# Boris D Barmashenko

List of Publications by Year
in descending order



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|---|---|---|---|
| 92 papers | 864 citations | 516710 16 h-index | 552781 26 g-index |
| 92 all docs | 92 docs citations | 92 times ranked | 138 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Detailed analysis of kinetic and fluid dynamic processes in diode-pumped alkali lasers. Journal of the Optical Society of America B: Optical Physics, 2013, 30, 1118. | 2.1 | 100 |
| 2 | Computational fluid dynamics modeling of subsonic flowing-gas diode-pumped alkali lasers: comparison with semi-analytical model calculations and with experimental results. Journal of the Optical Society of America B: Optical Physics, 2014, 31, 2628. | 2.1 | 50 |
| 3 | Modeling of flowing gas diode pumped alkali lasers: dependence of the operation on the gas velocity and on the nature of the buffer gas. Optics Letters, 2012, 37, 3615. | 3.3 | 44 |
| 4 | Static diode pumped alkali lasers: Model calculations of the effects of heating, ionization, high electronic excitation and chemical reactions. Optics Communications, 2013, 292, 123-125. | 2.1 | 42 |
| 5 | Enhanced stimulated Raman scattering in temperature controlled liquid water. Applied Physics Letters, 2014, 105, 061107. | 3.3 | 41 |
| 6 | Feasibility of supersonic diode pumped alkali lasers: Model calculations. Applied Physics Letters, 2013, 102, 141108. | 3.3 | 37 |
| 7 | Modeling of mixing in chemical oxygenâ€iodine lasers: Analytic and numerical solutions and comparison with experiments. Journal of Applied Physics, 1994, 75, 7653-7665. | 2.5 | 34 |
| 8 | Nearly attaining the theoretical efficiency of supersonic chemical oxygen-iodine lasers. Applied Physics Letters, 2004, 85, 5851-5853. | 3.3 | 25 |
| 9 | Power dependence of chemical oxygen-iodine lasers on iodine dissociation. AIAA Journal, 1996, 34, 2569-2574. | 2.6 | 22 |
| 10 | Experiment and modeling of a small-scale, supersonic chemical oxygen-iodine laser. Applied Physics B: Lasers and Optics, 1995, 61, 37-47. | 2.2 | 21 |
| 11 | Diode-laser-based absorption spectroscopy diagnostics of a jet-type O/sub 2/(/sup 1/Î”) generator for chemical oxygen-iodine lasers. IEEE Journal of Quantum Electronics, 1999, 35, 540-547. | 1.9 | 21 |
| 12 | Power enhancement in chemical oxygen-iodine lasers by iodine predissociation via corona/glow discharge. Applied Physics Letters, 2007, 90, 161122. | 3.3 | 21 |
| 13 | An efficient supersonic chemical oxygenâ€“iodine laser operating without buffer gas and with simple nozzle geometry. Applied Physics Letters, 1997, 70, 2341-2343. | 3.3 | 20 |
| 14 | Modeling of supersonic diode pumped alkali lasers. Journal of the Optical Society of America B: Optical Physics, 2015, 32, 1824. | 2.1 | 20 |
| 15 | Modeling of pulsed K diode pumped alkali laser: Analysis of the experimental results. Optics Express, 2015, 23, 20986. | 3.4 | 18 |
| 16 | Laser power, cell temperature, and beam quality dependence on cell length of static Cs DPAL. Journal of the Optical Society of America B: Optical Physics, 2017, 34, 279. | 2.1 | 17 |
| 17 | Power optimization of small-scale chemical oxygen-iodine laser with jet-type singlet oxygen generator. IEEE Journal of Quantum Electronics, 1996, 32, 2051-2057. | 1.9 | 16 |
| 18 | Parametric study of small-signal gain in a slit nozzle, supersonic chemical oxygen-iodine laser operating without primary buffer gas. IEEE Journal of Quantum Electronics, 2001, 37, 174-182. | 1.9 | 16 |

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| 19 | Parametric study of an efficient supersonic chemical oxygen-iodine laser/jet generator system operating without buffer gas. IEEE Journal of Quantum Electronics, 1998, 34, 1068-1074. | 1.9 | 15 |
| 20 | Analysis of lasing in gas-flow lasers with stable resonators. Applied Optics, 1998, 37, 5697. | 2.1 | 15 |
| 21 | Theoretical modeling of chemical generators producing O2(1Î”) at high pressure for chemically pumped iodine lasers. Journal of Applied Physics, 1993, 73, 1598-1611. | 2.5 | 14 |
| 22 | A 33% efficient chemical oxygenâ€“iodine laser with supersonic mixing of iodine and oxygen. Applied Physics Letters, 2003, 82, 3838-3840. | 3.3 | 13 |
| 23 | Analysis of continuous wave diode pumped cesium laser with gas circulation: experimental and theoretical studies. Optics Express, 2018, 26, 17814. | 3.4 | 13 |
| 24 | Beam propagation in an inhomogeneous medium of a static gas cesium diode pumped alkali laser: three-dimensional wave optics and fluid dynamics simulation. Journal of the Optical Society of America B: Optical Physics, 2018, 35, 558. | 2.1 | 13 |
| 25 | Parametric study of the gain in a small scale, grid nozzle, supersonic chemical oxygen-iodine laser. IEEE Journal of Quantum Electronics, 1995, 31, 903-909. | 1.9 | 12 |
| 26 | Spatial distribution of the gain and temperature across the flow in a slit-nozzle supersonic chemical oxygen-iodine laser with transonic and supersonic schemes of iodine injection. IEEE Journal of Quantum Electronics, 2002, 38, 1398-1405. | 1.9 | 12 |
| 27 | Kinetic and fluid dynamic processes in diode pumped alkali lasers: semi-analytical and 2D and 3D CFD modeling. , 2014, , . | | 12 |
| 28 | CFD DPAL modeling for various schemes of flow configurations. Proceedings of SPIE, 2014, , . | 0.8 | 11 |
| 29 | CFD assisted simulation of temperature distribution and laser power in pulsed and CW pumped static gas DPALs. Proceedings of SPIE, 2015, , . | 0.8 | 10 |
| 30 | Flowing-gas diode pumped alkali lasers: theoretical analysis of transonic vs supersonic and subsonic devices. Optics Express, 2016, 24, 5469. | 3.4 | 10 |
| 31 | Multi-transverse mode operation of alkali vapor lasers: modeling and comparison with experiments. Optics Express, 2017, 25, 19767. | 3.4 | 10 |
| 32 | Dependence of static K DPAL performance on addition of methane to He buffer gas: 3D CFD modeling and comparison with experimental results. Journal of the Optical Society of America B: Optical Physics, 2019, 36, 3464. | 2.1 | 10 |
| 33 | The sudden expansion of a gas cloud into vacuum revisited. Physics of Fluids A, Fluid Dynamics, 1993, 5, 3265-3272. | 1.6 | 9 |
| 34 | One-dimensional modeling of the gain and temperature in a supersonic chemical oxygen-iodine laser with transonic injection of iodine. IEEE Journal of Quantum Electronics, 2002, 38, 345-352. | 1.9 | 9 |
| 35 | Influence of the pump-to-laser beam overlap on the performance of optically pumped cesium vapor laser. Optics Express, 2016, 24, 14374. | 3.4 | 9 |
| 36 | Velocity dependence of the performance of flowing-gas K DPAL with He and He/CH<sub>4</sub> buffer gases: 3D CFD modeling and comparison with experimental results. Journal of the Optical Society of America B: Optical Physics, 2020, 37, 2209. | 2.1 | 8 |

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| 37 | Small-signal gain and iodine dissociation in a supersonic chemical oxygenâ€“iodine laser with transonic injection of iodine. Applied Physics Letters, 1999, 74, 3093-3095. | 3.3 | 7 |
| 38 | Semi-analytical and 3D CFD DPAL modeling: feasibility of supersonic operation. Proceedings of SPIE, 2014, , . | 0.8 | 7 |
| 39 | General model of DPAL output power and beam quality dependence on pump beam parameters: experimental and theoretical studies. Journal of the Optical Society of America B: Optical Physics, 2018, 35, 3134. | 2.1 | 7 |
| 40 | Comparison of one- and three-dimensional computational fluid dynamics models of the supersonic chemical oxygenâ€“iodine laser. Applied Physics B: Lasers and Optics, 2012, 108, 615-621. | 2.2 | 6 |
| 41 | Implications of thermal lensing and four-wave mixing on stimulated Raman scattering in an aqueous solution of sodium nitrate. Optics and Laser Technology, 2020, 127, 106169. | 4.6 | 6 |
| 42 | 3D CFD modeling of flowing-gas Rb DPALs: effects of buffer gas composition and of ionization of high lying Rb states. Journal of the Optical Society of America B: Optical Physics, 2021, 38, 3523. | 2.1 | 6 |
| 43 | Model calculations of kinetic and fluid dynamic processes in diode pumped alkali lasers. , 2013, , . | | 5 |
| 44 | Modeling of Flowing-Gas Diode-Pumped Potassium Laser With Different Pumping Geometries: Scaling Up and Controlling Beam Quality. IEEE Journal of Quantum Electronics, 2017, 53, 1-7. | 1.9 | 5 |
| 45 | Dependence of Cs atoms density and laser power on gas velocity in Cs DPAL. Optics and Laser Technology, 2019, 116, 18-21. | 4.6 | 5 |
| 46 | Gain and temperature in a slit nozzle supersonic chemical oxygen-iodine laser with transonic and supersonic injection of iodine. , 2002, 4631, 23. | | 4 |
| 47 | Parametric study of the Ben-Gurion University efficient chemical oxygen-iodine laser. , 2004, , . | | 4 |
| 48 | Computational modeling of laser-plasma interactions: Pulse self-modulation and energy transfer between intersecting laser pulses. Physical Review E, 2013, 88, 013307. | 2.1 | 4 |
| 49 | Controlling the beam quality in DPALs by changing the resonator parameters. Applied Physics B: Lasers and Optics, 2020, 126, 1. | 2.2 | 4 |
| 50 | Dynamics of the detonation products of lead azide: III. Laserâ€induced hole burning and flow visualization. Journal of Applied Physics, 1993, 74, 45-52. | 2.5 | 3 |
| 51 | The I2dissociation mechanisms in the chemical oxygen-iodine laser revisited. Journal of Chemical Physics, 2012, 136, 244307. | 3.0 | 3 |
| 52 | Improving the beam quality of DPALs by refractive index gradients induced by the pump beam in the heated gain medium: experimental verification of the theoretical prediction. Journal of the Optical Society of America B: Optical Physics, 2021, 38, 550. | 2.1 | 3 |
| 53 | Supersonic COIL with iodine injection in transonic and supersonic sections of the nozzle. , 2001, , . | | 2 |
| 54 | Analysis of lasing in chemical oxygen-iodine lasers with unstable resonators using a geometric-optics model. Applied Optics, 2009, 48, 2542. | 2.1 | 2 |

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| 55 | Modeling of static and flowing-gas diode pumped alkali lasers. Proceedings of SPIE, 2012, , . | 0.8 | 2 |
| 56 | Optical extraction efficiency in gas-flow lasers. Optics Letters, 1995, 20, 1480. | 3.3 | 1 |
| 57 | Recent studies of Ben-Gurion Univ. high efficiency supersonic chemical oxygen-iodine laser. , 2005, , . | | 1 |
| 58 | Diagnostic Studies of Ben-Gurion University High Efficiency Supersonic COIL. , 2005, , . | | 1 |
| 59 | Analysis of lasing in COILs with positive and negative branch unstable resonators using a simple geometrical-optics model. Proceedings of SPIE, 2008, , . | 0.8 | 1 |
| 60 | Theoretical studies of the feasibility of supersonic DPALs. Proceedings of SPIE, 2014, , . | 0.8 | 1 |
| 61 | Supersonic diode pumped alkali lasers: Computational fluid dynamics modeling. Proceedings of SPIE, 2015, , . | 0.8 | 1 |
| 62 | Modeling of static and flowing-gas diode pumped alkali lasers. , 2016, , . | | 1 |
| 63 | 3D CFD modeling of flowing-gas DPALs with different pumping geometries and various flow velocities. Proceedings of SPIE, 2017, , . | 0.8 | 1 |
| 64 | Modeling of the gain, temperature, and iodine dissociation fraction in a supersonic chemical oxygen-iodine laser. , 2002, , . | | 1 |
| 65 | <title>Modeling of high-pressure O2(1^) generators for chemical oxygen-iodine lasers</title>. , 1993, , . | | 0 |
| 66 | <title>Effect of mixing on iodine dissociation, population inversion and lasing in chemical oxygen-iodine lasers</title>. , 1993, , . | | 0 |
| 67 | Experimental study of a small scale COIL using a jet type generator of singlet oxygen. , 1997, 3092, 690. | | 0 |
| 68 | Analysis of lasing in COILs with wide aperture of the mirrors in the resonator. , 1997, , . | | 0 |
| 69 | Parametric studies of a small-scale chemical oxygen-iodine laser/jet generator system: recent achievements. , 1998, 3268, 146. | | 0 |
| 70 | Chemical oxygen-iodine laser investigations in Israel. , 1998, 3574, 273. | | 0 |
| 71 | Iodine dissociation in supersonic COILs with different schemes of iodine mixing. , 2001, , . | | 0 |
| 72 | <title>Current status of chemical oxygen-iodine laser research</title>. , 2001, , . | | 0 |

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| 73 | A computational fluid dynamics simulation of a high pressure ejector COIL and comparison to experiments. , 2008, , . | | 0 |
| 74 | <title>Lasing in supersonic chemical oxygen-iodine lasers: recent modeling and comparison with experiment</title>. , 2010, , . | | 0 |
| 75 | <title>A historical overview on the mechanism of the COIL kinetics</title>. Proceedings of SPIE, 2010, , . | 0.8 | 0 |
| 76 | Modeling of the Gain and the Power in Chemical Oxygen-Iodine Lasers. , 2010, , . | | 0 |
| 77 | I2 Dissociation Mechanisms In the Chemical Oxygen-Iodine Laser Revisited Using Three- And One-Dimensional Computational Fluid Dynamics Modeling. , 2012, , . | | 0 |
| 78 | Comparison of semi-analytical to CFD model calculations and to experimental results of subsonic flowing-gas and static DPALs. , 2014, , . | | 0 |
| 79 | Structure, dynamics, and light localization in self-induced plasma photonic lattices. Physical Review A, 2014, 89, . | 2.5 | 0 |
| 80 | Modeling of pulsed K DPAL taking into account the spatial variation of the pump and laser intensities in the transverse direction. , 2015, , . | | 0 |
| 81 | Semi-analytical and CFD model calculations of subsonic flowing-gas DPALs and their comparison to experimental results. Proceedings of SPIE, 2015, , . | 0.8 | 0 |
| 82 | 3D CFD modeling of subsonic and transonic flowing-gas DPALs with different pumping geometries. Proceedings of SPIE, 2015, , . | 0.8 | 0 |
| 83 | Experimental and theoretical study of the performance of optically pumped cesium vapor laser as a function of the pump-to-laser beam overlap. Proceedings of SPIE, 2016, , . | 0.8 | 0 |
| 84 | Optically pumped Cs vapor lasers: pump-to-laser beam overlap optimization. Proceedings of SPIE, 2017, , . | 0.8 | 0 |
| 85 | Modeling of K and Rb DPALs. , 2021, , . | | 0 |
| 86 | Experimental studies and modeling of static Cs DPALs: dependence of the power and beam shape on different parameters. , 2017, , . | | 0 |
| 87 | Three-dimensional simulation of beam propagation and heat transfer in static gas Cs DPALs using wave optics and fluid dynamics models. , 2017, , . | | 0 |
| 88 | Modeling of multi-transversal mode lasing in static alkali vapor lasers. , 2017, , . | | 0 |
| 89 | Scaling up and controlling beam quality of flowing-gas diode pumped potassium laser with different pumping geometries: 3D CFD modeling. , 2017, , . | | 0 |
| 90 | Parametric study of static and flowing-gas Cs DPAL. , 2018, , . | | 0 |

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| 91 | Parametric study of the performance and beam quality of cesium DPAL: experiment and modelling. , 2019, , . | | 0 |
| 92 | Measuring and modelling the beam quality in cesium DPALs. , 2019, , . | | 0 |