Vlad Shalaev

List of Publications by Citations

407 papers	36,434 citations	91 h-index	184 g-index
550 ext. papers	42,317 ext. citations	7.6 avg, IF	7.84 L-index

#	Paper	IF	Citations
407	Optical negative-index metamaterials. *Nature Photonics*, **2007**, 1, 41-48	33.9	2136
406	Planar photonics with metasurfaces. *Science*, **2013**, 339, 1232009	33.3	1814
405	Demonstration of a spaser-based nanolaser. *Nature*, **2009**, 460, 1110-2	50.4	1592
404	Optical cloaking with metamaterials. *Nature Photonics*, **2007**, 1, 224-227	33.9	1515
403	Alternative plasmonic materials: beyond gold and silver. *Advanced Materials*, **2013**, 25, 3264-94	24	1395
402	Searching for better plasmonic materials. *Laser and Photonics Reviews*, **2010**, 4, 795-808	8.3	1346
401	Negative index of refraction in optical metamaterials. *Optics Letters*, **2005**, 30, 3356-8	3	1273
400	Broadband light bending with plasmonic nanoantennas. *Science*, **2012**, 335, 427	33.3	1078
399	Metasurface holograms for visible light. *Nature Communications*, **2013**, 4,	17.4	898
398	Loss-free and active optical negative-index metamaterials. *Nature*, **2010**, 466, 735-8	50.4	608
397	Optical Metamaterials **2010**,		484
396	Ultra-thin, planar, Babinet-inverted plasmonic metalenses. *Light: Science and Applications*, **2013**, 2, e72-e72	12.7	478
395	Refractory plasmonics with titanium nitride: broadband metamaterial absorber. *Advanced Materials* , **2014**, 26, 7959-65	24	432
394	Applied physics. The case for plasmonics. *Science*, **2010**, 328, 440-1	33.3	419
393	Resonant Field Enhancements from Metal Nanoparticle Arrays. *Nano Letters*, **2004**, 4, 153-158	11.5	346
392	Spatiotemporal light control with active metasurfaces. *Science*, **2019**, 364,	33.3	327
391	Electromagnetic properties of small-particle composites. *Physics Reports*, **1996**, 272, 61-137	27.7	319

390	Broadband high-efficiency half-wave plate: a supercell-based plasmonic metasurface approach. *ACS Nano*, **2015**, 9, 4111-9	16.7	311
389	Engineering photonic density of states using metamaterials. *Applied Physics B: Lasers and Optics*, **2010**, 100, 215-218	1.9	309
388	Experimental Observation of Localized Optical Excitations in Random Metal-Dielectric Films. *Physical Review Letters*, **1999**, 82, 4520-4523	7.4	297
387	Applied physics. Refractory plasmonics. *Science*, **2014**, 344, 263-4	33.3	263
386	Near-field optical spectroscopy of individual surface-plasmon modes in colloid clusters. *Physical Review B*, **1999**, 59, 10903-10909	3.3	258
385	Efficient light bending with isotropic metamaterial Huygens' surfaces. *Nano Letters*, **2014**, 14, 2491-7	11.5	257
384	Demonstration of Al:ZnO as a plasmonic component for near-infrared metamaterials. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 8834-8	11.5	252
383	Electromagnetic field fluctuations and optical nonlinearities in metal-dielectric composites. *Physics Reports*, **2000**, 335, 275-371	27.7	250
382	Nanoparticle plasmonics: going practical with transition metal nitrides. *Materials Today*, **2015**, 18, 227-237	21.8	243
381	Enhanced Raman scattering by fractal clusters: Scale-invariant theory. *Physical Review B*, **1992**, 46, 2821-2830	3.3	239
380	Nonmagnetic cloak with minimized scattering. *Applied Physics Letters*, **2007**, 91, 111105	3.4	226
379	Metamagnetics with rainbow colors. *Optics Express*, **2007**, 15, 3333-41	3.3	226
378	Enhanced Nonlinear Refractive Index in ε-Near-Zero Materials. *Physical Review Letters*, **2016**, 116, 233901	7.4	224
377	Plasmon modes and negative refraction in metal nanowire composites. *Optics Express*, **2003**, 11, 735-45	3.3	219
376	The Ag dielectric function in plasmonic metamaterials. *Optics Express*, **2008**, 16, 1186-95	3.3	215
375	Fabrication of optical negative-index metamaterials: Recent advances and outlook. *Metamaterials*, **2008**, 2, 1-17		212
374	Nonlinear optics of random metal-dielectric films. *Physical Review B*, **1998**, 57, 13265-13288	3.3	210
373	Photon scanning tunneling microscopy images of optical excitations of fractal metal colloid clusters. *Physical Review Letters*, **1994**, 72, 4149-4152	7.4	208

372	Physics. Transforming light. *Science*, **2008**, 322, 384-6	33.3	204
371	Local heating with lithographically fabricated plasmonic titanium nitride nanoparticles. *Nano Letters*, **2013**, 13, 6078-83	11.5	199
370	Ultra-thin ultra-smooth and low-loss silver films on a germanium wetting layer. *Optics Express*, **2010**, 18, 5124-34	3.3	198
369	Epsilon-near-zero Al-doped ZnO for ultrafast switching at telecom wavelengths. *Optica*, **2015**, 2, 616	8.6	190
368	All-dielectric subwavelength metasurface focusing lens. *Optics Express*, **2014**, 22, 26212-21	3.3	187
367	Low-loss plasmon-assisted electro-optic modulator. *Nature*, **2018**, 556, 483-486	50.4	186
366	Enhancement of surface plasmons in an Ag aggregate by optical gain in a dielectric medium. *Optics Letters*, **2006**, 31, 3022-4	3	185
365	Small-particle composites. I. Linear optical properties. *Physical Review B*, **1996**, 53, 2425-2436	3.3	185
364	Compensating losses in negative-index metamaterials by optical parametric amplification. *Optics Letters*, **2006**, 31, 2169-71	3	183
363	Nonlinear Optics of Random Media. *Springer Tracts in Modern Physics*, **2000**,	0.1	179
362	Long-range and rapid transport of individual nano-objects by a hybrid electrothermoplasmonic nanotweezer. *Nature Nanotechnology*, **2016**, 11, 53-9	28.7	177
361	PLASMON MODES IN METAL NANOWIRES AND LEFT-HANDED MATERIALS. *Journal of Nonlinear Optical Physics and Materials*, **2002**, 11, 65-74	0.8	176
360	Roadmap on plasmonics. *Journal of Optics (United Kingdom)*, **2018**, 20, 043001	1.7	174
359	Time-varying metasurfaces and Lorentz non-reciprocity. *Optical Materials Express*, **2015**, 5, 2459	2.6	166
358	Electrical modulation of fano resonance in plasmonic nanostructures using graphene. *Nano Letters*, **2014**, 14, 78-82	11.5	165
357	Epitaxial superlattices with titanium nitride as a plasmonic component for optical hyperbolic metamaterials. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 7546-51	11.5	164
356	Highly Broadband Absorber Using Plasmonic Titanium Carbide (MXene). *ACS Photonics*, **2018**, 5, 1115-1122	6.3	162
355	A negative permeability material at red light. *Optics Express*, **2007**, 15, 1076-83	3.3	161

354	Dual-band negative index metamaterial: double negative at 813 nm and single negative at 772 nm. *Optics Letters*, **2007**, 32, 1671-3	3	160
353	Enhanced localized fluorescence in plasmonic nanoantennae. *Applied Physics Letters*, **2008**, 92, 043101	3.4	156
352	Anisotropic metamaterials emulated by tapered waveguides: application to optical cloaking. *Physical Review Letters*, **2009**, 102, 213901	7.4	155
351	Drude relaxation rate in grained gold nanoantennas. *Nano Letters*, **2010**, 10, 916-22	11.5	153
350	Engineering space for light via transformation optics. *Optics Letters*, **2008**, 33, 43-5	3	149
349	Broadband Hot-Electron Collection for Solar Water Splitting with Plasmonic Titanium Nitride. *Advanced Optical Materials*, **2017**, 5, 1601031	8.1	147
348	Liquid crystal clad near-infrared metamaterials with tunable negative-zero-positive refractive indices. *Optics Express*, **2007**, 15, 3342-7	3.3	146
347	Wavelength-tunable spasing in the visible. *Nano Letters*, **2013**, 13, 4106-12	11.5	145
346	Formation of Bound States in the Continuum in Hybrid Plasmonic-Photonic Systems. *Physical Review Letters*, **2018**, 121, 253901	7.4	136
345	Physics. Plasmonics goes quantum. *Science*, **2011**, 334, 463-4	33.3	134
344	Tunable magnetic response of metamaterials. *Applied Physics Letters*, **2009**, 95, 033115	3.4	130
343	Small-particle composites. II. Nonlinear optical properties. *Physical Review B*, **1996**, 53, 2437-2449	3.3	129
342	Improving the radiative decay rate for dye molecules with hyperbolic metamaterials. *Optics Express*, **2012**, 20, 8100-16	3.3	125
341	Yellow-light negative-index metamaterials. *Optics Letters*, **2009**, 34, 3478-80	3	124
340	Negative refractive index in optics of metal-dielectric composites. *Journal of the Optical Society of America B: Optical Physics*, **2006**, 23, 423	1.7	124
339	Random lasing in bone tissue. *Optics Letters*, **2010**, 35, 1425-7	3	123
338	Gold nanorod arrays as plasmonic cavity resonators. *ACS Nano*, **2008**, 2, 2569-76	16.7	122
337	Sub-wavelength interference pattern from volume plasmon polaritons in a hyperbolic medium. *Laser and Photonics Reviews*, **2013**, 7, 265-271	8.3	121

336	Designs for optical cloaking with high-order transformations. *Optics Express*, **2008**, 16, 5444-52	3.3	120
335	Superlens based on metal-dielectric composites. *Physical Review B*, **2005**, 72,	3.3	115
334	Photonic spin Hall effect in gap□lasmon metasurfaces for on-chip chiroptical spectroscopy. *Optica*, **2015**, 2, 860	8.6	114
333	Plasmon-Enhanced Photoelectrochemical Water Splitting for Efficient Renewable Energy Storage. *Advanced Materials*, **2019**, 31, e1805513	24	111
332	Performance analysis of nitride alternative plasmonic materials for localized surface plasmon applications. *Applied Physics B: Lasers and Optics*, **2012**, 107, 285-291	1.9	108
331	Temperature-dependent optical properties of gold thin films. *Optical Materials Express*, **2016**, 6, 2776	2.6	105
330	Loss-compensated and active hyperbolic metamaterials. *Optics Express*, **2011**, 19, 25242-54	3.3	104
329	Tunable optical negative-index metamaterials employing anisotropic liquid crystals. *Applied Physics Letters*, **2007**, 91, 143122	3.4	103
328	Fractals in Microcavities: Giant Coupled, Multiplicative Enhancement of Optical Responses. *Physical Review Letters*, **1999**, 82, 4811-4814	7.4	103
327	Plasmonic nanoantenna arrays for the visible. *Metamaterials*, **2008**, 2, 45-51		102
326	Near-zero-index materials for photonics. *Nature Reviews Materials*, **2019**, 4, 742-760	73.3	102
325	Towards CMOS-compatible nanophotonics: ultra-compact modulators using alternative plasmonic materials. *Optics Express*, **2013**, 21, 27326-37	3.3	98
324	Nanoantenna array-induced fluorescence enhancement and reduced lifetimes. *New Journal of Physics*, **2008**, 10, 125022	2.9	97
323	Experimental verification of an optical negative-index material. *Laser Physics Letters*, **2006**, 3, 49-55	1.5	97
322	Negative-Index Metamaterials: Going Optical. *IEEE Journal of Selected Topics in Quantum Electronics* , **2006**, 12, 1106-1115	3.8	97
321	Spectral Dependence of Selective Photomodification in Fractal Aggregates of Colloidal Particles. *Physical Review Letters*, **1998**, 80, 1102-1105	7.4	97
320	Growth, morphology, and optical and electrical properties of semicontinuous metallic films. *Physical Review B*, **2003**, 67,	3.3	95
319	Examining nanophotonics for integrated hybrid systems: a review of plasmonic interconnects and modulators using traditional and alternative materials [Invited]. *Journal of the Optical Society of America B: Optical Physics*, **2015**, 32, 121	1.7	92

318	Temperature-Dependent Optical Properties of Plasmonic Titanium Nitride Thin Films. *ACS Photonics*, **2017**, 4, 1413-1420	6.3	91
317	Surface-Enhanced Raman Difference between Human Insulin and Insulin Lispro Detected with Adaptive Nanostructures. *Journal of Physical Chemistry B*, **2004**, 108, 18046-18052	3.4	91
316	Optically active metasurface with non-chiral plasmonic nanoantennas. *Nano Letters*, **2014**, 14, 4426-31	11.5	90
315	Material platforms for optical metasurfaces. *Nanophotonics*, **2018**, 7, 959-987	6.3	90
314	Roadmap on optical metamaterials. *Journal of Optics (United Kingdom)*, **2016**, 18, 093005	1.7	89
313	Negative index metamaterial combining magnetic resonators with metal films. *Optics Express*, **2006**, 14, 7872-7	3.3	85
312	Enhanced Graphene Photodetector with Fractal Metasurface. *Nano Letters*, **2017**, 17, 57-62	11.5	84
311	Resonant light interaction with plasmonic nanowire systems. *Journal of Optics*, **2005**, 7, S32-S37		84
310	Anderson localization of surface plasmons and nonlinear optics of metal-dielectric composites. *Physical Review B*, **1999**, 60, 16389-16408	3.3	84
309	Solar-Powered Plasmon-Enhanced Heterogeneous Catalysis. *Nanophotonics*, **2016**, 5, 112-133	6.3	84
308	Ten years of spasers and plasmonic nanolasers. *Light: Science and Applications*, **2020**, 9, 90	16.7	82
307	Magnetic plasmon resonance. *Physical Review E*, **2006**, 73, 036609	2.4	80
306	Size Dependent (β) for Conduction Electrons in Ag Nanoparticles. *Nano Letters*, **2004**, 4, 1535-1539	11.5	80
305	Colloidal Plasmonic Titanium Nitride Nanoparticles: Properties and Applications. *Nanophotonics*, **2015**, 4, 269-276	6.3	79
304	Theory of giant Raman scattering from semicontinuous metal films. *Physical Review B*, **1997**, 55, 13234-13245	3.3	79
303	Material parameter retrieval procedure for general bi-isotropic metamaterials and its application to optical chiral negative-index metamaterial design. *Optics Express*, **2008**, 16, 11822-9	3.3	79
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301	Ultrabright Room-Temperature Sub-Nanosecond Emission from Single Nitrogen-Vacancy Centers Coupled to Nanopatch Antennas. *Nano Letters*, **2018**, 18, 4837-4844	11.5	78

300	Material platforms for integrated quantum photonics. *Optical Materials Express*, **2017**, 7, 111	2.6	77
299	Enhancement of single-photon emission from nitrogen-vacancy centers with TiN/(Al,Sc)N hyperbolic metamaterial. *Laser and Photonics Reviews*, **2015**, 9, 120-127	8.3	75
298	Holey-metal lenses: sieving single modes with proper phases. *Nano Letters*, **2013**, 13, 159-63	11.5	75
297	Optical Properties of Plasmonic Ultrathin TiN Films. *Advanced Optical Materials*, **2017**, 5, 1700065	8.1	70
296	Plasmonics on the slope of enlightenment: the role of transition metal nitrides. *Faraday Discussions*, **2015**, 178, 71-86	3.6	70
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293	Direct observation of localized dipolar excitations on rough nanostructured surfaces. *Physical Review B*, **1998**, 58, 11441-11448	3.3	69
292	Applying plasmonics to a sustainable future. *Science*, **2017**, 356, 908-909	33.3	68
291	Near-field optical studies of semicontinuous metal films. *Physical Review B*, **2001**, 64,	3.3	68
290	Machine-learning-assisted metasurface design for high-efficiency thermal emitter optimization. *Applied Physics Reviews*, **2020**, 7, 021407	17.3	67
289	Ultrathin and multicolour optical cavities with embedded metasurfaces. *Nature Communications*, **2018**, 9, 2673	17.4	66
288	Coexistence of localized and delocalized surface plasmon modes in percolating metal films. *Physical Review Letters*, **2006**, 97, 206103	7.4	66
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283	Metal nanoslit lenses with polarization-selective design. *Optics Letters*, **2011**, 36, 451-3	3	62

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279	Near-field excitation of nanoantenna resonance. *Optics Express*, **2007**, 15, 13682-8	3.3	60
278	Nonlinear optics of metal fractal clusters. *Zeitschrift F□ Physik D-Atoms Molecules and Clusters*, **1990**, 17, 283-289		58
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273	Broadband enhancement of spontaneous emission from nitrogen-vacancy centers in nanodiamonds by hyperbolic metamaterials. *Applied Physics Letters*, **2013**, 102, 173114	3.4	55
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271	Effect of metallic and hyperbolic metamaterial surfaces on electric and magnetic dipole emission transitions. *Applied Physics B: Lasers and Optics*, **2011**, 103, 553-558	1.9	54
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267	Resonant light scattering by fractal clusters. *Physical Review B*, **1991**, 44, 12216-12225	3.3	52
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264	Experimental observation of percolation-enhanced nonlinear light scattering from semicontinuous metal films. *Physical Review B*, **2001**, 64,	3.3	51
263	Light-induced kinetic effects in solids. *Physical Review B*, **1996**, 53, 11388-11402	3.3	51
262	Controlling the Plasmonic Properties of Ultrathin TiN Films at the Atomic Level. *ACS Photonics*, **2018**, 5, 2816-2824	6.3	51
261	Optical Time Reversal from Time-Dependent Epsilon-Near-Zero Media. *Physical Review Letters*, **2018**, 120, 043902	7.4	50
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255	Near-infrared metamaterials with dual-band negative-index characteristics. *Optics Express*, **2007**, 15, 1647-52	3.3	49
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251	Determining plasmonic hot-carrier energy distributions via single-molecule transport measurements. *Science*, **2020**, 369, 423-426	33.3	46
250	Random laser spectroscopy for nanoscale perturbation sensing. *Optics Letters*, **2010**, 35, 2624-6	3	46
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248	Spectroscopic studies of liquid solutions of R6G laser dye and Ag nanoparticle aggregates. *Journal of Optics*, **2005**, 7, S219-S229		46
247	Four-wave mixing, quantum control, and compensating losses in doped negative-index photonic metamaterials. *Optics Letters*, **2007**, 32, 3044-6	3	44

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243	PancharatnamBerry Phase Manipulating Metasurface for Visible Color Hologram Based on Low Loss Silver Thin Film. *Advanced Optical Materials*, **2017**, 5, 1700196	8.1	43
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226	Fractals: giant impurity nonlinearities in optics of fractal clusters. *Zeitschrift F□ Physik D-Atoms Molecules and Clusters*, **1988**, 10, 81-92		36
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222	Local electric and magnetic fields in semicontinuous metal films: Beyond the quasistatic approximation. *Physical Review B*, **2000**, 62, 11230-11244	3.3	32
221	Adiabatic frequency shifting in epsilon-near-zero materials: the role of group velocity. *Optica*, **2020**, 7, 226	8.6	32
220	Negative Refraction in Time-Varying Strongly Coupled Plasmonic-Antenna-Epsilon-Near-Zero Systems. *Physical Review Letters*, **2020**, 124, 043902	7.4	31
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212	Optical Metamagnetism and Negative-Index Metamaterials. *MRS Bulletin*, **2008**, 33, 921-926	3.2	30
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