

# Irina Antonova

## List of Publications by Year in descending order

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137  
papers

1,175  
citations

471509

17  
h-index

580821

25  
g-index

142  
all docs

142  
docs citations

142  
times ranked

1190  
citing authors

#	ARTICLE	IF	CITATIONS
1	Graphene-based humidity sensors: the origin of alternating resistance change. Nanotechnology, 2017, 28, 355501.	2.6	61
2	Fluorinated graphene dielectric films obtained from functionalized graphene suspension: preparation and properties. Physical Chemistry Chemical Physics, 2015, 17, 13257-13266.	2.8	51
3	Charge storage, photoluminescence, and cluster statistics in ensembles of Si quantum dots. Physical Review B, 2008, 77, .	3.2	42
4	Vertical heterostructures based on graphene and other 2D materials. Semiconductors, 2016, 50, 66-82.	0.5	40
5	Nanostructuring few-layer graphene films with swift heavy ions for electronic application: tuning of electronic and transport properties. Nanoscale, 2018, 10, 14499-14509.	5.6	39
6	Colloidal solutions of niobium trisulfide and niobium triselenide. Journal of Materials Chemistry C, 2014, 2, 5479-5486.	5.5	34
7	Thin partially reduced oxide-graphene films: structural, optical, and electrical properties. Nanotechnologies in Russia, 2014, 9, 363-368.	0.7	32
8	Fluorinated graphene suspension for flexible and printed electronics: Flakes, 2D films, and heterostructures. Materials and Design, 2019, 164, 107526.	7.0	27
9	Graphene-PEDOT: PSS Humidity Sensors for High Sensitive, Low-Cost, Highly-Reliable, Flexible, and Printed Electronics. Materials, 2019, 12, 3477.	2.9	25
10	Functionalization of graphene and few-layer graphene films in an hydrofluoric acid aqueous solution. Nanotechnologies in Russia, 2014, 9, 51-59.	0.7	24
11	Chemical vapor deposition growth of graphene on copper substrates: current trends. Physics-Uspekhi, 2013, 56, 1013-1020.	2.2	23
12	Extremely high response of electrostatically exfoliated few layer graphene to ammonia adsorption. Nanotechnology, 2011, 22, 285502.	2.6	21
13	Films fabricated from partially fluorinated graphene suspension: structural, electronic properties and negative differential resistance. Nanotechnology, 2017, 28, 074001.	2.6	21
14	Negative differential resistance in partially fluorinated graphene films. Applied Physics Letters, 2017, 111, .	3.3	21
15	2D printed graphene conductive layers with high carrier mobility. Current Applied Physics, 2017, 17, 1655-1661.	2.4	19
16	Two-layer and composite films based on oxidized and fluorinated graphene. Physical Chemistry Chemical Physics, 2017, 19, 19010-19020.	2.8	19
17	Electrical properties and photoluminescence of SiOx layers with Si nanocrystals in relation to the SiOx composition. Semiconductors, 2006, 40, 1198-1203.	0.5	17
18	Fluorinated graphene suspension for inkjet printed technologies. Nanotechnology, 2016, 27, 205601.	2.6	17

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19	Swift heavy-ion irradiation of graphene oxide: Localized reduction and formation of sp-hybridized carbon chains. Carbon, 2019, 141, 390-399.	10.3	17
20	Self-organized arrays of graphene and few-layer graphene quantum dots in fluorographene matrix: Charge transient spectroscopy. Applied Physics Letters, 2014, 104, 193108.	3.3	16
21	Resistive switching effect and traps in partially fluorinated graphene films. Journal Physics D: Applied Physics, 2016, 49, 095303.	2.8	16
22	Low-dimensional effects in a three-dimensional system of Si quantum dots modified by high-energy ion irradiation. Nanotechnology, 2009, 20, 185401.	2.6	15
23	Comparison of various methods for transferring graphene and few layer graphene grown by chemical vapor deposition to an insulating SiO <sub>2</sub> /Si substrate. Semiconductors, 2014, 48, 804-808.	0.5	15
24	Graphene suspensions for 2D printing. Technical Physics Letters, 2016, 42, 438-441.	0.7	15
25	2D printing technologies using graphene-based materials. Physics-Uspekhi, 2017, 60, 204-218.	2.2	15
26	Resistive switching effects in fluorinated graphene films with graphene quantum dots enhanced by polyvinyl alcohol. Nanotechnology, 2019, 30, 255701.	2.6	14
27	Luminescence Properties of Oxygen-Containing Silicon Annealed at Enhanced Argon Pressure. Physica Status Solidi (B): Basic Research, 1999, 211, 233-238.	1.5	13
28	Traps at the bonded interface in silicon-on-insulator structures. Applied Physics Letters, 2001, 79, 4539-4540.	3.3	13
29	Charge spectroscopy of Si nanocrystallites embedded in a SiO <sub>2</sub> matrix. Journal of Applied Physics, 2009, 106, .	2.5	13
30	Tunable properties of few-layer graphene- <i>N</i> -methylpyrrolidone hybrid structures. Nanotechnology, 2012, 23, 315601.	2.6	13
31	High carrier mobility in chemically modified graphene on an atomically flat high-resistive substrate. Journal Physics D: Applied Physics, 2013, 46, 285303.	2.8	13
32	The modification of Si nanocrystallites embedded in a dielectric matrix by high energy ion irradiation. Nanotechnology, 2009, 20, 095205.	2.6	12
33	Charge deep-level transient spectroscopy of SiO <sub>2</sub> and Al <sub>2</sub> O <sub>3</sub> layers with embedded Ge nanocrystals. Journal of Applied Physics, 2013, 113, .	2.5	12
34	Fluorinated graphene films with graphene quantum dots for electronic applications. Journal of Applied Physics, 2016, 119, .	2.5	12
35	Graphene Antenna on a Biodegradable Substrate for Frequency Range of Cellular Operators. , 2018, , .		11
36	Study of the conversion of the VO to the VO <sub>2</sub> defect in silicon heat-treated under uniform stress conditions. Journal of Applied Physics, 2002, 91, 1198-1203.	2.5	10

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37	Electrical passivation of Si <sup>+</sup> •SiGe <sup>+</sup> •Si structures by 1-octadecene monolayers. Applied Physics Letters, 2007, 91, .	3.3	10
38	Raman characterization of hydrogen ion implanted silicon: “High-dose effect”. Physica B: Condensed Matter, 2008, 403, 3424-3428.	2.7	10
39	Graphene Flakes for Electronic Applications: DC Plasma Jet-Assisted Synthesis. Nanomaterials, 2020, 10, 2050.	4.1	10
40	Dependence of photoluminescence of silicon on conditions of pressure-annealing. Journal of Alloys and Compounds, 1999, 286, 258-264.	5.5	9
41	Electrical conductivity of silicon-on-insulator structures prepared by bonding silicon wafers to a substrate using hydrogen implantation. Semiconductors, 2000, 34, 1054-1057.	0.5	9
42	X-ray and infrared spectroscopy of layers produced by cosputtering of spatially separated SiO <sub>2</sub> and Si sources. Semiconductors, 2010, 44, 531-536.	0.5	9
43	Growth of Bi <sub>2</sub> Se <sub>3</sub> /graphene heterostructures with the room temperature high carrier mobility. Journal of Materials Science, 2021, 56, 9330-9343.	3.7	9
44	Thermal acceptors in irradiated silicon. Semiconductors, 2000, 34, 155-160.	0.5	8
45	Electrical properties of multiple-layer structures formed by implantation of nitrogen or oxygen and annealed under high pressure. Journal of Applied Physics, 2006, 99, 033506.	2.5	8
46	Electrical passivation of the silicon surface by organic monolayers of 1-octadecene. Semiconductors, 2007, 41, 991-997.	0.5	8
47	Deep levels and electron transport in AlGaN/GaN heterostructures. Semiconductors, 2008, 42, 52-58.	0.5	8
48	Graphene-oxide films printed on rigid and flexible substrates for a wide spectrum of applications. Semiconductors, 2016, 50, 1065-1073.	0.5	8
49	Fluorinated graphene nanoparticles with 1–3 nm electrically active graphene quantum dots. Nanotechnology, 2020, 31, 295602.	2.6	8
50	The charge accumulation in an insulator and the states at interfaces of silicon-on-insulator structures as a result of irradiation with electrons and gamma-ray photons. Semiconductors, 2003, 37, 426-432.	0.5	7
51	Enhanced formation of Ge nanocrystals in Ge <sup>+</sup> •SiO <sub>2</sub> layers by swift heavy ions. Journal Physics D: Applied Physics, 2012, 45, 285302.	2.8	7
52	Resistive Switching Effect with ON/OFF Current Relation up to 10 <sup>9</sup> in 2D Printed Composite Films of Fluorinated Graphene with V <sub>2</sub> O <sub>5</sub> Nanoparticles. Advanced Electronic Materials, 2019, 5, 1900310.	5.1	7
53	Electrochemically exfoliated thin Bi <sub>2</sub> Se <sub>3</sub> films and van der Waals heterostructures Bi <sub>2</sub> Se <sub>3</sub> /graphene. Nanotechnology, 2020, 31, 125602.	2.6	7
54	Flexibility of Fluorinated Graphene-Based Materials. Materials, 2020, 13, 1032.	2.9	7

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55	Resistive switching on individual V <sub>2</sub> O <sub>5</sub> nanoparticles encapsulated in fluorinated graphene films. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 20434-20443.	2.8	7
56	Graphene: Hexagonal Boron Nitride Composite Films with Low-Resistance for Flexible Electronics. <i>Nanomaterials</i> , 2022, 12, 1703.	4.1	7
57	Characterization of Silicon-on-Insulator Structures by High-Resolution X-Ray Diffraction. <i>Journal of the Electrochemical Society</i> , 2002, 149, G490.	2.9	6
58	Modification of the bonded interface in silicon-on-insulator structures under thermal treatment in hydrogen ambient. <i>Journal of Applied Physics</i> , 2003, 93, 426-431.	2.5	6
59	Production and evolution of defects in neutron-irradiated Si subjected to thermal pre-treatments under hydrostatic pressure. <i>Journal of Physics Condensed Matter</i> , 2005, 17, S2341-S2349.	1.8	6
60	Transformation of electrically active defects as a result of annealing of silicon implanted with high-energy ions. <i>Semiconductors</i> , 2006, 40, 543-548.	0.5	6
61	Micro-characterisation of Si wafers by high-pressure thermopower technique. <i>Physica B: Condensed Matter</i> , 2006, 376-377, 177-180.	2.7	6
62	Effect of hydrogen implantation on semiconductorâ€metal transition and high-pressure thermopower in Si. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007, 462, 343-346.	5.6	6
63	Ordered arrays of Si nanocrystals in SiO <sub>2</sub> : Structural, optical, and electronic properties. <i>Semiconductors</i> , 2010, 44, 482-487.	0.5	6
64	Novel Graphene-Based Hybrid Material with Tunable Electronic Properties. <i>Fullerenes Nanotubes and Carbon Nanostructures</i> , 2012, 20, 543-547.	2.1	6
65	Luminescence and deep-level transient spectroscopy of grown dislocation-rich Si layers. <i>AIP Advances</i> , 2012, 2, 032152.	1.3	6
66	Light-assisted recharging of graphene quantum dots in fluorographene matrix. <i>Journal of Applied Physics</i> , 2014, 116, 134310.	2.5	6
67	Origin of hole and electron traps in graphene oxide. <i>Materials Research Express</i> , 2016, 3, 066301.	1.6	6
68	Mildly oxidized graphene oxide suspension for printing technologies. <i>Materials Research Express</i> , 2018, 5, 065608.	1.6	6
69	Electrical Properties of Textiles Treated with Graphene Oxide Suspension. <i>Materials</i> , 2021, 14, 1999.	2.9	6
70	Straintronics of 2D inorganic materials for electronic and optical applications. <i>Physics-Uspexhi</i> , 2022, 65, 567-596.	2.2	6
71	New graphene derivative with <i>N</i> -methylpyrrolidone: suspension, structural, optical and electrical properties. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 12494-12504.	2.8	5
72	Study of the Properties of Two-Dimensional MoS <sub>2</sub> and WS <sub>2</sub> Films Synthesized by Chemical-Vapor Deposition. <i>Semiconductors</i> , 2020, 54, 454-464.	0.5	5

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73	Graphene/Hexagonal Boron Nitride Composite Nanoparticles for 2D Printing Technologies. Advanced Engineering Materials, 2022, 24, 2100917.	3.5	5
74	Structural and Electrical Properties of Silicon on Isolator Structures Manufactured on FZ- and CZ-Silicon by Smart-Cut Technology. , 2000, , 47-54.		5
75	Formation of oxygen precipitates in silicon. Semiconductors, 1997, 31, 852-856.	0.5	4
76	Thermal Donor and Oxygen Precipitate Formation in Silicon during 450Â°C Treatments under Atmospheric and Enhanced Pressure. Journal of the Electrochemical Society, 1999, 146, 1575-1578.	2.9	4
77	Defects in silicon heat-treated under uniform stress and irradiated with fast neutrons. Physica Status Solidi A, 2003, 199, 207-213.	1.7	4
78	Silicon-on-insulator nanotransistors: Prospects and problems of fabrication. Semiconductors, 2003, 37, 1222-1228.	0.5	4
79	Thermoelectric properties of hydrogen ion-irradiated silicon crystals under ultrahigh pressures of up to 20 GPa. Physics of the Solid State, 2006, 48, 47-50.	0.6	4
80	Charge spectroscopy of SiO <sub>2</sub> layers with embedded silicon nanocrystals modified by irradiation with high-energy ions. Semiconductors, 2011, 45, 582-586.	0.5	4
81	Layered structures based on hydrogenated graphene with high carrier mobility. Nanotechnologies in Russia, 2013, 8, 621-626.	0.7	4
82	Modulation of current in self-forming lateral graphene-based heterostructures. Technical Physics Letters, 2015, 41, 950-953.	0.7	4
83	Nanostructuring of CVD graphene by high-energy heavy ions. Diamond and Related Materials, 2022, 123, 108880.	3.9	4
84	Pressure-induced formation of thermal donor centers in silicon after oxygen ion bombardment. Semiconductors, 1999, 33, 1049-1053.	0.5	3
85	Infrared and Photoluminescence Studies on Silicon Oxide Formation in Oxygen-Implanted Silicon Annealed Under Enhanced Pressure. Crystal Research and Technology, 2001, 36, 943-952.	1.3	3
86	Porous-like silicon prepared from Si:H annealed at high argon pressure. Physica Status Solidi A, 2003, 197, 236-240.	1.7	3
87	Formation of electrically active centers in silicon irradiated with electrons and then annealed at temperatures of 400â€“700Â°C. Semiconductors, 2004, 38, 758-762.	0.5	3
88	Effect of interface states on population of quantum wells in SiGe/Si structures. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 1924-1928.	0.8	3
89	Porous-like structures prepared by temperature-pressure treatment of heavily hydrogenated silicon. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 3329-3333.	0.8	3
90	Deep levels, transport and THz emission properties of SiGe/Si quantum-well structures. Science in China Series D: Earth Sciences, 2009, 52, 6-9.	0.9	3

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91	High carrier mobility in quasi-suspended few-layer graphene on printed graphene oxide layers. Journal of Materials Science, 2017, 52, 10230-10236.	3.7	3
92	Mechanism of resistive switching in films based on partially fluorinated graphene. Semiconductors, 2017, 51, 1306-1312.	0.5	3
93	Fluorinated Graphene Dielectric and Functional Layers for Electronic Applications. , 0, , .		3
94	Robust electrical current modulation in functionalized graphene channels. Journal of Materials Science: Materials in Electronics, 2021, 32, 1641-1649.	2.2	3
95	Interface states and deep-level centers in silicon-on-insulator structures. Semiconductors, 2001, 35, 912-917.	0.5	2
96	Electrical properties of Si:H/p-Si structures fabricated by hydrogen implantation. Semiconductors, 2003, 37, 92-96.	0.5	2
97	Charge spectroscopy of Si nanocrystals in a SiO <sub>2</sub> matrix. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 2704-2706.	0.8	2
98	Deep-level spectroscopy studies of confinement levels in SiGe quantum wells. Journal of Applied Physics, 2009, 106, 084903.	2.5	2
99	Optical and electronic properties of the partially fluorinated graphene suspensions and films. Journal of Materials Science, 2017, 52, 10993-11003.	3.7	2
100	Comparison of flash-memory elements using materials based on graphene. Technical Physics Letters, 2017, 43, 889-892.	0.7	2
101	10.1007/s11453-008-1007-z. , 2010, 42, 52.		2
102	Screen-Printed Structures from a Highly Conductive Mildly Oxidized Graphene Suspension for Flexible Electronics. Materials, 2022, 15, 1256.	2.9	2
103	Transformation of radiation defect clusters in B <sup>+</sup> ion-implanted silicon. Physica Status Solidi A, 1996, 153, 329-336.	1.7	1
104	Noncrucial Role of the Defects in the Splitting for Hydrogen Implanted Silicon With High Boron Concentration. Materials Research Society Symposia Proceedings, 1998, 540, 109.	0.1	1
105	<title>Effect of stress on defect transformation in hydrogen-implanted silicon and SOI structures</title>. , 2001, 4412, 120.		1
106	Transformation of interface states in silicon-on-insulator structures under annealing in hydrogen atmosphere. Semiconductors, 2002, 36, 60-64.	0.5	1
107	X-ray-emission study of the structure of Si:H layers formed by low-energy hydrogen-ion implantation. Semiconductors, 2002, 36, 568-573.	0.5	1
108	Behavior of charge in a buried insulator of silicon-on-insulator structures subjected to electric fields. Semiconductors, 2002, 36, 800-804.	0.5	1

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109	DeleCut: Producing High-Quality SOI Structures by Hydrogen Ion Implantation. Russian Microelectronics, 2002, 31, 232-237.	0.5	1
110	FIELD EFFECT NANOTRANSISTOR ON ULTRATHIN SILICON-ON-INSULATOR. International Journal of Nanoscience, 2004, 03, 155-160.	0.7	1
111	Traps with near-midgap energies at the bonded Si/SiO <sub>2</sub> interface in silicon-on-insulator structures. Semiconductors, 2004, 38, 1394-1399.	0.5	1
112	Capacitance study of selectively doped SiGe/Si heterostructures. Semiconductor Science and Technology, 2005, 20, 335-339.	2.0	1
113	Study of defects in the near-surface layer created in silicon by H <sub>2</sub> <sup>+</sup> or He <sup>+</sup> implantation. Vacuum, 2007, 81, 1047-1050.	3.5	1
114	Pressure related defect engineering in silicon-on-insulator-like structures produced by either oxygen or nitrogen ion implantation. Physica Status Solidi (B): Basic Research, 2007, 244, 443-447.	1.5	1
115	Buried porous SiN <sub>x</sub> layer in nitrogen-implanted silicon. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 1580-1583.	0.8	1
116	Confinement levels in SiGe quantum wells studied by charge spectroscopy. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 2707-2709.	0.8	1
117	Producing arrays of graphene and few-layer graphene quantum dots in a fluorographene matrix. Optoelectronics, Instrumentation and Data Processing, 2014, 50, 298-303.	0.6	1
118	Stability of graphene suspensions in an aqueous based multi-component medium. Advanced Materials Letters, 2018, 9, 211-215.	0.6	1
119	Low Dimension Properties of Nanostructures on Ultrathin Layers of Silicon Formed by Oxidation of Ion Cut SOI Wafers and Electron Lithography. , 2002, , 87-91.		1
120	Formation of shallow donors and acceptors in silicon irradiated with either electrons or high-energy ions and annealed at temperatures of 400-700 Å°C. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 690-693.	0.8	0
121	Relaxation of a defect subsystem in silicon irradiated with high-energy heavy ions. Semiconductors, 2003, 37, 546-550.	0.5	0
122	Charge fluctuations at the bonding interface in the silicon-on-insulator structures. Semiconductors, 2003, 37, 1303-1307.	0.5	0
123	Comparison of Electrical Properties of Silicon-on-Insulator Structures Fabricated with Use of Hydrogen Slicing and BESOI. Electrochemical and Solid-State Letters, 2004, 7, F21.	2.2	0
124	<title>FET on ultrathin SOI (fabrication and research)</title>. , 2004, , .		0
125	Unusual properties of C-T characteristics of hydrogen implanted and annealed Si. EPJ Applied Physics, 2004, 27, 141-144.	0.7	0
126	Stabilization of Charge at the Interface Between the Buried Insulator and Silicon in Silicon-on-Insulator Structures. Semiconductors, 2005, 39, 1153.	0.5	0



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127	Charge and electron transport in oxide with silicon nanocrystals in comparison with photoluminescence. , 2006, , .		0
128	Modification of photoluminescence and charge in oxide with silicon nanocrystals by high energy ion implantation. , 2006, , .		0
129	Graphene-N-methylpyrrolidone based hybrid material: Tunable structural and electrical properties. , 2011, , .		0
130	Hydrofluoric acid modifications of graphene films. , 2011, , .		0
131	Resonant tunneling in Si/SiGe/Si structures with a single quantum well under surface passivation. Journal of Applied Physics, 2011, 110, 123710.	2.5	0
132	Substrates and coating for graphene based devices. , 2015, , .		0
133	Fluorinated graphene suspension: Creation, properties, and perspective of applications. AIP Conference Proceedings, 2018, , .	0.4	0
134	Composite Nanoparticles Based on h-BN and Graphene for 2D Printing. , 2021, , .		0
135	NANOSTRUCTURE OF NITROGEN-IMPLANTED SILICON ANNEALED AT ENHANCED PRESSURE. , 2009, , .		0
136	Si Nanocrystal Arrays Created in SiO <sub>2</sub> Matrix by High-Energy Ion Bombardment. , 0, , .		0
137	Memristive FGâ€PVA Structures Fabricated with the Use of High Energy Xe Ion Irradiation. Materials, 2022, 15, 2085.	2.9	0