

Petr Vařina

List of Publications by Year in descending order

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81
papers

1,046
citations

471509

17
h-index

580821

25
g-index

81
all docs

81
docs citations

81
times ranked

778
citing authors

#	ARTICLE	IF	CITATIONS
1	Experimental study of a pre-ionized high power pulsed magnetron discharge. <i>Plasma Sources Science and Technology</i> , 2007, 16, 501-510.	3.1	58
2	Superhard nanocomposite nc-TiC/a-C:H coatings: The effect of HiPIMS on coating microstructure and mechanical properties. <i>Surface and Coatings Technology</i> , 2017, 311, 257-267.	4.8	52
3	Reduction of transient regime in fast preionized high-power pulsed-magnetron discharge. <i>Europhysics Letters</i> , 2005, 72, 390-395.	2.0	37
4	Air DCSBD plasma treatment of Al surface at atmospheric pressure. <i>Surface and Coatings Technology</i> , 2012, 206, 3011-3016.	4.8	34
5	Theoretical study of pulsed microwave discharge in nitrogen. <i>Plasma Sources Science and Technology</i> , 2005, 14, 751-756.	3.1	30
6	Effect of magnetic field on spoke behaviour in HiPIMS plasma. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 095204.	2.8	28
7	Evaluation of composition, mechanical properties and structure of nc-TiC/a-C:H coatings prepared by balanced magnetron sputtering. <i>Surface and Coatings Technology</i> , 2012, 211, 111-116.	4.8	27
8	Study of a fast high power pulsed magnetron discharge: role of plasma deconfinement on the charged particle transport. <i>Plasma Sources Science and Technology</i> , 2008, 17, 035007.	3.1	26
9	Simultaneous measurement of N and O densities in plasma afterglow by means of NO titration. <i>Plasma Sources Science and Technology</i> , 2004, 13, 668-674.	3.1	25
10	Characterization of a periodic instability in filamentary surface wave discharge at atmospheric pressure in argon. <i>Journal Physics D: Applied Physics</i> , 2012, 45, 055201.	2.8	25
11	Ti atom and Ti ion number density evolution in standard and multi-pulse HiPIMS. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 365202.	2.8	22
12	Evolution of structure and mechanical properties of hard yet fracture resistant W-B-C coatings with varying C/W ratio. <i>Surface and Coatings Technology</i> , 2018, 340, 103-111.	4.8	22
13	Spatial characterization of an IPVD reactor: neutral gas temperature and interpretation of optical spectroscopy measurements. <i>Plasma Sources Science and Technology</i> , 2005, 14, 321-328.	3.1	19
14	On the oxygen addition into nitrogen post-discharges. <i>Journal Physics D: Applied Physics</i> , 2009, 42, 075202.	2.8	19
15	Effect of substrate bias voltage on the composition, microstructure and mechanical properties of W-B-C coatings. <i>Applied Surface Science</i> , 2020, 528, 146966.	6.1	19
16	Non-monotonous evolution of hybrid PVD-PECVD process characteristics on hydrocarbon supply. <i>Surface and Coatings Technology</i> , 2013, 232, 283-289.	4.8	18
17	On the control of deposition process for enhanced mechanical properties of nc-TiC/a-C:H coatings with DC magnetron sputtering at low or high ion flux. <i>Surface and Coatings Technology</i> , 2014, 255, 8-14.	4.8	18
18	Determination of titanium atom and ion densities in sputter deposition plasmas by optical emission spectroscopy. <i>Plasma Sources Science and Technology</i> , 2015, 24, 065022.	3.1	18

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19	Thermal stability of hard nanocomposite Mo-B-C coatings. <i>Vacuum</i> , 2017, 138, 199-204.	3.5	18
20	The tribological properties of short range ordered W-B-C protective coatings prepared by pulsed magnetron sputtering. <i>Surface and Coatings Technology</i> , 2019, 357, 364-371.	4.8	18
21	Revisiting particle dynamics in HiPIMS discharges. I. General effects. <i>Journal of Applied Physics</i> , 2020, 128, .	2.5	18
22	Ionisation fractions of sputtered titanium species at target and substrate region in HiPIMS. <i>Plasma Sources Science and Technology</i> , 2020, 29, 055010.	3.1	18
23	On the study of the mechanical properties of Mo-B-C coatings. <i>EPJ Applied Physics</i> , 2016, 75, 24716.	0.7	17
24	Adhesion and dynamic impact wear of nanocomposite TiC-based coatings prepared by DCMS and HiPIMS. <i>International Journal of Refractory Metals and Hard Materials</i> , 2020, 86, 105123.	3.8	17
25	Depth profile analyses of nc-TiC/a-C:H coating prepared by balanced magnetron sputtering. <i>Surface and Coatings Technology</i> , 2011, 205, S53-S56.	4.8	16
26	The effect of chemical composition on the structure, chemistry and mechanical properties of magnetron sputtered W-B-C coatings: Modeling and experiments. <i>Surface and Coatings Technology</i> , 2020, 383, 125274.	4.8	16
27	Electron density measurements in afterglow of high power pulsed microwave discharge. <i>Plasma Sources Science and Technology</i> , 2004, 13, 562-568.	3.1	15
28	Analysis of the Transport of Ionized Titanium Atoms in a Highly Ionized Sputter Deposition Process. <i>Plasma Processes and Polymers</i> , 2007, 4, S424-S429.	3.0	15
29	Complex analysis of SiO _x C _y H _z films deposited by an atmospheric pressure dielectric barrier discharge. <i>Surface and Coatings Technology</i> , 2011, 205, S330-S334.	4.8	15
30	Use of the Richardson extrapolation in optics of inhomogeneous layers: Application to optical characterization. <i>Surface and Interface Analysis</i> , 2018, 50, 757-765.	1.8	15
31	Study of hybrid PVD/PECVD process of Ti sputtering in argon and acetylene. <i>Surface and Coatings Technology</i> , 2011, 205, S299-S302.	4.8	14
32	Simultaneous electrical and optical study of spoke rotation, merging and splitting in HiPIMS plasma. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 015209.	2.8	14
33	Revisiting particle dynamics in HiPIMS discharges. II. Plasma pulse effects. <i>Journal of Applied Physics</i> , 2020, 128, .	2.5	14
34	Optical Characterization of Non-Stoichiometric Silicon Nitride Films Exhibiting Combined Defects. <i>Coatings</i> , 2019, 9, 416.	2.6	13
35	Study of the transition from self-organised to homogeneous plasma distribution in chromium HiPIMS discharge. <i>Journal Physics D: Applied Physics</i> , 2020, 53, 155201.	2.8	13
36	Tribological properties of nc-TiC/a-C:H coatings prepared by magnetron sputtering at low and high ion bombardment of the growing film. <i>Surface and Coatings Technology</i> , 2014, 241, 64-73.	4.8	12

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37	Titanium carbide/carbon nanocomposite hard coatings: A comparative study between various chemical analysis tools. <i>Surface and Coatings Technology</i> , 2014, 256, 41-46.	4.8	12
38	Influence of sputtered species ionisation on the hysteresis behaviour of reactive HiPIMS with oxygen admixture. <i>Plasma Sources Science and Technology</i> , 2020, 29, 025027.	3.1	12
39	Cathode voltage and discharge current oscillations in HiPIMS. <i>Plasma Sources Science and Technology</i> , 2017, 26, 055015.	3.1	11
40	Fracture Resistance Enhancement in Hard Mo-B-C Coatings Tailored by Composition and Microstructure. <i>Journal of Nanomaterials</i> , 2018, 2018, 1-7.	2.7	11
41	A transition from petal-state to lotus-state in AZ91 magnesium surface by tailoring the microstructure. <i>Surface and Coatings Technology</i> , 2020, 383, 125239.	4.8	11
42	An experimental study of high power microwave pulsed discharge in nitrogen. <i>Plasma Sources Science and Technology</i> , 2006, 15, 574-581.	3.1	10
43	Harmonic analysis of discharge voltages as a tool to control the RF sputtering deposition process. <i>Europhysics Letters</i> , 2009, 85, 15002.	2.0	10
44	Dynamics of bipolar HiPIMS discharges by plasma potential probe measurements. <i>Plasma Sources Science and Technology</i> , 2022, 31, 025007.	3.1	10
45	Modelling of the reactive sputtering process with non-uniform discharge current density and different temperature conditions. <i>Plasma Sources Science and Technology</i> , 2009, 18, 025011.	3.1	9
46	Study of the thermal dependence of mechanical properties, chemical composition and structure of nanocomposite TiC/a-C:H coatings. <i>Surface and Coatings Technology</i> , 2014, 242, 62-67.	4.8	9
47	On the effect of the substrate to target position on the properties of titanium carbide/carbon coatings. <i>Surface and Coatings Technology</i> , 2017, 328, 462-468.	4.8	9
48	Evolution of discharge parameters and sputtered species ionization in reactive HiPIMS with oxygen, nitrogen and acetylene. <i>Plasma Sources Science and Technology</i> , 2019, 28, 025011.	3.1	9
49	Enhancing mechanical properties and cutting performance of industrially sputtered AlCrN coatings by inducing cathodic arc glow discharge. <i>Surface and Coatings Technology</i> , 2021, 422, 127563.	4.8	9
50	Self-consistent spatio-temporal simulation of pulsed microwave discharge. <i>Journal Physics D: Applied Physics</i> , 2008, 41, 015210.	2.8	8
51	Visualization of Revolving Modes in RF and MW Nonthermal Atmospheric Pressure Plasma Jets. <i>IEEE Transactions on Plasma Science</i> , 2011, 39, 2350-2351.	1.3	8
52	Laser desorption ionisation quadrupole ion trap time-of-flight mass spectrometry of titanium-carbon thin films. <i>Rapid Communications in Mass Spectrometry</i> , 2013, 27, 1196-1202.	1.5	8
53	On the origin of multilayered structure of W-B-C coatings prepared by non-reactive magnetron sputtering from a single segmented target. <i>Surface and Coatings Technology</i> , 2019, 377, 124864.	4.8	8
54	Optical characterization of inhomogeneous thin films containing transition layers using the combined method of spectroscopic ellipsometry and spectroscopic reflectometry based on multiple-beam interference model. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2019, 37, .	1.2	8

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55	Study of W-B-C thin films prepared by magnetron sputtering using a combinatorial approach. International Journal of Refractory Metals and Hard Materials, 2019, 85, 105066.	3.8	8
56	Principles and practice of an automatic process control for the deposition of hard nc-TiC/a-C:H coatings by hybrid PVD-PECVD under industrial conditions. Surface and Coatings Technology, 2016, 304, 9-15.	4.8	7
57	Microstructural changes of amorphous Mo-B-C coatings upon thermal annealing. Surface and Coatings Technology, 2019, 379, 125052.	4.8	7
58	The statistics of spoke configurations in high-power impulse magnetron sputtering discharges. Journal Physics D: Applied Physics, 2019, 52, 125201.	2.8	7
59	Microstructure of titanium coatings controlled by pulse sequence in multipulse HiPIMS. Surface and Coatings Technology, 2021, 423, 127624.	4.8	7
60	Understanding of hybrid PVD-PECVD process with the aim of growing hard nc-TiC/a-C:H coatings using industrial devices with a rotating cylindrical magnetron. Surface and Coatings Technology, 2014, 255, 118-123.	4.8	6
61	Comparative analysis of thermal stability of two different nc-TiC/a-C:H coatings. Surface and Coatings Technology, 2015, 267, 32-39.	4.8	6
62	The Effect of a Taper Angle on Micro-Compression Testing of Mo-B-C Coatings. Materials, 2020, 13, 3054.	2.9	5
63	Composition, Structure and Mechanical Properties of Industrially Sputtered Ta-B-C Coatings. Coatings, 2020, 10, 853.	2.6	5
64	Plasma diagnostics using electron paramagnetic resonance. Journal Physics D: Applied Physics, 2010, 43, 124020.	2.8	4
65	Spoke behaviour in reactive HiPIMS. Plasma Sources Science and Technology, 2021, 30, 055016.	3.1	4
66	Approximate methods for the optical characterization of inhomogeneous thin films: Applications to silicon nitride films. Journal of Electrical Engineering, 2019, 70, 16-26.	0.7	4
67	W 4f electron binding energies in amorphous W-B-C systems. Applied Surface Science, 2022, 586, 152824.	6.1	4
68	Dissociation increase due to admixtures. European Physical Journal D, 2006, 56, B877-B881.	0.4	3
69	Monitoring of PVD, PECVD and etching plasmas using Fourier components of RF voltage. Plasma Physics and Controlled Fusion, 2010, 52, 124011.	2.1	3
70	Monitoring of magnetron target poisoning by measurement of higher harmonics of discharge voltages. Plasma Sources Science and Technology, 2010, 19, 055016.	3.1	3
71	On the significance of running-in of hard nc-TiC/a-C:H coating for short-term repeating machining. Surface and Coatings Technology, 2017, 315, 17-23.	4.8	3
72	Investigation of the Influence of Ni Doping on the Structure and Hardness of Ti-Ni-C Coatings. Journal of Nanomaterials, 2017, 2017, 1-13.	2.7	3

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73	Temporal studies of titanium ionised density fraction in reactive HiPIMS with nitrogen admixture. Plasma Sources Science and Technology, 0, , .	3.1	3
74	Predicting the composition of W-B-C coatings sputtered from industrial cylindrical segmented target. Surface and Coatings Technology, 2022, 438, 128411.	4.8	3
75	Single-shot spatial-resolved optical emission spectroscopy of argon and titanium species within the spoke. Journal Physics D: Applied Physics, 2022, 55, 035205.	2.8	2
76	Spatially resolved study of spokes in reactive HiPIMS discharge. Plasma Sources Science and Technology, 2022, 31, 055010.	3.1	2
77	Reprint of "Study of the thermal dependence of mechanical properties, chemical composition and structure of nanocomposite TiC/a-C:H coatings". Surface and Coatings Technology, 2014, 255, 158-163.	4.8	0
78	DYNAMIC IMPACT WEAR AND IMPACT RESISTANCE OF W-B-C COATINGS. Acta Polytechnica CTU Proceedings, 2020, 27, 37-41.	0.3	0
79	Al ₂ O ₃ -Ta ₂ O ₅ multilayer thin films deposited by pulsed direct current magnetron sputtering for dielectric applications. , 2021, , .		0
80	MAGNETRON SPUTTERING DEPOSITION OF HIGH ENTROPY NITRIDES FROM ChRromium-HaFmium-MOlybdenum-TAntalum-Wolfram SYSTEM. , 2021, , .		0
81	INDUSTRIAL MAGNETRON SPUTTERING OF ZrN/Cu NANOSTRUCTURED COATINGS FOR ANTI-BACTERIAL PURPOSES. , 2021, , .		0