

Raluca A Negres

List of Publications by Year in descending order

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105
papers

2,229
citations

201674

27
h-index

243625

44
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107
all docs

107
docs citations

107
times ranked

1244
citing authors

#	ARTICLE	IF	CITATIONS
1	Investigation of UV, ns-laser damage resistance of hafnia films produced by electron beam evaporation and ion beam sputtering deposition methods. Journal of Applied Physics, 2021, 130, 043103.	2.5	2
2	515-nm, femtosecond laser mirror thin film damage competition. , 2021, , .		0
3	Determination of the Raman polarizability tensor in the optically anisotropic crystal potassium dihydrogen phosphate and its deuterated analog. Scientific Reports, 2020, 10, 16283.	3.3	5
4	Mirrors for petawatt lasers: Design principles, limitations, and solutions. Journal of Applied Physics, 2020, 128, .	2.5	9
5	Round-robin measurements of the laser-induced damage threshold with sub-picosecond pulses on optical single layers. Optical Engineering, 2020, 60, .	1.0	5
6	Origin and effect of film sub-stoichiometry on ultraviolet, ns-laser damage resistance of hafnia single layers. Optical Materials Express, 2020, 10, 937.	3.0	9
7	532-nm, nanosecond laser mirror thin film damage competition. , 2020, , .		3
8	Resonance excitation of surface capillary waves to enhance material removal for laser material processing. Scientific Reports, 2019, 9, 8152.	3.3	15
9	Physics of picosecond pulse laser ablation. Journal of Applied Physics, 2019, 125, 085103.	2.5	23
10	The impact of nano-bubbles on the laser performance of hafnia films deposited by oxygen assisted ion beam sputtering method. Applied Physics Letters, 2019, 115, .	3.3	16
11	Mechanisms of laser-induced damage in absorbing glasses with nanosecond pulses. Optics Express, 2019, 27, 9975.	3.4	8
12	Enhancement of laser material drilling using high-impulse multi-laser melt ejection. Optics Express, 2019, 27, 19864.	3.4	15
13	Dynamics of secondary contamination from the interaction of high-power laser pulses with metal particles attached on the input surface of optical components. Optics Express, 2019, 27, 23515.	3.4	11
14	Trends observed in 10 years of thin film coating laser damage competitions. , 2019, , .		0
15	1064-nm, nanosecond laser mirror thin film damage competition. , 2019, , .		2
16	Monte Carlo analysis of ISO and raster scan laser damage protocols. , 2019, , .		0
17	Laser-induced modifications of HfO ₂ coatings using picosecond pulses at 1053nm: Using polarization to isolate surface defects. Journal of Applied Physics, 2018, 124, .	2.5	3
18	Ten-year summary of the Boulder Damage Symposium annual thin film laser damage competition. Optical Engineering, 2018, 57, 1.	1.0	21

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19	Transport mirror laser damage mitigation technologies on the National Ignition Facility. , 2018, , .		9
20	1064-nm, nanosecond laser mirror thin film damage competition. , 2018, , .		4
21	Trends Observed in Ten Years of the BDS Thin Film Laser Damage Competition (Conference) Tj ETQq1 1 0.784314 rgBT /Overlock 10		1
22	Revisiting of the laser induced filamentation damage conditions in fused silica for energetic laser systems. , 2018, , .		0
23	Overview of laser damage performance of the third-harmonic frequency conversion crystals on the National Ignition Facility. , 2018, , .		2
24	High-energy (>70 keV) x-ray conversion efficiency measurement on the ARC laser at the National Ignition Facility. Physics of Plasmas, 2017, 24, .	1.9	45
25	The role of defects in laser-induced modifications of silica coatings and fused silica using picosecond pulses at 1053 nm: I Damage morphology. Optics Express, 2017, 25, 15161.	3.4	20
26	Role of defects in laser-induced modifications of silica coatings and fused silica using picosecond pulses at 1053 nm: II Scaling laws and the density of precursors. Optics Express, 2017, 25, 15381.	3.4	21
27	Optical damage performance of conductive widegap semiconductors: spatial, temporal, and lifetime modeling. Optical Materials Express, 2017, 7, 202.	3.0	13
28	355-nm, nanosecond laser mirror thin film damage competition. , 2017, , .		8
29	Mechanisms governing the interaction of metallic particles with nanosecond laser pulses. Optics Express, 2016, 24, 7792.	3.4	48
30	Laser-matter coupling mechanisms governing particulate-induced damage on optical surfaces. Proceedings of SPIE, 2016, , .	0.8	1
31	40-fs broadband low dispersion mirror thin film damage competition. , 2016, , .		9
32	Morphology and mechanisms of picosecond ablation of metal films on fused silica substrates. Proceedings of SPIE, 2016, , .	0.8	0
33	Laser-induced damage of intrinsic and extrinsic defects by picosecond pulses on multilayer dielectric coatings for petawatt-class lasers. Optical Engineering, 2016, 56, 011008.	1.0	25
34	Morphology of ejected particles and impact sites on intercepting substrates following exit-surface laser damage with nanosecond pulses in silica. Optical Engineering, 2016, 56, 011016.	1.0	18
35	“Metallic burn paper” used for in situ characterization of laser beam properties. Applied Optics, 2016, 55, 3131.	1.8	10
36	Damage on fused silica optics caused by laser ablation of surface-bound microparticles. Optics Express, 2016, 24, 2634.	3.4	63

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37	Damage Mechanisms Avoided or Managed for NIF Large Optics. Fusion Science and Technology, 2016, 69, 146-249.	1.1	121
38	Method for Transient Modulation of Refractive Index Under Exposure to High-Power Laser Pulses. , 2016, , .		0
39	Optical damage performance measurements of multilayer dielectric gratings for high energy short pulse lasers. , 2015, , .		2
40	150-ps broadband low dispersion mirror thin film damage competition. Proceedings of SPIE, 2015, , .	0.8	8
41	Energetic laser cleaning of metallic particles and surface damage on silica optics: investigation of the underlying mechanisms. Proceedings of SPIE, 2015, , .	0.8	1
42	Test station development for laser-induced optical damage performance of broadband multilayer dielectric coatings. Proceedings of SPIE, 2015, , .	0.8	3
43	The stochastic nature of growth of laser-induced damage. Proceedings of SPIE, 2015, , .	0.8	1
44	Relaxation dynamics of nanosecond laser superheated material in dielectrics. Optica, 2015, 2, 765.	9.3	44
45	Picosecond laser damage performance assessment of multilayer dielectric gratings in vacuum. Optics Express, 2015, 23, 15532.	3.4	39
46	Apparatus and Techniques for Measuring Laser Damage Resistance of Large-Area, Multilayer Dielectric Mirrors for Use with High Energy, Picosecond Lasers. , 2015, , .		1
47	Characterization of laser-induced damage by picosecond pulses on multi-layer dielectric coatings for petawatt-class lasers. Proceedings of SPIE, 2015, , .	0.8	5
48	Morphology of ejected debris from laser super-heated fused silica following exit surface laser-induced damage. , 2015, , .		1
49	Growth model for laser-induced damage on the exit surface of fused silica under UV, ns laser irradiation. Optics Express, 2014, 22, 3824.	3.4	53
50	Dynamics of the plume containing nanometric-sized particles ejected into the atmospheric air following laser-induced breakdown on the exit surface of a CaF ₂ optical window. Applied Physics Letters, 2014, 104, 031603.	3.3	6
51	Comparison of material response in fused silica and KDP following exit surface laser- induced breakdown. Proceedings of SPIE, 2013, , .	0.8	6
52	Material response during nanosecond laser induced breakdown inside of the exit surface of fused silica. Laser and Photonics Reviews, 2013, 7, 444-452.	8.7	80
53	Time-resolved imaging of processes associated with exit-surface damage growth in fused silica following exposure to nanosecond laser pulses. Optics Express, 2013, 21, 4875.	3.4	44
54	Effect of thermal anneal on growth behavior of laser-induced damage sites on the exit surface of fused silica. Optical Materials Express, 2013, 3, 765.	3.0	18

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55	Characterization of ejected fused silica particles following surface breakdown with nanosecond pulses. Optics Express, 2012, 20, 27708.	3.4	31
56	Predictive modeling techniques for nanosecond-laser damage growth in fused silica optics. Optics Express, 2012, 20, 15569.	3.4	28
57	Probability of growth of small damage sites on the exit surface of fused silica optics. Optics Express, 2012, 20, 13030.	3.4	65
58	Dynamics of transient absorption in bulk DKDP crystals following laser energy deposition. Optics Express, 2012, 20, 20447.	3.4	10
59	Estimation of the transverse stimulated Raman scattering gain coefficient in KDP and DKDP at 2%, 3%, and 4%. , 2011, , .		6
60	Exploration of the multiparameter space of nanosecond-laser damage growth in fused silica optics. Applied Optics, 2011, 50, D12.	2.1	25
61	The effect of laser pulse shape and duration on the size at which damage sites initiate and the implications to subsequent repair. Optics Express, 2011, 19, A859.	3.4	35
62	Measurement of the Raman scattering cross section of the breathing mode in KDP and DKDP crystals. Optics Express, 2011, 19, 21050.	3.4	36
63	Role of phase instabilities in the early response of bulk fused silica during laser-induced breakdown. Physical Review B, 2011, 84, .	3.2	28
64	Kinetics of ejected particles during breakdown in fused silica by nanosecond laser pulses. Applied Physics Letters, 2011, 98, .	3.3	31
65	Time-resolved imaging of material response following laser-induced breakdown in the bulk and surface of fused silica. Proceedings of SPIE, 2010, , .	0.8	3
66	Determination of laser damage initiation probability and growth on fused silica scratches. , 2010, , .		3
67	Imaging the early material response associated with exit surface damage in fused silica. , 2010, , .		1
68	Time-Resolved Microscopic Imaging of Laser-Induced Material Modifications in Optical Materials. , 2010, , .		1
69	Dynamics of material modifications following laser-breakdown in bulk fused silica. Optics Express, 2010, 18, 10642.	3.4	30
70	Investigation of the electronic and physical properties of defect structures responsible for laser-induced damage in DKDP crystals. Optics Express, 2010, 18, 13788.	3.4	84
71	Growth behavior of laser-induced damage on fused silica optics under UV, ns laser irradiation. Optics Express, 2010, 18, 19966.	3.4	104
72	The effect of pulse duration on the growth rate of laser-induced damage sites at 351 nm on fused silica surfaces. Proceedings of SPIE, 2009, , .	0.8	10

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73	Imaging system to measure kinetics of material cluster ejection during exit-surface damage initiation and growth in fused silica. Proceedings of SPIE, 2009, , .	0.8	3
74	Laser damage performance of $KD_{2x}H_xPO_4$ crystals following X-ray irradiation. Optics Express, 2008, 16, 16326.	3.4	8
75	Time-resolved imaging of material response during laser-induced bulk damage in SiO ₂ . , 2008, , .		4
76	Laser damage growth in fused silica with simultaneous 351nm and 1053nm irradiation. Proceedings of SPIE, 2008, , .	0.8	22
77	Laser annealing characteristics of multiple bulk defect populations within DKDP crystals. Journal of Applied Physics, 2008, 104, 103103.	2.5	20
78	The energy coupling efficiency of multiwavelength laser pulses to damage initiating defects in deuterated KH ₂ PO ₄ nonlinear crystals. Journal of Applied Physics, 2008, 103, .	2.5	26
79	Interactions between x-ray induced transient defects and pre-existing damage precursors in DKDP crystals. , 2008, , .		0
80	Does complex absorption behavior leading to conditioning and damage in KDP/DKDP reflect the electronic structure of initiators?. , 2007, , .		3
81	Pump and probe damage testing for investigation of transient material modifications associated with laser damage in optical materials. , 2007, , .		5
82	Evaluation of UV absorption coefficient in laser-modified fused silica. Applied Physics Letters, 2007, 90, 061115.	3.3	19
83	Expedited laser damage profiling of $KD_{2x}PO_4$ with respect to crystal growth parameters. Optics Letters, 2006, 31, 3110.	3.3	24
84	Laser-induced defect reactions governing damage initiation in DKDP crystals. Optics Express, 2006, 14, 5313.	3.4	30
85	Laser-induced defect reactions governing damage performance in KDP and DKDP crystals. , 2006, 6103, 19.		3
86	Thermal imaging investigation of modified fused silica at surface damage sites for understanding the underlying mechanisms of damage growth. , 2006, , .		5
87	Differentiation of defect populations responsible for bulk laser-induced damage in potassium dihydrogen phosphate crystals. Optical Engineering, 2006, 45, 104205.	1.0	20
88	An expedited approach to evaluate the importance of different crystal growth parameters on laser damage performance in KDP and DKDP. , 2006, , .		5
89	Correlation of laser-induced damage performance to crystal growth conditions in KDP and DKDP crystals. , 2006, , .		0
90	Understanding and predicting the damage performance of $KD_{2x}PO_4$ crystals under simultaneous exposure to 532- and 355-nm pulses. Applied Physics Letters, 2006, 89, 181922.	3.3	26

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91	A new damage testing system for detailed evaluation of damage behavior of bulk KDP and DKDP. , 2005, , .		3
92	Nonlinear behavior of laser-induced damage in KDP and DKDP under multiwavelength irradiation. , 2005, 5710, 114.		0
93	Stoichiometric changes to KH ₂ PO ₄ during laser-induced breakdown. , 2005, , .		10
94	Decomposition of KH ₂ PO ₄ crystals during laser-induced breakdown. Applied Physics Letters, 2005, 86, 171107.	3.3	52
95	Multiwavelength investigation of laser-damage performance in potassium dihydrogen phosphate after laser annealing. Optics Letters, 2005, 30, 221.	3.3	34
96	Investigation of laser annealing parameters for optimal laser-damage performance in deuterated potassium dihydrogen phosphate. Optics Letters, 2005, 30, 2766.	3.3	33
97	Origin of efficient light emission from a phosphorescent polymer/organometallic guest-host system. Physical Review B, 2003, 68, .	3.2	42
98	Two-Photon Photochromism of an Organic Material for Holographic Recording. Chemistry of Materials, 2002, 14, 3663-3667.	6.7	104
99	Two-photon spectroscopy and analysis with a white-light continuum probe. Optics Letters, 2002, 27, 270.	3.3	44
100	White-light-continuum spectroscopy to determine third-order nonlinear optical properties. , 2001, , .		0
101	<title>Two-photon photochromism of a photorefractive organic material for holographic recording</title>. , 2000, 4104, 15.		0
102	New Two-Photon Absorbing Fluorene Derivatives:â€™ Synthesis and Nonlinear Optical Characterization. Organic Letters, 1999, 1, 1575-1578.	4.6	212
103	Alignment Procedure for a Dual Grating Pulse Compressor. Applied Optics, 1998, 37, 8146.	2.1	7
104	Nonlinear spectrometry of chromophores for optical limiting. , 1998, , .		3
105	Accurate description of the light self-diffraction on high modulated dynamic gratings in semiconductor materials. , 1995, , .		0