin films. Thin Solid Films, 2008, 517, 714-721.	0.8	68
9	A novel approach for determining fracture toughness of hard coatings on the micrometer scale. Scripta Materialia, 2012, 67, 708-711.	2.6	61
10	Fracture toughness enhancement of brittle nanostructured materials by spatial heterogeneity: A micromechanical proof for CrN/Cr and TiN/SiOx multilayers. Materials and Design, 2016, 104, 227-234.	3.3	60
11	Origins of microstructure and stress gradients in nanocrystalline thin films: The role of growth parameters and self-organization. Acta Materialia, 2013, 61, 6255-6266.	3.8	59
12	Structure and mechanical properties of magnetron sputtered Zrâ€“Tiâ€“Cuâ€“N films. Surface and Coatings Technology, 2003, 166, 243-253.	2.2	58
13	Structure and properties of magnetron sputtered Zrâ€“Siâ€“N films with a high (â‰¥25 at.%) Si content. Thin Solid Films, 2005, 478, 238-247.	0.8	57
14	Nanoscale residual stress depth profiling by Focused Ion Beam milling and eigenstrain analysis. Materials and Design, 2018, 145, 55-64.	3.3	54
15	X-ray nanodiffraction reveals stress distribution across an indented multilayered CrNâ€“Cr thin film. Acta Materialia, 2015, 85, 24-31.	3.8	53
16	In-situ Observation of Cross-Sectional Microstructural Changes and Stress Distributions in Fracturing TiN Thin Film during Nanoindentation. Scientific Reports, 2016, 6, 22670.	1.6	52
17	30 nm X-ray focusing correlates oscillatory stress, texture and structural defect gradients across multilayered TiN-SiOx thin film. Acta Materialia, 2018, 144, 862-873.	3.8	51
18	Properties of reactively sputtered Wâ€“Siâ€“N films. Surface and Coatings Technology, 2006, 200, 3886-3895.	2.2	50

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19	Influence of Al and Si content on structure and mechanical properties of arc evaporated Alâ€“Crâ€“Siâ€“N thin films. Thin Solid Films, 2013, 534, 403-409.	0.8	48
20	Self-organized periodic soft-hard nanolamellae in polycrystalline TiAlN thin films. Thin Solid Films, 2013, 545, 29-32.	0.8	46
21	Superior oxidation resistance, mechanical properties and residual stresses of an Al-rich nanolamellar Ti 0.05 Al 0.95 N coating prepared by CVD. Surface and Coatings Technology, 2014, 258, 1119-1127.	2.2	44
22	High-temperature oxidation resistance of Taâ€“Siâ€“N films with a high Si content. Surface and Coatings Technology, 2006, 200, 4091-4096.	2.2	42
23	Al-rich cubic Al0.8Ti0.2N coating with self-organized nano-lamellar microstructure: Thermal and mechanical properties. Surface and Coatings Technology, 2016, 291, 89-93.	2.2	42
24	Thermal stability of magnetron sputtered Zrâ€“Siâ€“N films. Surface and Coatings Technology, 2006, 201, 3368-3376.	2.2	40
25	Texture development in polycrystalline CrN coatings: the role of growth conditions and a Cr interlayer. Journal Physics D: Applied Physics, 2009, 42, 075401.	1.3	40
26	Lateral gradients of phases, residual stress and hardness in a laser heated Ti0.52Al0.48N coating on hard metal. Surface and Coatings Technology, 2012, 206, 4502-4510.	2.2	37
27	Evolution of structure and residual stress of a fcc/hex-AlCrN multi-layered system upon thermal loading revealed by cross-sectional X-ray nano-diffraction. Acta Materialia, 2019, 162, 55-66.	3.8	35
28	Cross-sectional structure-property relationship in a graded nanocrystalline Ti1âˆ’xAlxN thin film. Acta Materialia, 2016, 102, 212-219.	3.8	34
29	Microstructural evolution and thermal stability of AlCr(Si)N hard coatings revealed by in-situ high-temperature high-energy grazing incidence transmission X-ray diffraction. Acta Materialia, 2020, 186, 545-554.	3.8	34
30	Stress evolution in CrN/Cr coating systems during thermal straining. Thin Solid Films, 2008, 516, 1972-1976.	0.8	30
31	Interlayer thickness influence on the tribological response of bi-layer coatings. Tribology International, 2010, 43, 108-112.	3.0	29
32	Cross-sectional X-ray nanobeam diffraction analysis of a compositionally graded CrNx thin film. Thin Solid Films, 2013, 542, 1-4.	0.8	29
33	Using pulsed and modulated photothermal radiometry to measure the thermal conductivity of thin films. Thermochimica Acta, 2013, 556, 1-5.	1.2	28
34	Peculiarity of self-assembled cubic nanolamellae in the TiN/AlN system: Epitaxial self-stabilization by element deficiency/excess. Acta Materialia, 2017, 131, 391-399.	3.8	28
35	Residual stresses and thermal fatigue in CrN hard coatings characterized by high-temperature synchrotron X-ray diffraction. Thin Solid Films, 2010, 518, 2090-2096.	0.8	27
36	X-ray diffraction analysis of three-dimensional residual stress fields reveals origins of thermal fatigue in uncoated and coated steel. Scripta Materialia, 2010, 62, 774-777.	2.6	26

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37	Structural characterization of a Cu/MgO(001) interface using CS-corrected HRTEM. Thin Solid Films, 2010, 519, 1662-1667.	0.8	26
38	Anisotropy of fracture toughness in nanostructured ceramics controlled by grain boundary design. Materials and Design, 2019, 161, 80-85.	3.3	26
39	Elastic constants of fibre-textured thin films determined by X-ray diffraction. Journal of Applied Crystallography, 2009, 42, 416-428.	1.9	25
40	Complementary ab initio and X-ray nanodiffraction studies of Ta2O5. Acta Materialia, 2015, 83, 276-284.	3.8	24
41	Microstructure and mechanical properties of nanocrystalline Alâ€“Crâ€“Bâ€“N thin films. Surface and Coatings Technology, 2012, 213, 1-7.	2.2	23
42	Insights into the atomic and electronic structure triggered by ordered nitrogen vacancies in CrN. Physical Review B, 2013, 87, .	1.1	22
43	The peculiarity of the metal-ceramic interface. Scientific Reports, 2015, 5, 11460.	1.6	22
44	Residual stresses in thermally cycled CrN coatings on steel. Thin Solid Films, 2008, 517, 1167-1171.	0.8	19
45	Combinatorial refinement of thin-film microstructure, properties and process conditions: iterative nanoscale search for self-assembled TiAlN nanolamellae. Journal of Applied Crystallography, 2016, 49, 2217-2225.	1.9	19
46	Biomimetic hard and tough nanoceramic Tiâ€“Alâ€“N film with self-assembled six-level hierarchy. Nanoscale, 2019, 11, 7986-7995.	2.8	19
47	Thermally-induced formation of hexagonal AlN in AlCrN hard coatings on sapphire: Orientation relationships and residual stresses. Surface and Coatings Technology, 2010, 205, 1320-1323.	2.2	18
48	Influence of varying nitrogen partial pressures on microstructure, mechanical and optical properties of sputtered TiAlON coatings. Acta Materialia, 2016, 119, 26-34.	3.8	18
49	Nanoscale evolution of stress concentrations and crack morphology in multilayered CrN coating during indentation: Experiment and simulation. Materials and Design, 2020, 188, 108478.	3.3	18
50	A combinatorial X-ray sub-micron diffraction study of microstructure, residual stress and phase stability in TiAlN coatings. Surface and Coatings Technology, 2014, 257, 108-113.	2.2	17
51	Mechanical and tribological properties of AlTiN/AlCrBN multilayer films synthesized by cathodic arc evaporation. Surface and Coatings Technology, 2014, 246, 57-63.	2.2	17
52	Nanoscale residual stress and microstructure gradients across the cutting edge area of a TiN coating on WC Co. Scripta Materialia, 2020, 182, 11-15.	2.6	17
53	Rapid determination of stress factors and absolute residual stresses in thin films. Journal of Applied Crystallography, 2006, 39, 777-783.	1.9	16
54	Oxidation behavior of arc evaporated Al-Cr-Si-N thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2012, 30, .	0.9	16

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55	Multi-scale interface design of strong and damage resistant hierarchical nanostructured materials. Materials and Design, 2020, 196, 109169.	3.3	16
56	Microstructure modifications of CrN coatings by pulsed bias sputtering. Surface and Coatings Technology, 2012, 206, 4666-4671.	2.2	15
57	Mechanical property enhancement in laminates through control of morphology and crystal orientation. Journal Physics D: Applied Physics, 2015, 48, 295303.	1.3	15
58	Resolving depth evolution of microstructure and hardness in sputtered CrN film. Thin Solid Films, 2015, 581, 75-79.	0.8	15
59	Antibacterial Silicon Oxide Thin Films Doped with Zinc and Copper Grown by Atmospheric Pressure Plasma Chemical Vapor Deposition. Nanomaterials, 2019, 9, 255.	1.9	15
60	X-ray nanodiffraction analysis of stress oscillations in a W thin film on through-silicon via. Journal of Applied Crystallography, 2016, 49, 182-187.	1.9	14
61	Microstructure-controlled depth gradients of mechanical properties in thin nanocrystalline films: Towards structure-property gradient functionalization. Journal of Applied Physics, 2015, 117, .	1.1	13
62	Mono-textured nanocrystalline thin films with pronounced stress-gradients: On the role of grain boundaries in the stress evolution. Journal of Applied Physics, 2014, 115, .	1.1	12
63	Stress-controlled decomposition routes in cubic AlCrN films assessed by in-situ high-temperature high-energy grazing incidence transmission X-ray diffraction. Scientific Reports, 2019, 9, 18027.	1.6	12
64	Structure-stress relationships in nanocrystalline multilayered $Al_{0.7}Cr_{0.3}N/Al_{0.9}Cr_{0.1}N$ coatings studied by cross-sectional X-ray nanodiffraction. Materials and Design, 2019, 170, 107702.	3.3	11
65	Impact of Si on the high-temperature oxidation of AlCr(Si)N coatings. Journal of Materials Science and Technology, 2022, 100, 91-100.	5.6	11
66	High-temperature residual stresses in thin films characterized by x-ray diffraction substrate curvature method. Review of Scientific Instruments, 2007, 78, 036103.	0.6	10
67	Microstructure, mechanical and optical properties of TiAlON coatings sputter-deposited with varying oxygen partial pressures. Journal Physics D: Applied Physics, 2016, 49, 025307.	1.3	10
68	Hierarchical Architectures to Enhance Structural and Functional Properties of Brittle Materials. Advanced Engineering Materials, 2017, 19, 1600683.	1.6	10
69	Evolution of stress fields during crack growth and arrest in a brittle-ductile CrN-Cr clamped-cantilever analysed by X-ray nanodiffraction and modelling. Materials and Design, 2021, 198, 109365.	3.3	10
70	Precipitation-based grain boundary design alters Inter- to Trans-granular Fracture in AlCrN Thin Films. Acta Materialia, 2022, 237, 118156.	3.8	10
71	Influence of the Silver Content on Mechanical Properties of Ti-Cu-Ag Thin Films. Nanomaterials, 2021, 11, 435.	1.9	8
72	Nitrogen atom shift and the structural change in chromium nitride. Acta Materialia, 2015, 98, 119-127.	3.8	6

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73	Atomic and electronic structures of a transition layer at the CrN/Cr interface. Journal of Applied Physics, 2011, 110, 043524.	1.1	5
74	Complementary High Spatial Resolution Methods in Materials Science and Engineering. Advanced Engineering Materials, 2017, 19, 1600671.	1.6	5
75	Extraordinary high-temperature behavior of electrically conductive Hf7B23Si22C6N40 ceramic film. Surface and Coatings Technology, 2020, 391, 125686.	2.2	5
76	Evolution of structure, residual stress, thermal stability and wear resistance of nanocrystalline multilayered Al0.7Cr0.3N-Al0.67Ti0.33N coatings. Surface and Coatings Technology, 2021, 425, 127712.	2.2	5
77	Nanoscale stress distributions and microstructural changes at scratch track cross-sections of a deformed brittle-ductile CrN-Cr bilayer. Materials and Design, 2020, 195, 109023.	3.3	4
78	Transmission electron microscopy characterization of CrN films on MgO(001). Thin Solid Films, 2013, 545, 154-160.	0.8	3
79	Ion irradiation-induced localized stress relaxation in W thin film revealed by cross-sectional X-ray nanodiffraction. Thin Solid Films, 2021, 722, 138571.	0.8	3
80	Stress in physical vapor deposited thin films: Measurement methods and selected examples. , 2021, , 359-436.		2
81	A Novel Technique to Determine Elastic Constants of Thin Films. Materials Research Society Symposia Proceedings, 2008, 1139, 1.	0.1	0
82	Macroscopic Fracture Behaviour of CrN Hard Coatings Evaluated by X-Ray Diffraction Coupled with Four-Point Bending. Materials Science Forum, 2013, 768-769, 272-279.	0.3	0