

Nikolai V Gavrilov

List of Publications by Year in descending order

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111
papers

1,316
citations

394286

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501076

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111
docs citations

111
times ranked

1245
citing authors

#	ARTICLE	IF	CITATIONS
1	Investigations of Mn-Co-O and Mn-Co-Y-O coatings deposited by the magnetron sputtering on ferritic stainless steels. <i>Surface and Coatings Technology</i> , 2011, 206, 1252-1258.	2.2	57
2	Development of technological sources of gas ions on the basis of hollow-cathode glow discharges. <i>Surface and Coatings Technology</i> , 1997, 96, 81-88.	2.2	52
3	Adhesion of Polytetrafluorethylene modified by an ion beam. <i>Vacuum</i> , 1999, 52, 285-289.	1.6	52
4	Broad beam electron sources with plasma cathodes. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1992, 321, 417-428.	0.7	46
5	Structure of polyethylene after pulse ion beam treatment. <i>Journal of Applied Polymer Science</i> , 1998, 69, 1071-1077.	1.3	44
6	XPS and DFT study of pulsed Bi-implantation of bulk and thin-films of ZnO-The role of oxygen imperfections. <i>Applied Surface Science</i> , 2016, 387, 1093-1099.	3.1	41
7	Sn-loss effect in a Sn-implanted a-SiO ₂ host-matrix after thermal annealing: A combined XPS, PL, and DFT study. <i>Applied Surface Science</i> , 2016, 367, 320-326.	3.1	35
8	Effect of the electron beam and ion flux parameters on the rate of plasma nitriding of an austenitic stainless steel. <i>Technical Physics</i> , 2012, 57, 399-404.	0.2	32
9	XPS-and-DFT analyses of the Pb 4f Zn 3s and Pb 5d O 2s overlapped ambiguity contributions to the final electronic structure of bulk and thin-film Pb-modulated zincite. <i>Applied Surface Science</i> , 2017, 405, 129-136.	3.1	30
10	Ion assisted deposition of Al ₂ O ₃ coatings by anodic evaporation in the arc discharge. <i>Surface and Coatings Technology</i> , 2018, 337, 453-460.	2.2	30
11	High-current pulse sources of broad beams of gas and metal ions for surface treatment. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2000, 439, 31-44.	0.7	28
12	XPS and DFT study of Sn incorporation into ZnO and TiO ₂ host matrices by pulsed ion implantation. <i>Physica Status Solidi (B): Basic Research</i> , 2015, 252, 1890-1896.	0.7	28
13	Soft electronic structure modulation of surface (thin-film) and bulk (ceramics) morphologies of TiO ₂ -host by Pb-implantation: XPS-and-DFT characterization. <i>Applied Surface Science</i> , 2017, 400, 110-117.	3.1	28
14	The MRO-accompanied modes of Re-implantation into SiO ₂ -host matrix: XPS and DFT based scenarios. <i>Journal of Alloys and Compounds</i> , 2017, 728, 759-766.	2.8	28
15	Ion beam modification of polyethylene and adhesion to epoxy adhesive. <i>Vacuum</i> , 1996, 47, 1085-1087.	1.6	26
16	Study of the Structural Characteristics of 3d Metals Cr, Mn, Fe, Co, Ni, and Cu Implanted in ZnO and TiO ₂ Experiment and Theory. <i>Journal of Physical Chemistry C</i> , 2014, 118, 28143-28151.	1.5	26
17	Bi-doped silica glass: A combined XPS DFT study of electronic structure and pleomorphic imperfections. <i>Journal of Alloys and Compounds</i> , 2020, 829, 154459.	2.8	23
18	A source of broad electron beams with a self-heated hollow cathode for plasma nitriding of stainless steel. <i>Instruments and Experimental Techniques</i> , 2011, 54, 732-739.	0.1	21

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19	Modification of titanium and titanium dioxide surfaces by ion implantation: Combined XPS and DFT study. <i>Physica Status Solidi (B): Basic Research</i> , 2015, 252, 748-754.	0.7	20
20	Electronic structure and photoluminescence properties of Zn-ion implanted silica glass before and after thermal annealing. <i>Journal of Non-Crystalline Solids</i> , 2016, 432, 183-188.	1.5	20
21	Comparison testing of diamond-like a-C:H coatings prepared in plasma cathode-based gas discharge and ta-C coatings deposited by vacuum arc. <i>Surface and Coatings Technology</i> , 2010, 204, 4018-4024.	2.2	19
22	Octahedral conversion of a-SiO ₂ host matrix by pulsed ion implantation. <i>Physica Status Solidi (B): Basic Research</i> , 2015, 252, 2185-2190.	0.7	19
23	Irradiation effects in carbon fibers after N ⁺ -ion irradiation. <i>Surface and Coatings Technology</i> , 2007, 201, 8326-8328.	2.2	18
24	Force on a body in a continuously stratified fluid. Part 1. Circular cylinder. <i>Journal of Fluid Mechanics</i> , 2002, 451, 421-443.	1.4	17
25	Pulse and continuous ion beam treatment of polyethylene. <i>Vacuum</i> , 2002, 68, 341-347.	1.6	17
26	Low-temperature nitriding of titanium in low-energy electron beam excited plasma. <i>Technical Physics Letters</i> , 2009, 35, 713-716.	0.2	17
27	Electronic band gap reduction and intense luminescence in Co and Mn ion-implanted SiO ₂ . <i>Journal of Applied Physics</i> , 2014, 115, .	1.1	16
28	Force on a body in a continuously stratified fluid. Part 2. Sphere. <i>Journal of Fluid Mechanics</i> , 2003, 494, 33-50.	1.4	15
29	Local Structure of Fe Impurity Atoms in ZnO: Bulk versus Surface. <i>Journal of Physical Chemistry C</i> , 2014, 118, 5336-5345.	1.5	15
30	Generation of a pulsed high-current low-energy beam in a plasma electron source with a self-heated cathode. <i>Technical Physics</i> , 2016, 61, 669-675.	0.2	15
31	Low-temperature photoluminescence of ion-implanted SiO ₂ :Sn ⁺ films and glasses. <i>Journal of Surface Investigation</i> , 2012, 6, 668-672.	0.1	14
32	The formation of extraordinary magnetic states in an iron ²⁺ nickel alloy with b.c.c. ²⁺ f.c.c. transitions induced by ion irradiation. <i>Surface and Coatings Technology</i> , 1994, 64, 1-4.	2.2	13
33	On internal waves generated by large-amplitude circular and rectilinear oscillations of a circular cylinder in a uniformly stratified fluid. <i>Journal of Fluid Mechanics</i> , 2008, 613, 329-356.	1.4	13
34	Radiation annealing of AMg6, 1441, and VD1 aluminum alloy strips using a ribbon source of accelerated ions. <i>Russian Metallurgy (Metally)</i> , 2010, 2010, 207-213.	0.1	13
35	Structural defects and electronic structure of N-ion implanted TiO ₂ : Bulk versus thin film. <i>Applied Surface Science</i> , 2015, 355, 984-988.	3.1	13
36	Pleomorphic structural imperfections caused by pulsed Bi-implantation in the bulk and thin-film morphologies of TiO ₂ . <i>Applied Surface Science</i> , 2016, 379, 223-229.	3.1	13

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37	The formation of TiO ₄ tetrahedra and band gap reduction in SiO ₂ via pulsed ion implantation. Journal of Applied Physics, 2013, 113, 103704.	1.1	12
38	Intense emission from a grid-stabilized plasma cathode. Technical Physics, 2008, 53, 1308-1313.	0.2	11
39	Abnormal Domain Evolution in Lithium Niobate with Surface Layer Modified by Cu Ion Implantation. Ferroelectrics, 2010, 399, 49-57.	0.3	11
40	Formation of Self-Assembled Domain Structures in Lithium Niobate Modified by Ar Ions Implantation. Ferroelectrics, 2010, 399, 35-42.	0.3	11
41	Characterization of TiAlSiON coatings deposited by plasma enhanced magnetron sputtering: XRD, XPS, and DFT studies. Surface and Coatings Technology, 2015, 278, 87-91.	2.2	11
42	Glow-discharge-driven bucket ion source. Review of Scientific Instruments, 2004, 75, 1875-1877.	0.6	10
43	Photoemission and luminescence properties of quartz glass implanted with Cu ⁺ ions. Journal of Surface Investigation, 2008, 2, 450-453.	0.1	10
44	Formation of nanodomain structures during polarization reversal in congruent lithium niobate implanted with ar ions. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 1934-1941.	1.7	10
45	Structure of the Surface Layers of Metastable Austenitic Stainless Steel Nitrided in Electron Beam Plasma. Physics of Metals and Metallography, 2018, 119, 755-763.	0.3	10
46	Interfacial reactions in Al ₂ O ₃ /Cr ₂ O ₃ layers: Electronic structure calculations and X-ray photoelectron spectra. Thin Solid Films, 2018, 665, 6-8.	0.8	10
47	Local atomic configurations, energy structure, and optical properties of implantation defects in Gd-doped silica glass: An XPS, PL, and DFT study. Journal of Alloys and Compounds, 2019, 796, 77-85.	2.8	10
48	Al ₂ O ₃ thin films deposition by reactive evaporation of Al in anodic arc with high levels of metal ionization. Surface and Coatings Technology, 2019, 359, 117-124.	2.2	10
49	Electronic Structure and Optical Absorption in Gd-Implanted Silica Glasses. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1800522.	0.8	10
50	Formation of a TiN _x protective layer by nitrogen ion implantation into titanium. Vacuum, 1991, 42, 731-734.	1.6	9
51	The effect of additional treatment on tribological properties of amorphous carbon coatings on metals. Diamond and Related Materials, 1995, 4, 1020-1024.	1.8	9
52	Formation of Nanoscale Domain Structures and Abnormal Switching Kinetics in Lithium Niobate With Surface Layer Modified by Implantation of Copper Ions. Ferroelectrics, 2008, 374, 73-77.	0.3	9
53	Structural defects induced by Fe-ion implantation in TiO ₂ . Journal of Applied Physics, 2014, 115, .	1.1	9
54	A self-heated hollow cathode made of compacted TiN powder: the preparation method and test results. Instruments and Experimental Techniques, 2017, 60, 742-747.	0.1	9

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55	Structural and electron-optical properties of transparent nanocrystalline MgAl ₂ O ₄ spinel implanted with copper ions. Journal of Alloys and Compounds, 2020, 834, 154993.	2.8	9
56	Application of the catalytic probe method for measuring the concentration of oxygen atoms in Ar/O ₂ plasma of a low-pressure arc. Plasma Sources Science and Technology, 2021, 30, 015004.	1.3	9
57	Diamond-like a-C:H coatings deposited in a non-self-sustained discharge with plasma cathode. Technical Physics Letters, 2009, 35, 33-35.	0.2	8
58	Nitriding of stainless steel in plasma of a pulse electron beam. Technical Physics Letters, 2016, 42, 491-494.	0.2	8
59	Ion-beam induced quasi-dynamic continual disorder in Bi-implanted Hongan silica glass. Journal of Non-Crystalline Solids, 2021, 563, 120818.	1.5	8
60	Improvement of the efficiency of a glow discharge-based ion emitter with oscillating electrons. Technical Physics, 2003, 48, 1186-1191.	0.2	7
61	Plasma Cathode for a Broad-Beam Electron Accelerator. Technical Physics Letters, 2005, 31, 122.	0.2	7
62	Mixed Substitution in P-doped Anatase TiO ₂ Probed by XPS and DFT. Physica Status Solidi (B): Basic Research, 2018, 255, 1700477.	0.7	7
63	The high refractive index of Gd ₂ O ₃ thin films obtained by magnetron sputtering. Optical Materials, 2021, 120, 111382.	1.7	7
64	Extension of the gas-pressure operating range and increase in the lifetime of the plasma cathode grid of an ion source. Technical Physics, 2007, 52, 301-305.	0.2	6
65	Spectroscopic characteristics of anionic centers in $\hat{\pm}$ -Al ₂ O ₃ crystals bombarded by Cu ⁺ and Ti ⁺ ions. Journal of Applied Spectroscopy, 2008, 75, 452-455.	0.3	6
66	Pb ⁺ implanted SiO ₂ probed by soft x-ray emission and absorption spectroscopy. Journal of Non-Crystalline Solids, 2011, 357, 3381-3384.	1.5	6
67	Experimental study of the transition to high-current regime of discharge with a hollow self-heated titanium cathode in nitrogen. Technical Physics Letters, 2012, 38, 1031-1033.	0.2	6
68	Self-oscillating mode of electron beam generation in a source with a grid plasma emitter. Technical Physics, 2013, 58, 1426-1431.	0.2	6
69	Nanocomposite vacuum-Arc TiC/a-C:H coatings prepared using an additional ionization of acetylene. Physics of Metals and Metallography, 2014, 115, 723-729.	0.3	6
70	Nanocrystalline $\hat{\pm}$ -Al ₂ O ₃ coatings obtained by reactive thermal anodic evaporation in arc discharge at low temperature. Technical Physics Letters, 2017, 43, 951-954.	0.2	6
71	Induced Quasi-Dynamic Disorder in a Structure of Rhenium Ion-Implanted Quartz Glass. Physics of the Solid State, 2019, 61, 1017-1022.	0.2	6
72	Increasing the oxygen dissociation degree in the plasma of a pulse-periodic Ar/O ₂ low-pressure arc. Plasma Sources Science and Technology, 2021, 30, 095008.	1.3	6

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73	Synthesis of Lithium Phosphorus Oxynitride (LiPON) Thin Films by Li ₃ PO ₄ Anodic Evaporation in Nitrogen Plasma of a Low-Pressure Arc Discharge. <i>Membranes</i> , 2022, 12, 40.	1.4	6
74	Breakdown of a-C coatings on ion-implantation-modified metal alloys with a jet of abrasive particles. <i>Diamond and Related Materials</i> , 1994, 3, 779-782.	1.8	5
75	X-ray emission study of the electronic structure of nanocrystalline Al ₂ O ₃ . <i>Physics of the Solid State</i> , 2004, 46, 2134-2138.	0.2	5
76	Magnetron sputtering system for coatings deposition with activation of working gas mixture by low-energy high-current electron beam. <i>Journal of Physics: Conference Series</i> , 2015, 652, 012024.	0.3	5
77	Enhanced clustering tendency of Cu-impurities with a number of oxygen vacancies in heavy carbon-loaded TiO ₂ - the bulk and surface morphologies. <i>Solid State Sciences</i> , 2017, 71, 130-138.	1.5	5
78	Quasi-Dynamic Approach in Structural Disorder Analysis: An Ion-Beam-Irradiated Silica. <i>Journal of Physical Chemistry C</i> , 2019, 123, 29324-29330.	1.5	5
79	Ion-beam synthesis of copper nanoparticles in transparent ceramics of aluminum-magnesium spinel. <i>Vacuum</i> , 2020, 175, 109243.	1.6	5
80	Effect of a continuous and gas-cyclic plasma nitriding on the quality of nanostructured austenitic stainless steel. <i>Metal Working and Material Science</i> , 2017, , 55-66.	0.0	5
81	<title>Technological ion source and its applications</title>. , 1995, , .		4
82	X-ray emission and photoluminescence spectroscopy of nanostructured silica with implanted copper ions. <i>Physics of the Solid State</i> , 2008, 50, 2322-2326.	0.2	4
83	Interplay of ballistic and chemical effects in the formation of structural defects for Sn and Pb implanted silica. <i>Journal of Non-Crystalline Solids</i> , 2012, 358, 3187-3192.	1.5	4
84	On the formation of nanocomposite TiC/a-C:H coatings by the method of the magnetron sputtering of Ti in an electron-beam activated Ar/C ₂ H ₂ mixture. <i>Journal of Surface Investigation</i> , 2014, 8, 846-852.	0.1	4
85	Photoluminescence of implantation-induced defects in SiO ₂ :Pb ⁺ glasses. <i>Journal of Surface Investigation</i> , 2014, 8, 540-544.	0.1	4
86	Willemite photoluminescence in Zn-implanted silica glasses. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2015, 12, 1355-1358.	0.8	4
87	Nitriding of Stainless Steel in Electron-Beam Plasma in the Pulsed and DC Generation Modes. <i>Journal of Surface Investigation</i> , 2017, 11, 1167-1172.	0.1	4
88	Surface modification of aluminum and chromium by ion implantation of nitrogen with a high current density ion implanter and plasma-source ion implantation. <i>Journal of Materials Research</i> , 1999, 14, 4351-4357.	1.2	3
89	Structural ordering in a silica glass matrix under Mn ion implantation. <i>Journal of Physics Condensed Matter</i> , 2012, 24, 185402.	0.7	3
90	Potential of an insulated electrode in a high-energy electron flow under a gas pressure of 0.1â€“1.0 Pa. <i>Technical Physics</i> , 2013, 58, 70-75.	0.2	3

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91	Thermal regime of self-heated hollow cathode in a low-pressure high-current pulsed-periodic discharge. <i>Technical Physics</i> , 2017, 62, 1750-1754.	0.2	3
92	Investigation of striking characteristics of a pulsed low-pressure discharge in magnetic field. , 1994, , .		2
93	Carbon, Nitrogen, and Oxygen Ion Implantation of Stainless Steel. <i>Materials Research Society Symposia Proceedings</i> , 1995, 396, 661.	0.1	2
94	Characteristics of an ion source with a plasma cathode and a multipole magnetic system for confining fast electrons. <i>Technical Physics</i> , 2004, 49, 1202-1207.	0.2	2
95	Magnetic Resonance of Metallic Nanoparticles in Vitreous Silicon Dioxide Implanted with Iron Ions. <i>Physics of the Solid State</i> , 2005, 47, 674.	0.2	2
96	Ion-beam synthesis and thermal behaviour of luminescent Zn ₂ SiO ₄ nanoparticles in silica glasses and films. <i>Physica Status Solidi (B): Basic Research</i> , 2016, 253, 2180-2184.	0.7	2
97	A Gas-Ion Ribbon Beam Source with a Wide-Aperture Cold Hollow Cathode. <i>Instruments and Experimental Techniques</i> , 2003, 46, 85-90.	0.1	1
98	Repetitively pulsed CO ₂ laser driven by an electron accelerator with a gas-discharge plasma cathode. <i>Laser Physics</i> , 2006, 16, 64-78.	0.6	1
99	Internal-wave radiation and optical measurements in stratified fluids. <i>Microgravity Science and Technology</i> , 2007, 19, 144-147.	0.7	1
100	The Domain Kinetics in Congruent Lithium Niobate Modified by Low and High Energy Ion Irradiation. <i>Ferroelectrics</i> , 2012, 441, 17-24.	0.3	1
101	Formation of Mn-oxide clusters in Mn ⁺ -implanted SiO ₂ probed by soft X-ray emission and absorption spectroscopy. <i>Vacuum</i> , 2012, 86, 1615-1617.	1.6	1
102	Deposition of Gd ₂ O ₃ by Reactive Anodic Evaporation in Arc with Self-heated Hollow Cathode. , 2020, , .		1
103	Wide gas-ion beam source based on an arc discharge in a nonuniform magnetic field. <i>Russian Physics Journal</i> , 1994, 37, 255-262.	0.2	0
104	Investigation of an ion-optical system of technological ion-gas source. , 1994, , .		0
105	Cold-cathode source of ribbon gaseous ion beams. <i>Review of Scientific Instruments</i> , 2004, 75, 1872-1874.	0.6	0
106	Ion-emission properties of a plasma in a gaseous-ion source with a plasma cathode. <i>Doklady Physics</i> , 2004, 49, 19-21.	0.2	0
107	A gas-ion source with a grid-stabilized plasma cathode. <i>Instruments and Experimental Techniques</i> , 2005, 48, 234-238.	0.1	0
108	Operational characteristics of a plasma cathode with a grid stabilization in a two-stage ion source. <i>Technical Physics</i> , 2006, 51, 204-208.	0.2	0

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109	The effect of irradiation with nitrogen ions on the properties of pyrolytic graphite. Russian Journal of Non-Ferrous Metals, 2008, 49, 420-423.	0.2	0
110	Evidence of random distribution of carbon impurities in oxygen sites of zinc oxide. Physica B: Condensed Matter, 2018, 545, 172-175.	1.3	0
111	Effect of rapid thermal annealing on damage of silicon matrix implanted by low-energy rhenium ions. Journal of Alloys and Compounds, 2020, 846, 156433.	2.8	0