A M Agarwal

List of Publications by Year
in descending order

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169 papers	5,067 citations	81900 39 h-index	95266 68 g-index
170 all docs	170 docs citations	170 times ranked	4144 citing authors

#	Article	IF	Citations
1	Reconfigurable Parfocal Zoom Metalens. Advanced Optical Materials, 2022, 10, .	7.3	18
2	1/f Noise Characteristics of Waveguide-Integrated PbTe MIR Detectors and Impact on Limit of Detection. Journal of Lightwave Technology, 2021, 39, 7326-7333.	4.6	3
3	Reconfigurable all-dielectric metalens with diffraction-limited performance. Nature Communications, 2021, 12, 1225.	12.8	221
4	Monolithic chalcogenide glass waveguide integrated interband cascaded laser. Optical Materials Express, 2021, 11, 2869.	3.0	8
5	High detectivity PbSxSe1-x films for mid-wavelength infrared detectors. Thin Solid Films, 2021, 731, 138749.	1.8	2
6	Impacts of oxygen sensitization methods on the deposition and microstructure of ternary lead chalcogenide alloys. Current Applied Physics, 2021, 36, 71-71.	2.4	0
7	Design of optical meta-structures with applications to beam engineering using deep learning. Scientific Reports, 2020, 10, 19923.	3.3	13
8	High efficiency four wave mixing and optical bistability in amorphous silicon carbide ring resonators. APL Photonics, 2020, 5, 076110.	5.7	20
9	Single-Element Diffraction-Limited Fisheye Metalens. Nano Letters, 2020, 20, 7429-7437.	9.1	104
10	Ternary Lead Chalcogenide Alloys for Mid-Infrared Detectors. Journal of Electronic Materials, 2020, 49, 4577-4580.	2.2	4
11	Dynamic Complex Emulsions as Amplifiers for On-Chip Photonic Cavity-Enhanced Resonators. ACS Sensors, 2020, 5, 1996-2002.	7.8	14
12	Mapping the design space of photonic topological states via deep learning. Optics Express, 2020, 28, 27893.	3.4	35
13	Real-time, in situ probing of gamma radiation damage with packaged integrated photonic chips. Photonics Research, 2020, 8, 186.	7.0	15
14	Leveraging Integrated Photonics for Ultrasound Sensing Applications. , 2020, , .		0
15	Integrated Mid-IR Photonics for Gas and Aerosol Sensors. , 2020, , .		0
16	Observation of very high order multi-photon absorption in GeSbS chalcogenide glass. APL Photonics, 2019, 4, 036102.	5.7	25
17	Monolithic on-chip mid-IR methane gas sensor with waveguide-integrated detector. Applied Physics Letters, 2019, 114, .	3.3	69
18	Ultra-flat dispersion in an integrated waveguide with five and six zero-dispersion wavelengths for mid-infrared photonics. Photonics Research, 2019, 7, 1279.	7.0	33

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19	Observation of eleven-photon absorption and four-photon absorption excited photoluminescence in GeSbS chalcogenide glass. , 2019, , .		0
20	High level active n+ doping of strained germanium through co-implantation and nanosecond pulsed laser melting. Journal of Applied Physics, 2018, 123, .	2.5	12
21	Improved retention of phosphorus donors in germanium using a non-amorphizing fluorine co-implantation technique. Journal of Applied Physics, 2018, 123, 161524.	2.5	6
22	Towards on-chip mid infrared photonic aerosol spectroscopy. Applied Physics Letters, 2018, 113, 231107.	3.3	17
23	Power-efficient generation of two-octave mid-IR frequency combs in a germanium microresonator. Nanophotonics, 2018, 7, 1461-1467.	6.0	16
24	Robust cavity soliton formation with hybrid dispersion. Photonics Research, 2018, 6, 647.	7.0	9
25	Pushing the limits of CMOS optical parametric amplifiers with USRN:Si7N3 above the two-photon absorption edge. Nature Communications, 2017, 8, 13878.	12.8	155
26	The mid-IR silicon photonics sensor platform (Conference Presentation). , 2017, , .		0
27	Strategies for increased donor electrical activity in germanium (opto-) electronic materials: a review. International Materials Reviews, 2017, 62, 334-347.	19.3	7
28	Kerr nonlinearity and multi-photon absorption in germanium at mid-infrared wavelengths. Applied Physics Letters, 2017, 111, .	3.3	21
29	Direct Electrospray Printing of Gradient Refractive Index Chalcogenide Glass Films. ACS Applied Materials & Interfaces, 2017, 9, 26990-26995.	8.0	27
30	Mid-infrared integrated photonics on silicon: a perspective. Nanophotonics, 2017, 7, 393-420.	6.0	280
31	Integrated photonics for infrared spectroscopic sensing. Proceedings of SPIE, 2017, , .	0.8	1
32	Positron annihilation lifetime spectroscopy (PALS) studies of gamma irradiated As2Se3 films used in MIR integrated photonics. Journal of Non-Crystalline Solids, 2017, 455, 29-34.	3.1	4
33	On-Chip Infrared Spectroscopic Sensing: Redefining the Benefits of Scaling. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 340-349.	2.9	49
34	Nonlinear optical properties of GeSbS chalcogenide waveguides. , 2017, , .		1
35	Mid-IR supercontinuum generated in low-dispersion Ge-on-Si waveguides pumped by sub-ps pulses. Optics Express, 2017, 25, 16116.	3.4	28
36	Robust generation of frequency combs in a microresonator with strong and narrowband loss. Photonics Research, 2017, 5, 552.	7.0	6

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37	Gamma radiation effects in amorphous silicon and silicon nitride photonic devices. Optics Letters, 2017, 42, 587.	3.3	29
38	Loss reduction of silicon-on-insulator waveguides for deep mid-infrared applications. Optics Letters, 2017, 42, 3454.	3.3	16
39	Effects of High-Energy Irradiation on Silicon Oxynitride and Silicon Photonic Waveguides. , 2016, , .		0
40	Mid-infrared supercontinuum generation in a low-dispersion Ge-on-Si waveguide using sub-picosecond pulses. , 2016, , .		0
41	Effect of Gamma Exposure on Chalcogenide Glass Films for Microphotonic Devices. , 2016, , .		1
42	On-chip chalcogenide glass waveguide-integrated mid-infrared PbTe detectors. Applied Physics Letters, 2016, 109, .	3.3	38
43	Nonlinear characterization of GeSbS chalcogenide glass waveguides. Scientific Reports, 2016, 6, 39234.	3.3	50
44	On-chip mid-infrared gas detection using chalcogenide glass waveguide. Applied Physics Letters, 2016, 108, .	3.3	129
45	Low-loss SOI waveguides at Mid-IR wavelengths (4800 nm) using the second-order TE mode. , 2016, , .		0
46	Annealing bounds to prevent further Charge Transfer Inefficiency increase of the Chandra X-ray CCDs. Nuclear Instruments & Methods in Physics Research B, 2016, 389-390, 23-27.	1.4	2
47	Irradiation of on-chip chalcogenide glass waveguide mid-infrared gas sensor. , 2016, , .		0
48	Suspended chalcogenide microcavities for ultra-sensitive chemical detection. , 2016, , .		0
49	SiC-on-insulator on-chip photonic sensor in a radiative environment. , 2016, , .		2
50	Alpha Radiation Effects on Silicon Oxynitride Waveguides. ACS Photonics, 2016, 3, 1569-1574.	6.6	14
51	Labelâ€Free Glucose Sensing Using Chipâ€Scale Midâ€Infrared Integrated Photonics. Advanced Optical Materials, 2016, 4, 1755-1759.	7.3	50
52	Gamma radiation effects on silicon photonic waveguides. Optics Letters, 2016, 41, 3053.	3.3	17
53	Robust generation of Kerr frequency combs with strong and localized spectral loss. , 2016, , .		0
54	Parameter Space Exploration in Dispersion Engineering of Multilayer Silicon Waveguides from Near-Infrared to Mid-Infrared. Journal of Lightwave Technology, 2016, 34, 3696-3702.	4.6	17

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55	Supercontinuum generation beyond 2Âµm in GeSbS waveguides. , 2016, , .		1
56	Electrospray Deposition of Uniform Thickness Ge₂₃Sb₇S₇₀ and As₄₀S₆₀ Chalcogenide Glass Films. Journal of Visualized Experiments, 2016, , .	0.3	6
57	Mid-IR Kerr Frequency Comb Generation from 4000 to 10000 nm in a CMOS-compatible Germanium Microcavity. , 2016, , .		0
58	Point defect states in Sb-doped germanium. Journal of Applied Physics, 2015, 118, 155702.	2.5	13
59	Nonlinear photonic waveguides for on-chip optical pulse compression. Laser and Photonics Reviews, 2015, 9, 294-308.	8.7	28
60	Integrated Midinfrared Laser Based on an Er-Doped Chalcogenide Microresonator. IEEE Journal of Selected Topics in Quantum Electronics, 2015, 21, 311-317.	2.9	3
61	Label-Free Water Sensors Using Hybrid Polymerâ€“Dielectric Mid-Infrared Optical Waveguides. ACS Applied Materials & Interfaces, 2015, 7, 11189-11194.	8.0	19
62	Stability of Grafted Polymer Nanoscale Films toward Gamma Irradiation. ACS Applied Materials & Interfaces, 2015, 7, 19455-19465.	8.0	16
63	Enhanced Self-frequency Shift of Cavity Soliton in Mode-locked Octave-spanning Frequency Comb Generation. , 2014, , .		2
64	Mid-Infrared Opto-nanofluidics for Label-free On-Chip Sensing. , 2014, , .		0
65	Nonlinear conversion efficiency in Kerr frequency comb generation. Optics Letters, 2014, 39, 6126.	3.3	125
66	Intra-Cavity Dispersion of Microresonators and its Engineering for Octave-Spanning Kerr Frequency Comb Generation. IEEE Journal of Selected Topics in Quantum Electronics, 2014, 20, 111-117.	2.9	13
67	Lowâ€loss aluminium nitride thin film for midâ€infrared microphotonics. Laser and Photonics Reviews, 2014, 8, L23.	8.7	48
68	Two-cycle pulse generation from mode-locked Kerr frequency combs based on an integrated dispersion-flattened micro-resonator. , 2014, , .		1
69	Mid-Infrared Spectrometer Using Opto-Nanofluidic Slot-Waveguide for Label-Free On-Chip Chemical Sensing. Nano Letters, 2014, 14, 231-238.	9.1	79
70	Low-Loss Aluminium Nitride Thin Film for Mid-Infrared Waveguiding. , 2014, , .		0
71	Inverted-Rib Chalcogenide Waveguides by Solution Process. ACS Photonics, 2014, 1, 153-157.	6.6	26
72	Mid-infrared materials and devices on a Si platform for optical sensing. Science and Technology of Advanced Materials, 2014, 15, 014603.	6.1	143

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73	Nonlinear Group IV photonics based on silicon and germanium: from near-infrared to mid-infrared. Nanophotonics, 2014, 3, 247-268.	6.0	219
74	Silicon Nitride 1Ã—8 Power Splitter for Mid-Infrared Applications. , 2014, , .		0
75	Mid-Infrared Opto-nanofluidics for on-Chip Chemical Sensing. , 2014, , .		0
76	Design and fabrication of a high transmissivity metal-dielectric ultraviolet band-pass filter. Applied Physics Letters, 2013, 102, .	3.3	20
77	Evanescently coupled mid-infrared photodetector for integrated sensing applications: Theory and design. Sensors and Actuators B: Chemical, 2013, 185, 195-200.	7.8	12
78	Reversed self-steepening in nonlinear pulse propagation along a silicon nano-crystal slot waveguide with engineered dispersion of nonlinearity. , 2013, , .		0
79	Chip-scale Mid-Infrared chemical sensors using air-clad pedestal silicon waveguides. Lab on A Chip, 2013, 13, 2161.	6.0	70
80	Air-clad silicon pedestal structures for broadband mid-infrared microphotonics. Optics Letters, 2013, 38, 1031.	3.3	55
81	Demonstration of high-Q mid-infrared chalcogenide glass-on-silicon resonators. Optics Letters, 2013, 38, 1470.	3.3	87
82	Si-CMOS compatible materials and devices for mid-IR microphotonics. Optical Materials Express, 2013, 3, 1474.	3.0	41
83	Post-fabrication trimming of athermal silicon waveguides. Optics Letters, 2013, 38, 5450.	3.3	34
84	Towards ultra-subwavelength optical latches. Applied Physics Letters, 2013, 103, .	3.3	11
85	Generation of two-cycle pulses and octave-spanning frequency combs in a dispersion-flattened micro-resonator. Optics Letters, 2013, 38, 5122.	3.3	70
86	Mid-Infrared Microphotonics Using Air-clad Silicon Pedestal Structures. , 2013, , .		0
87	Mid-Infrared Chemical Sensors On-a-Chip Using Air-clad Pedestal Silicon Waveguides. , 2013, , .		0
88	Engineering broadband and anisotropic photoluminescence emission from rare earth doped tellurite thin film photonic crystals. Optics Express, 2012, 20, 2124.	3.4	9
89	Photo-induced trimming of chalcogenide-assisted silicon waveguides. Optics Express, 2012, 20, 15807.	3.4	56
90	Exploiting photosensitive As<inf>2</inf>S<inf>3</inf> chalcogenide glass in photonic integrated circuits. , 2012, , .		0

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91	High capacity, photo-trimmable athermal silicon waveguides. , 2012, , .		0
92	Mid-infrared As<inf>2</inf>Se<inf>3</inf> chalcogenide glass-on-silicon waveguides. , 2012, , .		1
93	Integrated Optical Sensors. IEEE Photonics Journal, 2012, 4, 638-641.	2.0	5
94	Monolithically integrated, resonant-cavity-enhanced dual-band mid-infrared photodetector on silicon. Applied Physics Letters, 2012, 100, 211106.	3.3	27
95	On-Chip Octave-Spanning Supercontinuum in Nanostructured Silicon Waveguides Using Ultralow Pulse Energy. IEEE Journal of Selected Topics in Quantum Electronics, 2012, 18, 1799-1806.	2.9	33
96	Photo-induced trimming of chalcogenide-assisted silicon photonic circuits. Proceedings of SPIE, 2012, , .	0.8	0
97	Engineering Spectral Variation of FSR by Tailoring Dispersion for Octave-Spanning Comb Generation Based on Micro-Resonators. , 2012, , .		0
98	Low loss mid-infrared silicon waveguides by using pedestal geometry. , 2012, , .		0
99	Trimming of Athermal Silicon Resonators. , 2012, , .		5
100	Towards universal enrichment nanocoating for IR-ATR waveguides. Chemical Communications, 2011, 47, 9104.	4.1	11
101	Amorphous InSb and InAs 0.3 Sb 0.7 for long wavelength infrared detection. Proceedings of SPIE, 2011, , .	0.8	1
102	Photothermal nano-cavities for ultra-sensitive chem-bio detection. Proceedings of SPIE, 2011, , .	0.8	2
103	Room-temperature oxygen sensitization in highly textured, nanocrystalline PbTe films: A mechanistic study. Journal of Applied Physics, 2011, 110, .	2.5	22
104	Simulation of an erbium-doped chalcogenide micro-disk mid-infrared laser source. Optics Express, 2011, 19, 11951.	3.4	11
105	Photo-induced trimming of coupled ring-resonator filters and delay lines in As_2S_3 chalcogenide glass. Optics Letters, 2011, 36, 4002.	3.3	41
106	Long wavelength infrared detection using amorphous InSb and InAs0.3Sb0.7. Journal of Crystal Growth, 2011, 334, 84-89.	1.5	10
107	Development of chipscale chalcogenide glass based infrared chemical sensors. Proceedings of SPIE, 2011, , .	0.8	8
108	Infrared Colloidal Quantum Dot Chalcogenide Films for Integrated Light Sources. , 2011, , .		0

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109	Resonant cavity enhancement of polycrystalline PbTe films for IR detectors on Si-ROICs. , 2011, , .		3
110	Comparison of the optical, thermal and structural properties of Geâ€“Sbâ€“S thin films deposited using thermal evaporation and pulsed laser deposition techniques. Acta Materialia, 2011, 59, 5032-5039.	7.9	68
111	Resonant Cavity Enhancement of Polycrystalline PbTe Films for Two-Color IR detectors on Si-ROICs. , 2011, , .		0
112	Ultra Broadband Mid-IR Detectors Using Multilayer Anti-reflection Coupling. , 2011, , .		0
113	Erbium-Doped Chalcogenide Glass Micro-Disks as Monolithic Mid-IR Laser Sources. , 2011, , .		0
114	Temperature-enhanced light emission from Er-TeO2 Photonic Crystals. , 2011, , .		0
115	Novel Designs for On-chip Mid-Infrared Detectors Integrated with Chalcogenide Waveguides. , 2011, , .		2
116	Resonant Cavity Enhanced LWIR Sensing in Polycrystalline Pb1â^'xSnxTe. , 2011, , .		0
117	Exploiting photosensitivity in chalcogenide-assisted integrated optics. , 2011, , .		1
118	Cavity-enhanced Multispectral Photodetector on a Si Platform: Theory, Materials, and Devices. , 2010, , .		0
119	Efficient light trapping structure in thin film silicon solar cells. , 2010, , .		2
120	Integration of Self-Assembled Porous Alumina and Distributed Bragg Reflector for Light Trapping in Si Photovoltaic Devices. IEEE Photonics Technology Letters, 2010, 22, 1394-1396.	2.5	39
121	Resonant-cavity-enhanced mid-infrared photodetector on a silicon platform. Optics Express, 2010, 18, 12890.	3.4	41
122	Integrated chalcogenide waveguide resonators for mid-IR sensing: leveraging material properties to meet fabrication challenges. Optics Express, 2010, 18, 26728.	3.4	91
123	Cavity-enhanced multispectral photodetector using phase-tuned propagation: theory and design. Optics Letters, 2010, 35, 742.	3.3	16
124	Resonant cavity-enhanced photosensitivity in As_2S_3 chalcogenide glass at 1550 nm telecommunication wavelength. Optics Letters, 2010, 35, 874.	3.3	38
125	Optical loss reduction in high-index-contrast chalcogenide glass waveguides via thermal reflow. Optics Express, 2010, 18, 1469.	3.4	63
126	PROGRESS ON THE FABRICATION OF ON-CHIP, INTEGRATED CHALCOGENIDE GLASS (CHG)-BASED SENSORS. Journal of Nonlinear Optical Physics and Materials, 2010, 19, 75-99.	1.8	43

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127	Chalcogenide Glasses and their Photosensitivity: Engineered Materials for Device Applications. , 2010, , .		1
128	Cavity-Enhanced Photosensitivity in As2S3 Chalcogenide glass. , 2010, , .		0
129	Towards on-chip, integrated chalcogenide glass based biochemical sensors. , 2010, , .		0
130	Cavity-enhanced photosensitivity in chalcogenide glass. , 2009, , .		0
131	Design guidelines for optical resonator biochemical sensors. , 2009, , .		2
132	Spectral selective mid-infrared detector on a silicon platform. , 2009, , .		5
133	Development of novel integrated bio/chemical sensor systems using chalcogenide glass materials. International Journal of Nanotechnology, 2009, 6, 799.	0.2	8
134	Cavity-Enhanced IR Absorption in Planar Chalcogenide Glass Microdisk Resonators: Experiment and Analysis. Journal of Lightwave Technology, 2009, 27, 5240-5245.	4.6	43
135	Design guidelines for optical resonator biochemical sensors. Journal of the Optical Society of America B: Optical Physics, 2009, 26, 1032.	2.1	157
136	Integrating optics and micro-fluidic channels using femtosecond laser irradiation. , 2009, , .		2
137	Low-cost, Deterministic Quasi-periodic Photonic Structures for light trapping in thin film silicon solar cells. , 2009, , .		3
138	Progress on the Fabrication of On-Chip, Integrated Chalcogenide Glass (ChG)-based Sensors. , 2009, , .		1
139	Optical loss reduction in HIC chalcogenide glass waveguides via thermal reflow. , 2009, , .		2
140	Exploration of waveguide fabrication from thermally evaporated Geâ€“Sbâ€“S glass films. Optical Materials, 2008, 30, 1560-1566.	3.6	32
141	Structural, electrical, and optical properties of thermally evaporated nanocrystalline PbTe films. Journal of Applied Physics, 2008, 104, 053707.	2.5	47
142	Demonstration of chalcogenide glass racetrack microresonators. Optics Letters, 2008, 33, 761.	3.3	55
143	Planar waveguide-coupled, high-index-contrast, high-Q resonators in chalcogenide glass for sensing. Optics Letters, 2008, 33, 2500.	3.3	107
144	Femtosecond laser photo-response of Ge_23Sb_7S_70 films. Optics Express, 2008, 16, 20081.	3.4	26

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145	Integrated HIC high-Q resonators in chalcogenide glass. , 2008, , .		0
146	Microstructured chalcogenide glasses using femtosecond laser irradiation or photolithography. , 2008, , .		0
147	One-dimensional Photonic Crystal and Photoconductive PbTe Film for Low Cost Resonant-cavity-enhanced Mid-infrared Photodetector. , 2008, , .		2
148	Low-loss integrated planar chalcogenide waveguides for microfluidic chemical sensing. , 2007, , .		9
149	High performance asymmetric graded index coupler with integrated lens for high index waveguides. Applied Physics Letters, 2007, 90, 201116.	3.3	15
150	Fabrication and testing of planar chalcogenide waveguide integrated microfluidic sensor. Optics Express, 2007, 15, 2307.	3.4	159
151	Si-CMOS-compatible lift-off fabrication of low-loss planar chalcogenide waveguides. Optics Express, 2007, 15, 11798.	3.4	100
152	Low-loss high-index-contrast planar waveguides with graded-index cladding layers. Optics Express, 2007, 15, 14566.	3.4	28
153	Quantifying the Performance of Proteinâ€Resisting Surfaces at Ultraâ€Low Protein Coverages using Kinesin Motor Proteins as Probes. Advanced Materials, 2007, 19, 3171-3176.	21.0	48
154	Asymmetric GRIN Lensed Single Mode Fiber-to-Waveguide Coupler. , 2006, , .		0
155	Multispectral pixel performance using a one-dimensional photonic crystal design. Applied Physics Letters, 2006, 89, 223522.	3.3	9
156	Correlation between leakage current density and threading dislocation density in SiGe p-i-n diodes grown on relaxed graded buffer layers. Applied Physics Letters, 2001, 78, 541-543.	3.3	157
157	Er3+â€“photon interaction. Journal of Luminescence, 2000, 87-89, 323-325.	3.1	4
158	Optical transmission losses in polycrystalline silicon strip waveguides: Effects of waveguide dimensions, thermal treatment, hydrogen passivation, and wavelength. Journal of Electronic Materials, 2000, 29, 1380-1386.	2.2	86
159	Er-doped polycrystalline silicon for light emission at Î»=1.54 Âµm. Journal of Electronic Materials, 2000, 29, 973-978.	2.2	1
160	Effect of size and roughness on light transmission in a Si/SiO2 waveguide: Experiments and model. Applied Physics Letters, 2000, 77, 1617-1619.	3.3	405
161	THE EXPERIMENTAL AND THEORETICAL STUDY OF SCATTERING LOSSES IN Si/SiO2 WAVEGUIDES. , 2000, , .		0
162	Pulsed Electrode Surfacing of Steel with TiC Coating: Microstructure and Wear Properties. Journal of Materials Engineering and Performance, 1999, 8, 479-486.	2.5	32

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163	Surface Smoothing of Polycrystalline Si Waveguides With Gas-Cluster Ion Beams. Materials Research Society Symposia Proceedings, 1999, 597, 51.	0.1	0
164	Materials For Monolithic Silicon Microphotonics. Materials Research Society Symposia Proceedings, 1997, 486, 45.	0.1	12
165	Lowâ€loss polycrystalline silicon waveguides for silicon photonics. Journal of Applied Physics, 1996, 80, 6120-6123.	2.5	66
166	Interstitial Defect Reactions In Silicon. Materials Research Society Symposia Proceedings, 1996, 442, 231.	0.1	7
167	Losses in polycrystalline silicon waveguides. Applied Physics Letters, 1996, 68, 2052-2054.	3.3	51
168	Polysilicon Waveguides for Silicon Photonics. Materials Research Society Symposia Proceedings, 1995, 403, 327.	0.1	0
169	Compact 3 dB single mode fiber-to-waveguide coupler. , 0, , .		1