

Stephen A Payne

List of Publications by Year in descending order

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86
papers

5,531
citations

76326

40
h-index

82547

72
g-index

86
all docs

86
docs citations

86
times ranked

2854
citing authors

#	ARTICLE	IF	CITATIONS
1	Nonlinear refractive index of optical crystals. Physical Review B, 1989, 39, 3337-3350.	3.2	558
2	Laser performance of LiSrAlF ₆ :Cr ³⁺ . Journal of Applied Physics, 1989, 66, 1051-1056.	2.5	343
3	Resonance transition 795-nm rubidium laser. Optics Letters, 2003, 28, 2336.	3.3	305
4	Strontium and barium iodide high light yield scintillators. Applied Physics Letters, 2008, 92, .	3.3	299
5	End-pumped continuous-wave alkali vapor lasers: experiment, model, and power scaling. Journal of the Optical Society of America B: Optical Physics, 2004, 21, 2151.	2.1	265
6	Nonlinear refractive-index measurements of glasses using three-wave frequency mixing. Journal of the Optical Society of America B: Optical Physics, 1987, 4, 875.	2.1	254
7	Laser and spectroscopic properties of Sr ₅ [PO ₄] ₃ F:Yb. Journal of the Optical Society of America B: Optical Physics, 1994, 11, 269.	2.1	172
8	Optical properties and laser demonstrations of Nd-doped sol-gel silica glasses. Journal of Non-Crystalline Solids, 1992, 151, 183-194.	3.1	161
9	Induced optical absorption in gamma, neutron and ultraviolet irradiated fused quartz and silica. Journal of Non-Crystalline Solids, 1997, 212, 59-73.	3.1	150
10	High-power dual-rod Yb:YAG laser. Optics Letters, 2000, 25, 805.	3.3	141
11	Ytterbium-doped apatite-structure crystals: A new class of laser materials. Journal of Applied Physics, 1994, 76, 497-503.	2.5	136
12	Optical spectroscopy of the new laser materials, LiSrAlF ₆ :Cr ³⁺ and LiCaAlF ₆ :Cr ³⁺ . Journal of Luminescence, 1989, 44, 167-176.	3.1	125
13	Crystal Growth and Scintillation Properties of Strontium Iodide Scintillators. IEEE Transactions on Nuclear Science, 2009, 56, 869-872.	2.0	125
14	Nonproportionality of Scintillator Detectors. III. Temperature Dependence Studies. IEEE Transactions on Nuclear Science, 2014, 61, 2771-2777.	2.0	118
15	Spectroscopy and gain measurements of Nd ³⁺ in SrF ₂ and other fluorite-structure hosts. Journal of the Optical Society of America B: Optical Physics, 1991, 8, 726.	2.1	107
16	Nonproportionality of Scintillator Detectors: Theory and Experiment. IEEE Transactions on Nuclear Science, 2009, 56, 2506-2512.	2.0	107
17	Concentration Effects in Eu Doped SrF ₂ . IEEE Transactions on Nuclear Science, 2010, 57, 1228-1232.	2.0	95
18	Nonproportionality of Scintillator Detectors: Theory and Experiment. II. IEEE Transactions on Nuclear Science, 2011, 58, 3392-3402.	2.0	95

#	ARTICLE	IF	CITATIONS
19	Cesium hafnium chloride: A high light yield, non-hygroscopic cubic crystal scintillator for gamma spectroscopy. Applied Physics Letters, 2015, 107, .	3.3	93
20	Thermomechanical and thermo-optical properties of the LiCaAlF ₆ :Cr ³⁺ laser material. Journal of the Optical Society of America B: Optical Physics, 1991, 8, 970.	2.1	92
21	Properties of Cr:LiSrAlF ₆ crystals for laser operation. Applied Optics, 1994, 33, 5526.	2.1	92
22	Vibrational structure in the emission spectra of Yb ³⁺ -doped apatite crystals. Journal of Luminescence, 1994, 62, 85-94.	3.1	90
23	Optical properties of Nd ³⁺ - and Tb ³⁺ -doped KPb ₂ Br ₅ and RbPb ₂ Br ₅ with low nonradiative decay. Journal of the Optical Society of America B: Optical Physics, 2004, 21, 2117.	2.1	82
24	One- and two-photon spectra of NaF:Cu ⁺ : Jahn-Teller and vibronic coupling effects. Journal of Chemical Physics, 1983, 78, 3688-3697.	3.0	75
25	Excited-state absorption of Cr ³⁺ in LiCaAlF ₆ : Effects of asymmetric distortions and intensity selection rules. Physical Review B, 1989, 39, 8907-8914.	3.2	57
26	Auger upconversion losses in Nd-doped laser glasses. Optics Communications, 1994, 111, 263-268.	2.1	56
27	Excited-state absorption of Eu ²⁺ -doped materials. Physical Review B, 1993, 47, 14003-14010.	3.2	54
28	Performance of a Facility for Measuring Scintillator Non-Proportionality. IEEE Transactions on Nuclear Science, 2008, 55, 1073-1078.	2.0	53
29	Two-photon spectroscopy of ions in crystals: Cu ⁺ and Ag ⁺ in the alkali halides. Journal of Chemical Physics, 1984, 81, 1529-1537.	3.0	50
30	Optical properties of Cr ³⁺ in fluorite-structure hosts and in MgF ₂ . Journal of Chemical Physics, 1987, 86, 3455-3461.	3.0	49
31	Direct ink write fabrication of transparent ceramic gain media. Optical Materials, 2018, 75, 19-25.	3.6	49
32	Four-wave mixing of Nd ³⁺ -doped crystals and glasses. Physical Review B, 1990, 41, 8593-8602.	3.2	48
33	Direct measurements of the terminal laser level lifetime in neodymium-doped crystals and glasses. Journal of the Optical Society of America B: Optical Physics, 1995, 12, 1981.	2.1	45
34	Excited-state absorption spectra of V ²⁺ in KMgF ₃ and MgF ₂ . Physical Review B, 1988, 37, 998-1006.	3.2	44
35	Effect of a magnetic field on the luminescent lifetime of Cu ⁺ in alkali halide host crystals. Physical Review B, 1984, 29, 32-36.	3.2	43
36	Index-of-refraction change in optically pumped solid-state laser materials. Optics Letters, 1989, 14, 1204.	3.3	43

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37	Fused Silica Final Optics for Inertial Fusion Energy: Radiation Studies and System-Level Analysis. Fusion Science and Technology, 2003, 43, 540-558.	1.1	43
38	Expanded phase stability of Gd-based garnet transparent ceramic scintillators. Journal of Materials Research, 2014, 29, 2332-2337.	2.6	41
39	Luminescence of Sm ²⁺ -doped fluoride glasses. Journal of Luminescence, 1993, 54, 337-344.	3.1	40
40	Laser activity at 118, 107, and 097??m in the low-phonon-energy hosts KPb ₂ Br ₅ and RbPb ₂ Br ₅ doped with Nd ³⁺ . Optics Letters, 2005, 30, 729.	3.3	40
41	Two-photon-absorption cross section of Nd ³⁺ in yttrium aluminum garnet and yttrium lithium fluoride near 1.061¼m. Physical Review B, 1986, 34, 8883-8891.	3.2	38
42	Excited-state absorption spectra and gain measurements of CaF ₂ :Sm ²⁺ . Journal of the Optical Society of America B: Optical Physics, 1991, 8, 1404.	2.1	36
43	Picosecond nonradiative processes in neodymium-doped crystals and glasses:. Journal of Luminescence, 1998, 79, 143-159.	3.1	36
44	Analysis of the off-center effect of Cu ⁺ in alkali halides using crystal-field theory. Physical Review B, 1987, 36, 6125-6131.	3.2	33
45	Energy-level assignments for the 1E and 3T ₁ states of MgO:Ni ²⁺ . Physical Review B, 1990, 41, 6109-6116.	3.2	30
46	Excited-state absorption of Pr ³⁺ -doped fluoride crystals. Optical Materials, 1993, 2, 225-232.	3.6	30
47	Measurements of NaI(Tl) Electron Response: Comparison of Different Samples. IEEE Transactions on Nuclear Science, 2009, 56, 331-336.	2.0	30
48	Determination of excited-state polarizabilities of Cr ³⁺ -doped materials by degenerate four-wave mixing. Physical Review B, 1989, 40, 10727-10740.	3.2	27
49	Dispersion effects in four-wave mixing measurements of ions in solids. Optics Letters, 1990, 15, 1233.	3.3	27
50	Optical spectroscopy of Cr ³⁺ in ScF ₃ and Sc ₂ O ₃ . Journal of Luminescence, 1988, 39, 259-268.	3.1	25
51	DPAL: a new class of CW near-infrared high-power diode-pumped alkali (vapor) lasers. , 2004, , .		24
52	New class of cw high-power diode-pumped alkali lasers (DPALs) (Plenary Paper). , 2004, 5448, 7.		24
53	Excited state absorption of Sm ²⁺ in SrF ₂ and SrCl ₂ . Journal of Chemical Physics, 1988, 88, 6751-6756.	3.0	23
54	Flashlamp-pumped laser performance of LiCaAlF ₆ :Cr ³⁺ . Optical and Quantum Electronics, 1990, 22, S259-S268.	3.3	23

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55	Laser emission from the transition-metal compound LiSrCrF ₆ . Optics Letters, 1993, 18, 200.	3.3	21
56	Sm ²⁺ → Nd ³⁺ energy transfer in CaF ₂ . Journal of the Optical Society of America B: Optical Physics, 1986, 3, 1181.	2.1	19
57	Dispersion of the nonlinear refractive index of optical crystals. Optical Materials, 1992, 1, 185-194.	3.6	18
58	Nonproportionality of Scintillator Detectors. V. Comparing the Gamma and Electron Response. IEEE Transactions on Nuclear Science, 2015, 62, 1429-1436.	2.0	18
59	Photoionization pathways of copper(1+) in cadmium chloride and cadmium bromide. The Journal of Physical Chemistry, 1984, 88, 1379-1385.	2.9	17
60	Luminescence of Cu ⁺ centers in SrCl ₂ . Journal of Luminescence, 1986, 35, 171-177.	3.1	17
61	Optical pump-probe processes in Nd ³⁺ -doped KPb ₂ Br ₅ , RbPb ₂ Br ₅ , and KPb ₂ Cl ₅ . Journal of the Optical Society of America B: Optical Physics, 2005, 22, 2610.	2.1	17
62	Electronic spectroscopy of KF:Cu ⁺ . Physica B: Condensed Matter, 1990, 167, 56-60.	2.7	15
63	Laser demonstration of neodymium-doped strontium chlorovanadate. Applied Physics Letters, 1994, 65, 1208-1210.	3.3	15
64	Nonproportionality of Scintillator Detectors. IV. Resolution Contribution from Delta-Rays. IEEE Transactions on Nuclear Science, 2015, 62, 372-380.	2.0	15
65	Excited state dynamics of NaF:Cu ⁺ . Journal of Chemical Physics, 1984, 81, 1523-1528.	3.0	14
66	<title>New low-phonon frequency crystals based on rare-earth-doped double halogenides for multiwavelength diode-pumped solid state lasers</title>. , 2002, , .		12
67	Optical spectroscopy of holmium doped K ₂ LaCl ₅ . Journal of Luminescence, 2018, 196, 221-226.	3.1	10
68	New tunable solid-state lasers Cr ³⁺ :LiCaAlF ₆ and Cr ³⁺ :LiSrAlF ₆ . Optics and Photonics News, 1990, 1, 16.	0.5	9
69	Transient gratings by 4f → 5d excitation of rare earth impurities in solids. Journal of Luminescence, 1991, 50, 159-168.	3.1	9
70	High-average-power diode-pumped Yb:YAG lasers. , 2000, , .		9
71	Characteristics of undoped and europium-doped Sr ₂ scintillator detectors. , 2011, , .		9
72	The characterization of Eu ²⁺ -doped mixed alkaline-earth iodide scintillator crystals. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 643, 75-78.	1.6	9

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73	Material jet printing of transparent ceramic Yb:YAG planar waveguides. Optics Letters, 2021, 46, 2433.	3.3	9
74	A Glimpse into the Laser-Crystal Ball. Optics and Photonics News, 1996, 7, 31.	0.5	7
75	History and current status of strontium iodide scintillators. , 2017, , .		5
76	Optical properties of CR ³⁺ in fluoride hosts. Journal of Luminescence, 1988, 40-41, 305-306.	3.1	4
77	Analysis of Sr _{5-x} Bax(PO ₄) ₃ F:Yb ³⁺ crystals for improved laser performance with diode-pumping. , 1997, , SC4.		3
78	Counter-ion effect on the diffusion behavior of Yb, Lu, and Nd ions in YAG transparent ceramics. Optical Materials: X, 2022, 13, 100132.	0.8	3
79	Transparent Ceramic Garnet Gamma-Ray Spectrometer With Directionality. IEEE Transactions on Nuclear Science, 2018, 65, 2303-2309.	2.0	2
80	End-Pumped 895 nm Cs Laser. , 2004, , .		2
81	Laser Performance and Spectroscopy of Cr ³⁺ in LiCaAlF ₆ and LiSrAlF ₆ . , 1989, , .		1
82	Laser Performance and Optical Properties of LiSrGaF ₆ :Cr ³⁺ . , 1991, , .		1
83	Lasers, Solid-State. , 2003, , 477-498.		0
84	Measurement of Thermal Lensing for the LiCaAlF ₆ : Cr ³⁺ Laser Material. , 1991, , .		0
85	Excited-State Absorption Measurements of Sm ²⁺ in CaF ₂ , SrF ₂ and SrCl ₂ . , 1991, , .		0
86	Silicon Photomultipliers Coupled to Scintillators With the Emission Maximum at 550 nm. IEEE Transactions on Nuclear Science, 2022, 69, 1799-1805.	2.0	0