# Guillaume Duchateau

List of Publications by Year
in descending order

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| 102 | 1,427 | 304743 | 377865 |
|---|---|---|---|
| papers | citations | 22 h-index | 34 g-index |

| 102 | 102 | 102 | 896 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Control of nonlinear processes using versatile random photonic sources: Application to the energy deposition in a dielectric material. Physical Review A, 2022, 105, . | 2.5 | 0 |
| 2 | Electron dynamics in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î±</mml:mi></mml:math> -quartz induced by two-color 10-femtosecond laser pulses. Physical Review B, 2022, 105, . | 3.2 | 5 |
| 3 | Modeling the time-dependent electron dynamics in dielectric materials induced by two-color femtosecond laser pulses: Applications to material modifications. Physical Review A, 2021, 103, . | 2.5 | 6 |
| 4 | Numerical studies of dielectric material modifications by a femtosecond Besselâ€“Gauss laser beam. Applied Physics A: Materials Science and Processing, 2021, 127, 1. | 2.3 | 11 |
| 5 | Improved modeling of the solid-to-plasma transition of polystyrene ablator for laser direct-drive inertial confinement fusion hydrocodes. Physical Review E, 2021, 104, 015210. | 2.1 | 3 |
| 6 | Self-focusing of a spatially modulated beam within the paraxial complex geometrical optics framework in low-density plasmas. Plasma Physics and Controlled Fusion, 2021, 63, 125019. | 2.1 | 2 |
| 7 | Experimental investigation of the collective stimulated Brillouin and Raman scattering of multiple laser beams in inertial confinement fusion experiments. Plasma Physics and Controlled Fusion, 2020, 62, 014024. | 2.1 | 10 |
| 8 | Modeling the electron collision frequency during solid-to-plasma transition of polystyrene ablator for direct-drive inertial confinement fusion applications. Physics of Plasmas, 2020, 27, . | 1.9 | 5 |
| 9 | Implementing a microphysics model in hydrodynamic simulations to study the initial plasma formation in dielectric ablator materials for direct-drive implosions. Physical Review E, 2020, 101, 063202. | 2.1 | 4 |
| 10 | Optical Bloch modeling of femtosecond-laser-induced electron dynamics in dielectrics. Physical Review E, 2020, 101, 063206. | 2.1 | 9 |
| 11 | Evidence of noncollisional femtosecond laser energy deposition in dielectric materials. Physical Review B, 2020, 102, . | 3.2 | 7 |
| 12 | Fused silica ablation by double femtosecond laser pulses: influence of polarization state. Optics Express, 2020, 28, 15189. | 3.4 | 8 |
| 13 | Modeling Femtosecond Laser-Induced Electron Dynamics in Dielectrics by Means of Optical Bloch Equations. , 2019, , . | | 0 |
| 14 | Modeling of laser ponderomotive self-focusing in plasma within the paraxial complex geometrical optics approach. Plasma Physics and Controlled Fusion, 2019, 61, 115009. | 2.1 | 4 |
| 15 | Modeling the solid-to-plasma transition for laser imprinting in direct-drive inertial confinement fusion. Physical Review E, 2019, 100, 033201. | 2.1 | 18 |
| 16 | Spectral broadening effects on metal photoemission by femtosecond laser pulses. Physical Review A, 2019, 99, . | 2.5 | 2 |
| 17 | Direct-drive measurements of laser-imprint-induced shock velocity nonuniformities. Physical Review E, 2019, 99, 063208. | 2.1 | 15 |
| 18 | Structural Slow Waves: Parallels between Photonic Crystals and Plasmonic Waveguides. ACS Photonics, 2019, 6, 4-17. | 6.6 | 20 |

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| 19 | Ultrashort laser induced spatial redistribution of silver species and nano-patterning of etching selectivity in silver-containing glasses. Optics Express, 2019, 27, 13675. | 3.4 | 5 |
| 20 | Fused silica ablation by double femtosecond laser pulses with variable delays. , 2019, , . | | 3 |
| 21 | Thermo-elasto-plastic simulations of femtosecond laser-induced multiple-cavity in fused silica. Applied Physics A: Materials Science and Processing, 2018, 124, 1. | 2.3 | 9 |
| 22 | On the femtosecond laser-induced photochemistry in silver-containing oxide glasses: mechanisms, related optical and physico-chemical properties, and technological applications. Advanced Optical Technologies, 2018, 7, 291-309. | 1.7 | 41 |
| 23 | Ultrafast changes in optical properties of SiO2 excited by femtosecond laser at the damage threshold and above. Physical Review B, 2018, 98, . | 3.2 | 6 |
| 24 | Maxwell-consistent, symmetry- and energy-preserving solutions for ultrashort-laser-pulse propagation beyond the paraxial approximation. Physical Review A, 2018, 98, . | 2.5 | 5 |
| 25 | Dynamics of laser-induced defects by multiple femtosecond pulses in potassium dihydrogen phosphate crystals. Journal of the Optical Society of America B: Optical Physics, 2018, 35, 1119. | 2.1 | 3 |
| 26 | Theoretical derivation of laser-dressed atomic states by using a fractal space. European Physical Journal Plus, 2018, 133, 1. | 2.6 | 3 |
| 27 | The role of hot electrons in the dynamics of a laser-driven strong converging shock. Physics of Plasmas, 2017, 24, . | 1.9 | 17 |
| 28 | Laser writing of nonlinear optical properties in silver-doped phosphate glass. Optics Letters, 2017, 42, 1688. | 3.3 | 9 |
| 29 | Improved laser glass cutting by spatio-temporal control of energy deposition using bursts of femtosecond pulses. Optics Express, 2017, 25, 33271. | 3.4 | 77 |
| 30 | Thermo-elasto-plastic simulations of femtosecond laser-induced structural modifications: Application to cavity formation in fused silica. Journal of Applied Physics, 2017, 122, . | 2.5 | 15 |
| 31 | Laser glass cutting by spatio-temporal control of energy deposition using bursts of femtosecond pulses. , 2017, , . | | 1 |
| 32 | Enhanced photoemission from laser-excited plasmonic nano-objects in periodic arrays. Journal of Physics Condensed Matter, 2016, 28, 315301. | 1.8 | 8 |
| 33 | Experimental Investigation of the Collective Raman Scattering of Multiple Laser Beams in Inhomogeneous Plasmas. Physical Review Letters, 2016, 117, 235002. | 7.8 | 38 |
| 34 | Crossed beam energy transfer: Assessment of the paraxial complex geometrical optics approach versus a time-dependent paraxial method to describe experimental results. Physics of Plasmas, 2016, 23, . | 1.9 | 20 |
| 35 | Modeling of energy transfer between two crossing smoothed laser beams in a plasma with flow profile. Journal of Physics: Conference Series, 2016, 717, 012096. | 0.4 | 2 |
| 36 | Influence of laser induced hot electrons on the threshold for shock ignition of fusion reactions. Physics of Plasmas, 2016, 23, . | 1.9 | 20 |

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| 37 | Influence of non-collisional laser heating on the electron dynamics in dielectric materials. Journal Physics D: Applied Physics, 2016, 49, 485103. | 2.8 | 9 |
| 38 | Modeling of cluster organization in metal-doped oxide glasses irradiated by a train of femtosecond laser pulses. Physical Review A, 2016, 93, . | 2.5 | 20 |
| 39 | Physics of laser-plasma interaction for shock ignition of fusion reactions. Plasma Physics and Controlled Fusion, 2016, 58, 014018. | 2.1 | 7 |
| 40 | Coupled hydrodynamic model for laser-plasma interaction and hot electron generation. Physical Review E, 2015, 92, 041101. | 2.1 | 41 |
| 41 | Femtosecond laser pulse train interaction with dielectric materials. Applied Physics Letters, 2015, 107, . | 3.3 | 28 |
| 42 | Surface Plasmon stimulated photoemission process at metal gratings : Theory and Experiments. Journal of Physics: Conference Series, 2015, 635, 102001. | 0.4 | 0 |
| 43 | Modeling of the cross-beam energy transfer with realistic inertial-confinement-fusion beams in a large-scale hydrocode. Physical Review E, 2015, 91, 013102. | 2.1 | 27 |
| 44 | Multi-wavelength study of nanosecond laser-induced bulk damage morphology in KDP crystals. Applied Physics A: Materials Science and Processing, 2015, 119, 1317-1326. | 2.3 | 30 |
| 45 | Femtosecond laser cutting of glass by controlled fracture propagation. , 2015, , . | | 1 |
| 46 | Investigations on laser damage growth in fused silica with simultaneous wavelength irradiation. Applied Optics, 2015, 54, 1463. | 1.8 | 18 |
| 47 | Effects of burst mode on transparent materials processing. , 2015, , . | | 10 |
| 48 | Laser-induced damage morphology in fused silica at 1064 nm in the nanosecond regime. Proceedings of SPIE, 2014, , . | 0.8 | 2 |
| 49 | Modeling the material properties at the onset of damage initiation in bulk potassium dihydrogen phosphate crystals. Proceedings of SPIE, 2014, , . | 0.8 | 2 |
| 50 | Transient material properties during defect-assisted laser breakdown in deuterated potassium dihydrogen phosphate crystals. Journal of Applied Physics, 2014, 115, 103506. | 2.5 | 22 |
| 51 | Towards modeling of nonlinear laser-plasma interactions with hydrocodes: The thick-ray approach. Physical Review E, 2014, 89, 033101. | 2.1 | 28 |
| 52 | Origin of the damage ring pattern in fused silica induced by multiple longitudinal modes laser pulses. Applied Physics Letters, 2014, 104, 021121. | 3.3 | 36 |
| 53 | Influence of the time-dependent pulse spectrum on ionization and laser propagation in nonlinear optical materials. Physical Review A, 2014, 89, . | 2.5 | 14 |
| 54 | Catastrophic nanosecond laser induced damage in the bulk of potassium titanyl phosphate crystals. Journal of Applied Physics, 2014, 115, 243102. | 2.5 | 12 |

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| 55 | Influence of electron Coulomb explosion on photoelectron spectra of dielectrics irradiated by femtosecond laser pulses. Laser Physics, 2014, 24, 086101. | 1.2 | 7 |
| 56 | Filamentation of ultrashort laser pulses in silica glass and KDP crystals: A comparative study. Physical Review A, 2014, 90, . | 2.5 | 25 |
| 57 | Quantum-classical model for the surface plasmon enhanced photoemission process at metal surfaces. Physical Review B, 2014, 89, . | 3.2 | 7 |
| 58 | Interaction of intense femtosecond laser pulses with KDP and DKDP crystals in the short wavelength regime. Journal of Physics Condensed Matter, 2013, 25, 435501. | 1.8 | 14 |
| 59 | Strong nonlinear electron multiplication without impact ionization in dielectric nanoparticles embedded in optical materials. Physics of Plasmas, 2013, 20, 022306. | 1.9 | 6 |
| 60 | General model for nanosecond-laser induced damage in KTiOPO4crystals. , 2013, , . | | 1 |
| 61 | A model for multiphoton absorption in dielectric materials induced by short laser pulses at moderate intensities. Journal of Physics Condensed Matter, 2013, 25, 235501. | 1.8 | 12 |
| 62 | Interaction of short and intense laser pulses with dielectric materials: from absorption to ablation. MATEC Web of Conferences, 2013, 8, 02005. | 0.2 | 0 |
| 63 | Potassium titanyl phosphate at its limits: A study on nanosecond laser induced damage. , 2013, , . | | 0 |
| 64 | Time-dependent ionization models designed for intense and short laser pulse propagation in dielectric materials. Physical Review E, 2012, 85, 056403. | 2.1 | 24 |
| 65 | Strong nonlinear growth of energy coupling during laser irradiation of transparent dielectrics and its significance for laser induced damage. Journal of Applied Physics, 2012, 111, . | 2.5 | 54 |
| 66 | Cesar, a pulsed power generator, used to study the dynamic behavior of KDP crystal. , 2012, , . | | 0 |
| 67 | Competition between ultraviolet and infrared nanosecond laser pulses during the optical breakdown of KH2PO4 crystals. Applied Physics B: Lasers and Optics, 2012, 109, 695-706. | 2.2 | 17 |
| 68 | Laser-matter structuration of optical and biological materials. Applied Surface Science, 2012, 258, 9263-9269. | 6.1 | 2 |
| 69 | A simple approach for modeling multiphoton absorption in dielectric materials. , 2011, , . | | 0 |
| 70 | Electron-hole dynamics in normal and deuterated KH<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>PO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>4</mml:mn></mml:mro | 3.2 | 33 |
| 71 | A KDP equation of state for laser-induced damage applications. Journal of Applied Physics, 2011, 109, . | 2.5 | 25 |
| 72 | 355 nm and 1064 nm-pulse mixing to identify the laser-induced damage mechanisms in KDP. Proceedings of SPIE, 2011, , . | 0.8 | 1 |

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| 73 | Thermal Approaches to Interpret Laser Damage Experiments. , 2011, , . | | 0 |
| 74 | On the cooperativeness of nanosecond-laser induced damage during frequency doubling of 1064 nm light in KTiOPO 4. , 2011, , . | | 1 |
| 75 | Model for nanosecond laser induced damage in potassium titanyl phosphate crystals. Applied Physics Letters, 2011, 99, 231111. | 3.3 | 12 |
| 76 | Self-laser conditioning of KDP and DKDP crystals. , 2011, , . | | 1 |
| 77 | Effect of strain on laser damage and its relation with precursor defects in KDP/DKDP. , 2011, , . | | 2 |
| 78 | Carrier dynamics in KDP and DKDP crystals illuminated by intense femtosecond laser pulses. Proceedings of SPIE, 2011, , . | 0.8 | 0 |
| 79 | KDP crystal orientation influence on the nanosecond laser-induced damage at 1064nm. , 2010, , . | | 1 |
| 80 | Modeling of laser-induced damage in KDP crystals by nanosecond pulses : a preliminary hydrodynamic study. Proceedings of SPIE, 2010, , . | 0.8 | 5 |
| 81 | Pump-pump experiment in KH2PO4 crystals: Coupling two different wavelengths to identify the laser-induced damage mechanisms in the nanosecond regime. Applied Physics Letters, 2010, 96, . | 3.3 | 19 |
| 82 | Identification of the laser-induced damage mechanisms in KDP by coupling 355nm and 1064nm nanosecond pulses. Proceedings of SPIE, 2010, , . | 0.8 | 2 |
| 83 | Transmission measurements in rapid growth KDP and DKDP crystals. Journal of Modern Optics, 2009, 56, 27-31. | 1.3 | 11 |
| 84 | Modeling laser conditioning of KDP crystals. , 2009, , . | | 5 |
| 85 | Simple models for laser-induced damage and conditioning of potassium dihydrogen phosphate crystals by nanosecond pulses. Optics Express, 2009, 17, 10434. | 3.4 | 53 |
| 86 | Laser-induced damage of KDP crystals by 1Ï‰ nanosecond pulses: influence of crystal orientation. Optics Express, 2009, 17, 21652. | 3.4 | 50 |
| 87 | Toward a better understanding of multi-wavelength effects on KDP crystals. , 2009, , . | | 7 |
| 88 | Scaling laws in laser-induced potassium dihydrogen phosphate crystal damage by nanosecond pulses at 3Ï‰. Journal of the Optical Society of America B: Optical Physics, 2008, 25, 1087. | 2.1 | 41 |
| 89 | Simple Models for Laser-Induced Damage of KH2PO4 Crystals by Nanosecond Pulses. , 2008, , . | | 0 |
| 90 | Comparison of ns and sub-ns laser conditioning of KDP and DKDP crystals for high power lasers. , 2007, 6720, 532. | | 3 |

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| 91 | A model of laser-induced damage of KDP based on the coupling of statistics and heat transfer. Proceedings of SPIE, 2007, 6720, 71. | 0.8 | 0 |
| 92 | Coupling statistics and heat transfer to study laser-induced crystal damage by nanosecond pulses. Optics Express, 2007, 15, 4557. | 3.4 | 49 |
| 93 | Control of hourglass modes in prisms with pentagons or hexagons as bases. Finite Elements in Analysis and Design, 2006, 42, 1199-1210. | 3.2 | 0 |
| 94 | Revisited thermal approach to model laser-induced damage and conditioning process in KH 2 PO 4 and D 2x KH 2(1-x) PO 4 crystals. , 2006, , . | | 8 |
| 95 | Coulombâ€"Volkov approaches to atom ionization by short electromagnetic pulses. Journal of Modern Optics, 2003, 50, 331-341. | 1.3 | 2 |
| 96 | Coulomb-Volkov approaches to atom ionization by short electromagnetic pulses. Journal of Modern Optics, 2003, 50, 331-341. | 1.3 | 5 |
| 97 | Coulomb-Volkov approach of ionization by extreme-ultraviolet laser pulses in the subfemtosecond regime. Physical Review A, 2002, 66, . | 2.5 | 70 |
| 98 | Coulomb-Volkov approach of atom ionization by intense and ultrashort laser pulses. Physical Review A, 2001, 63, . | 2.5 | 52 |
| 99 | Ionization of alkali-metal atoms by ultrashort laser pulses. Physical Review A, 2001, 65, . | 2.5 | 11 |
| 100 | A simple non-perturbative approach of atom ionisation by intense and ultra-short laser pulses. European Physical Journal D, 2000, 11, 191-196. | 1.3 | 33 |
| 101 | Ionization dynamics in interactions of atoms with ultra-short and intense laser pulses. Journal of Physics B: Atomic, Molecular and Optical Physics, 2000, 33, L571-L576. | 1.5 | 37 |
| 102 | Theoretical study of spatiotemporal focusing for in-bulk laser structuring of dielectric. Journal of the Optical Society of America B: Optical Physics, 0, , . | 2.1 | 1 |