

Valentyn S Volkov

List of Publications by Year in descending order

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133
papers

6,330
citations

109264

35
h-index

66879

78
g-index

137
all docs

137
docs citations

137
times ranked

5121
citing authors

#	ARTICLE	IF	CITATIONS
1	Channel plasmon subwavelength waveguide components including interferometers and ring resonators. <i>Nature</i> , 2006, 440, 508-511.	13.7	2,058
2	Channel Plasmon-Polariton Guiding by Subwavelength Metal Grooves. <i>Physical Review Letters</i> , 2005, 95, 046802.	2.9	589
3	Optical constants and structural properties of thin gold films. <i>Optics Express</i> , 2017, 25, 25574.	1.7	265
4	Triangular metal wedges for subwavelength plasmon-polariton guiding at telecom wavelengths. <i>Optics Express</i> , 2008, 16, 5252.	1.7	182
5	Thermo-optic control of dielectric-loaded plasmonic waveguide components. <i>Optics Express</i> , 2010, 18, 1207.	1.7	169
6	Wavelength Selective Nanophotonic Components Utilizing Channel Plasmon Polaritons. <i>Nano Letters</i> , 2007, 7, 880-884.	4.5	168
7	Giant optical anisotropy in transition metal dichalcogenides for next-generation photonics. <i>Nature Communications</i> , 2021, 12, 854.	5.8	154
8	Highly Sensitive and Selective Sensor Chips with Graphene-Oxide Linking Layer. <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 21727-21734.	4.0	140
9	Nanofocusing with Channel Plasmon Polaritons. <i>Nano Letters</i> , 2009, 9, 1278-1282.	4.5	136
10	Broadband optical properties of monolayer and bulk MoS ₂ . <i>Npj 2D Materials and Applications</i> , 2020, 4, .	3.9	112
11	Localization and Waveguiding of Surface Plasmon Polaritons in Random Nanostructures. <i>Physical Review Letters</i> , 2002, 89, 186801.	2.9	89
12	Ultralow-Loss CMOS Copper Plasmonic Waveguides. <i>Nano Letters</i> , 2016, 16, 362-366.	4.5	82
13	Near-field imaging of light propagation in photonic crystal waveguides: Explicit role of Bloch harmonics. <i>Physical Review B</i> , 2002, 66, .	1.1	73
14	Bend loss in surface plasmon polariton band-gap structures. <i>Applied Physics Letters</i> , 2001, 79, 1076-1078.	1.5	71
15	Long-range dielectric-loaded surface plasmon polariton waveguides operating at telecommunication wavelengths. <i>Optics Letters</i> , 2011, 36, 4278.	1.7	68
16	Analytical approximations for the dispersion of electromagnetic modes in slabs of biaxial crystals. <i>Physical Review B</i> , 2019, 100, .	1.1	67
17	Boosting Local Field Enhancement by on-Chip Nanofocusing and Impedance-Matched Plasmonic Antennas. <i>Nano Letters</i> , 2015, 15, 8148-8154.	4.5	65
18	Superior Sensitivity of Copper-Based Plasmonic Biosensors. <i>Langmuir</i> , 2018, 34, 4681-4687.	1.6	60

#	ARTICLE	IF	CITATIONS
19	Dielectric-loaded plasmonic waveguide components: Going practical. <i>Laser and Photonics Reviews</i> , 2013, 7, 938-951.	4.4	58
20	Enabling propagation of anisotropic polaritons along forbidden directions via a topological transition. <i>Science Advances</i> , 2021, 7, .	4.7	53
21	Fiber-coupled dielectric-loaded plasmonic waveguides. <i>Optics Express</i> , 2010, 18, 5314.	1.7	52
22	Spectral ellipsometry of monolayer transition metal dichalcogenides: Analysis of excitonic peaks in dispersion. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2020, 38, .	0.6	51
23	Magnetic Octupole Response of Dielectric Quadrumers. <i>Laser and Photonics Reviews</i> , 2020, 14, 1900331.	4.4	51
24	Compact gradual bends for channel plasmon polaritons. <i>Optics Express</i> , 2006, 14, 4494.	1.7	48
25	Planar refraction and lensing of highly confined polaritons in anisotropic media. <i>Nature Communications</i> , 2021, 12, 4325.	5.8	48
26	Computational Lens for the Near Field. <i>Physical Review Letters</i> , 2004, 92, 163903.	2.9	46
27	Direct Characterization of Plasmonic Slot Waveguides and Nanocouplers. <i>Nano Letters</i> , 2014, 14, 3925-3929.	4.5	46
28	Ultrathin and Ultrasmooth Gold Films on Monolayer MoS ₂ . <i>Advanced Materials Interfaces</i> , 2019, 6, 1900196.	1.9	45
29	Plasmonic metasurfaces for waveguiding and field enhancement. <i>Laser and Photonics Reviews</i> , 2009, 3, 575-590.	4.4	43
30	Topological phase singularities in atomically thin high-refractive-index materials. <i>Nature Communications</i> , 2022, 13, 2049.	5.8	43
31	Bianisotropy for light trapping in all-dielectric metasurfaces. <i>Physical Review B</i> , 2020, 101, .	1.1	42
32	Diffusion Limited Current Density: A Watershed in Electrodeposition of Lithium Metal Anode. <i>Advanced Energy Materials</i> , 2022, 12, .	10.2	42
33	Bend loss for channel plasmon polaritons. <i>Applied Physics Letters</i> , 2006, 89, 143108.	1.5	40
34	Express determination of thickness and dielectric function of single-walled carbon nanotube films. <i>Applied Physics Letters</i> , 2020, 116, .	1.5	40
35	Directly grown crystalline gallium phosphide on sapphire for nonlinear all-dielectric nanophotonics. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	37
36	Active Tuning of Highly Anisotropic Phonon Polaritons in Van der Waals Crystal Slabs by Gated Graphene. <i>ACS Photonics</i> , 2022, 9, 383-390.	3.2	37

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37	Focusing of in-plane hyperbolic polaritons in van der Waals crystals with tailored infrared nanoantennas. <i>Science Advances</i> , 2021, 7, eabj0127.	4.7	36
38	Channel plasmon polariton propagation in nanoimprinted V-groove waveguides. <i>Optics Letters</i> , 2008, 33, 2800.	1.7	34
39	Synthesis of Large Area Two-Dimensional MoS ₂ Films by Sulfurization of Atomic Layer Deposited MoO ₃ Thin Film for Nanoelectronic Applications. <i>ACS Applied Nano Materials</i> , 2019, 2, 7521-7531.	2.4	34
40	Multiple-scattering dipole approach to modeling of surface plasmon polariton band gap structures. <i>Optics Communications</i> , 2001, 198, 241-245.	1.0	33
41	Channelling surface plasmons. <i>Applied Physics A: Materials Science and Processing</i> , 2007, 89, 225-231.	1.1	30
42	Nonlinear Exciton-Mie Coupling in Transition Metal Dichalcogenide Nanoresonators. <i>Laser and Photonics Reviews</i> , 2022, 16, .	4.4	29
43	Observation of propagation of surface plasmon polaritons along line defects in a periodically corrugated metal surface. <i>Optics Letters</i> , 2001, 26, 734.	1.7	28
44	Optical Constants of Chemical Vapor Deposited Graphene for Photonic Applications. <i>Nanomaterials</i> , 2021, 11, 1230.	1.9	26
45	Direct mapping of light propagation in photonic crystal waveguides. <i>Optics Communications</i> , 2002, 212, 51-55.	1.0	25
46	Fractal Shaped Periodic Metal Nanostructures Atop Dielectric-Metal Substrates for SERS Applications. <i>ACS Photonics</i> , 2020, 7, 1708-1715.	3.2	25
47	Vertically Coupled Plasmonic Racetrack Ring Resonator for Biosensor Applications. <i>Sensors</i> , 2020, 20, 203.	2.1	23
48	Plasmonic nanojet: an experimental demonstration. <i>Optics Letters</i> , 2020, 45, 3244.	1.7	23
49	Microextrusion printing of gas-sensitive planar anisotropic NiO nanostructures and their surface modification in an H ₂ S atmosphere. <i>Applied Surface Science</i> , 2022, 578, 151984.	3.1	23
50	Near-field imaging of organic nanofibres. <i>Journal of Microscopy</i> , 2004, 215, 241-244.	0.8	21
51	Near-field characterization of low-loss photonic crystal waveguides. <i>Physical Review B</i> , 2005, 72, .	1.1	21
52	Directional coupling in channel plasmon-polariton waveguides. <i>Optics Express</i> , 2012, 20, 6124.	1.7	21
53	Direct Observation of Surface Mode Excitation and Slow Light Coupling in Photonic Crystal Waveguides. <i>Nano Letters</i> , 2007, 7, 2341-2345.	4.5	19
54	Dispersion of strongly confined channel plasmon polariton modes. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2011, 28, 1596.	0.9	19

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55	Gas-Aggregated Copper Nanoparticles with Long-term Plasmon Resonance Stability. <i>Plasmonics</i> , 2021, 16, 333-340.	1.8	19
56	Experimental studies of surface plasmon polariton band gap effect. <i>Journal of Microscopy</i> , 2003, 210, 324-329.	0.8	18
57	Optical constant of thin gold films: Structural morphology determined optical response. <i>AIP Conference Proceedings</i> , 2017, , .	0.3	17
58	Surface-Enhanced Raman Spectroscopy on Hybrid Graphene/Gold Substrates near the Percolation Threshold. <i>Nanomaterials</i> , 2020, 10, 164.	1.9	17
59	Optical Constants and Structural Properties of Epitaxial MoS ₂ Monolayers. <i>Nanomaterials</i> , 2021, 11, 1411.	1.9	17
60	Graphene-Supported Thin Metal Films for Nanophotonics and Optoelectronics. <i>Nanomaterials</i> , 2018, 8, 1058.	1.9	16
61	Development of ultra-sensitive broadband photodetector: a detailed study on hidden photodetection-properties of TiS ₂ nanosheets. <i>Journal of Materials Research and Technology</i> , 2021, 14, 1243-1254.	2.6	16
62	Thickness-Dependent Structural and Electrical Properties of WS ₂ Nanosheets Obtained via the ALD-Grown WO ₃ Sulfurization Technique as a Channel Material for Field-Effect Transistors. <i>ACS Omega</i> , 2021, 6, 34429-34437.	1.6	16
63	Plasmonic candle: towards efficient nanofocusing with channel plasmon polaritons. <i>New Journal of Physics</i> , 2009, 11, 113043.	1.2	15
64	Densification of single-walled carbon nanotube films: Mesoscopic distinct element method simulations and experimental validation. <i>Journal of Applied Physics</i> , 2020, 128, .	1.1	15
65	Broadband Optical Properties of Atomically Thin PtS ₂ and PtSe ₂ . <i>Nanomaterials</i> , 2021, 11, 3269.	1.9	13
66	Experimental verification of a plasmonic hook in a dielectric Janus particle. <i>Applied Physics Letters</i> , 2021, 118, 131107.	1.5	12
67	Nanofocusing of acoustic graphene plasmon polaritons for enhancing mid-infrared molecular fingerprints. <i>Nanophotonics</i> , 2020, 9, 2089-2095.	2.9	12
68	Quasitrapped modes in metasurfaces of anisotropic MoS_2 nanoparticles for absorption and polarization control in the telecom wavelength range. <i>Physical Review B</i> , 2022, 106, .	1.1	12
69	Surface plasmon polariton propagation along a 90° bent line defect in a periodically corrugated metal surface. <i>Optics Communications</i> , 2001, 196, 41-45.	1.0	11
70	Nonlinear plasmonic switching in graphene-based stub nanoresonator loaded with core-shell nanowire. <i>Applied Surface Science</i> , 2020, 506, 144814.	3.1	11
71	Investigation of structural and optical properties of MAPbBr ₃ monocrystals under fast electron irradiation. <i>Journal of Materials Chemistry C</i> , 2022, 10, 5821-5828.	2.7	11
72	Broadband Optical Constants and Nonlinear Properties of SnS ₂ and SnSe ₂ . <i>Nanomaterials</i> , 2022, 12, 141.	1.9	11

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73	Near-field mapping of surface refractive-index distributions. <i>Laser Physics Letters</i> , 2005, 2, 440-444.	0.6	10
74	Application of Pulsed Laser Deposition in the Preparation of a Promising MoS _x /WSe ₂ /C(θ') Photocathode for Photo-Assisted Electrochemical Hydrogen Evolution. <i>Nanomaterials</i> , 2021, 11, 1461.	1.9	10
75	Detection of Hypertension-Induced Changes in Erythrocytes by SERS Nanosensors. <i>Biosensors</i> , 2022, 12, 32.	2.3	10
76	Two Birds with One Stone: Using Indium Oxide Surficial Modification to Tune Inner Helmholtz Plane and Regulate Nucleation for Dendrite-free Lithium Anode. <i>Small Methods</i> , 2022, 6, e2200113.	4.6	10
77	Nanofocusing in circular sector-like nanoantennas. <i>Optics Express</i> , 2014, 22, 10341.	1.7	9
78	Surface plasmon polariton waveguiding in random surface nanostructures. <i>Journal of Microscopy</i> , 2003, 209, 209-213.	0.8	8
79	Near-field characterization of planar photonic-crystal-waveguide structures. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2004, 362, 757-769.	1.6	8
80	Directional coupling in long-range dielectric-loaded plasmonic waveguides. <i>Optics Express</i> , 2013, 21, 8799.	1.7	8
81	Hybrid Schemes for Excitation of Collective Resonances with Surface Plasmon Polaritons in Arrays of Quantum Dots in the Proximity of Graphene. <i>Laser and Photonics Reviews</i> , 2020, 14, 2000237.	4.4	8
82	Silicone Composites with CNT/Graphene Hybrid Fillers: A Review. <i>Materials</i> , 2021, 14, 2418.	1.3	8
83	Hybrid Metal-Dielectric-Metal Sandwiches for SERS Applications. <i>Nanomaterials</i> , 2021, 11, 3205.	1.9	8
84	Synthesis of highly sensitive nanomaterial for ultra-fast photocatalytic activity: A detailed study on photocatalytic capabilities of rod-shaped TiS ₃ nanostructures. <i>Catalysis Communications</i> , 2022, 162, 106381.	1.6	8
85	Near-field imaging of light diffraction out of slab waveguides. <i>Laser Physics Letters</i> , 2004, 1, 311-316.	0.6	7
86	Novel graphene-oxide-coated SPR interfaces for biosensing applications. <i>AIP Conference Proceedings</i> , 2017, , .	0.3	7
87	Hybrid graphene-nanometallic structures. <i>Journal of Physics: Conference Series</i> , 2018, 1092, 012161.	0.3	7
88	All-Plasmonic Switching Effect in the Graphene Nanostructures Containing Quantum Emitters. <i>Nanomaterials</i> , 2020, 10, 122.	1.9	7
89	Halloysite Nanotubes with Immobilized Plasmonic Nanoparticles for Biophotonic Applications. <i>Applied Sciences (Switzerland)</i> , 2021, 11, 4565.	1.3	7
90	Peculiarities and evolution of Raman spectra of multilayer Ge/Si(001) heterostructures containing arrays of low-temperature MBE-grown Ge quantum dots of different size and number density: Experimental studies and numerical simulations. <i>Journal of Raman Spectroscopy</i> , 2022, 53, 853-862.	1.2	7

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91	Nanoscale Gallium Phosphide Epilayers on Sapphire for Low-Loss Visible Nanophotonics. ACS Applied Nano Materials, 2022, 5, 8846-8858.	2.4	7
92	Biocompatible, Electroconductive, and Highly Stretchable Hybrid Silicone Composites Based on Few-Layer Graphene and CNTs. Nanomaterials, 2021, 11, 1143.	1.9	6
93	Local excitation of surface plasmon polaritons in random surface nanostructures. Optics Communications, 2003, 223, 25-29.	1.0	5
94	Near-field probing of photonic crystal directional couplers. Laser Physics Letters, 2006, 3, 288-292.	0.6	5
95	Morphology and effective dielectric functions of ultra-thin gold films. Journal of Physics: Conference Series, 2018, 1092, 012167.	0.3	5
96	Controllable Excitation of Surface Plasmon Polaritons in Graphene-Based Semiconductor Quantum Dot Waveguides. Annalen Der Physik, 0, , 2100139.	0.9	5
97	Comparison of CVD-grown and exfoliated graphene for biosensing applications. AIP Conference Proceedings, 2021, , .	0.3	5
98	Graphene oxide linking layers for highly sensitive SPR biosensing of small molecules. Materials Today: Proceedings, 2018, 5, 17437-17441.	0.9	4
99	SPR analysis of antibody-antigen interactions using graphene oxide linking layers. Materials Today: Proceedings, 2018, 5, 17442-17446.	0.9	4
100	The formation of intermediate layers in covered Ge/Si heterostructures with low-temperature quantum dots: a study using high-resolution transmission electron microscopy and Raman spectroscopy. Semiconductor Science and Technology, 2020, 35, 045012.	1.0	4
101	Spectroscopic ellipsometry of large area monolayer WS ₂ and WSe ₂ films. AIP Conference Proceedings, 2021, , .	0.3	4
102	Topography characterization of a deep grating using near-field imaging. Applied Optics, 2006, 45, 117.	2.1	3
103	Optical properties of thin graphene oxide films and their biosensing applications. Journal of Physics: Conference Series, 2020, 1461, 012068.	0.3	3
104	CHAPTER 12. Chemically Derived Graphene for Surface Plasmon Resonance Biosensing. RSC Nanoscience and Nanotechnology, 2018, , 328-353.	0.2	3
105	Near-field characterization of photonic crystal Y-splitters. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 4087-4092.	0.8	2
106	Coherent optical effects in two-dimensional nanostructures with semiconductor quantum dots. EPJ Web of Conferences, 2019, 220, 02010.	0.1	2
107	Near-field characterization of ultra-thin metal films. Journal of Physics: Conference Series, 2020, 1461, 012193.	0.3	2
108	Photogating in graphene field-effect phototransistors: Theory and observations. AIP Conference Proceedings, 2021, , .	0.3	2

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109	UV/Ozone Treatment and Open-Air Copper Plasmonics. Journal of Physics: Conference Series, 2021, 2015, 012148.	0.3	2
110	Near-field microscopy of light propagation in photonic crystal waveguides. , 2003, 5118, 515.		1
111	Defect profiles in graded band-gap layers of P-HgCdTe heteroepitaxial structures under ion-beam etching. Russian Physics Journal, 2008, 51, 936-942.	0.2	1
112	Waveguide-ring resonator-based photonic components utilizing channel plasmon polaritons. , 2008, , .		1
113	Integrated plasmonic biosensors based on microring resonators. Journal of Physics: Conference Series, 2018, 1092, 012162.	0.3	1
114	Influence of the crystalline structure of metal films on the performance of plasmonic biosensors. Journal of Physics: Conference Series, 2018, 1092, 012143.	0.3	1
115	Substrate effects in graphene field-effect transistor photodetectors. Journal of Physics: Conference Series, 2020, 1461, 012188.	0.3	1
116	Surface plasmon polariton band gap structures: implications to integrated plasmonic circuits. , 0, , .		0
117	Near-field imaging of out-of-plane light scattering in photonic crystal slabs. , 2003, , .		0
118	Near-field characterization of photonic crystal components. , 0, , .		0
119	Mapping of surface refractive-index distribution by reflection SNOM. , 2005, , .		0
120	Fabrication of plasmonic waveguides by nanoimprint and UV lithography. Proceedings of SPIE, 2008, , .	0.8	0
121	Nanophotonic components utilizing channel plasmon polaritons. Proceedings of SPIE, 2008, , .	0.8	0
122	Plasmonic Antennas Nanocoupler for Telecom Range: Simulation, Fabrication and Near-Field Characterization. , 2014, , .		0
123	Optical nano-antennae as compact and efficient couplers from free-space to waveguide modes. , 2015, , .		0
124	Design, fabrication and SNOM investigation of plasmonic devices. , 2016, , .		0
125	Ultralow-loss CMOS copper plasmonic platform. , 2017, , .		0
126	Ultra-thin gold films: towards 2D metals for photonic and optoelectronic applications. Journal of Physics: Conference Series, 2020, 1461, 012184.	0.3	0

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127	Reversible plasmonic switching in a graphene nanoresonator loaded with a core-shell quantum dot. Quantum Electronics, 2020, 50, 976-983.	0.3	0
128	Comparative analysis of optical properties of CVD graphene and graphite via spectroscopic ellipsometry. AIP Conference Proceedings, 2021, , .	0.3	0
129	Optical light confinement in terahertz antennas. AIP Conference Proceedings, 2021, , .	0.3	0
130	The generation of surface plasmon-polaritons by using hybrid opto-plasmonic scheme with quantum dots in the proximity of graphene. AIP Conference Proceedings, 2021, , .	0.3	0
131	Plasmonic metasurfaces for probing two-dimensional materials. AIP Conference Proceedings, 2021, , .	0.3	0
132	Surface-enhanced raman spectroscopy on ultrathin gold/graphene substrates near the percolation threshold. AIP Conference Proceedings, 2021, , .	0.3	0
133	Tungsten disulfide nanoparticles produced by femtosecond laser ablation in water for nanophotonic applications. Journal of Physics: Conference Series, 2021, 2015, 012155.	0.3	0