

LIST OF PUBLICATIONS

A. PAPERS PUBLISHED IN PEER-REVIEW JOURNALS

81. N. T. Vasile, N. Pavel, "Multi-point laser-induced ignition of air-methane mixtures by a high peak-power passively Q-switched Nd:YAG/Cr⁴⁺:YAG laser," *Opt. & Laser Techn.* **141**, 107169 (2021).
80. C. A. Brandus, M. Greculeasa, A. Broasca, F. Voicu, L. Gheorghe, and N. Pavel, "Diode-pumped bifunctional Nd:LGSB laser passively Q-switched by a Cr⁴⁺:YAG saturable absorber," *Opt. Mater. Express* **11**(3), 685-694 (2021).
79. A. Broasca, M. Greculeasa, F. Voicu, S. Hau, G. Croitoru, C. Gheorghe, N. Pavel, L. Gheorghe, "Efficient near-infrared laser emission and nonlinear optical properties of a newly developed Yb:LYSB laser crystal," *J. Alloys & Comp.* **844**, 156143 (2020).
78. M. Greculeasa, A. Broasca, F. Voicu, S. Hau, G. Croitoru, G. Stanciu, C. Gheorghe, N. Pavel, L. Gheorghe, "Bifunctional La_xNd_yGd_zSc_{4-x-y-z}(BO₃)₄ crystal: Czochralski growth, linear and nonlinear optical properties, and near-infrared laser emission performances," *Opt. & Laser Techn.* **131**, 106433 (2020).
77. R. P. Yavetskiya, A. G. Doroshenko, S. V. Parkhomenko, I. O. Vorona, A. V. Tolmachev, D. Yu. Kosyanov, A. A. Vornovskikh, A. M. Zakharenko, V. Yu. Mayoroc, L. Gheorghe, G. Croitoru, N. Pavel, V. V. Multian, and V. Ya. Gayvoronsky, "Microstructure evolution during reactive sintering of Y₃Al₅O₁₂:Nd³⁺ transparent ceramics: Influence of green body annealing," *J. Eur. Ceram. Soc.* **39**(13), 3867-3875 (2019).
76. P. Ribes-Pleguezuelo, N. Pavel, E. Beckert, C. Damm, A. Bodemann, O. V. Grigore, G. Croitoru, C. A. Brandus, N. T. Vasile, R. Eberhardt, and A. Tünnermann, "Assembly process and optical performances for a golden laser spark-plug device," *Opt. Eng.* **58**(6), 065101 (2019).
75. N. Pavel, R. Chiriac, A. Birtas, F. Draghici, and M. Dinca, "On the improvement by laser ignition of the performances of a passenger car gasoline engine," *Opt. Express* **27**(8), A385-A396 (2019).
74. G. Croitoru (Salamu) and N. Pavel, "Passive Q-Switching by Cr⁴⁺:YAG Saturable Absorber of Buried Depressed-Cladding Waveguides Obtained in Nd-Doped Media by Femtosecond Laser Beam Writing," *Materials* **11**(9), 1689 (2018).
73. N. Pavel, M. Bärwinkel, P. Heinz, D. Brüggemann, G. Dearden, G. Croitoru, O. V. Grigore, "Laser Ignition - Spark Plug Development and Application in Reciprocating Engines," *Prog. Quantum Electron.* **58**, 1-32 (2018).
72. G. Croitoru (Salamu), F. Jipa, and N. Pavel, "Passive Q-switch laser operation of circular, buried depressed-cladding waveguides realized by direct fs-laser beam writing in Nd:YAG/Cr⁴⁺:YAG composite media," *Opt. Mat. Express* **7**(7), 2496-2504 (2017).
71. O. V. Grigore, G. Croitoru, T. Dascalu, N. Pavel, "Diode-laser edge-pumped Nd:YAG/YAG lens-shaped composite laser," *Opt. & Laser Techn.* **94**, 86-89 (2017).
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69. F. Khaled, P. Loiseau, F. Voicu, A. Achim, S. Hau, C. Gheorghe, G. Croitoru, N. Pavel, L. Gheorghe, G. Aka, "Spectroscopic properties and laser performances of Yb:LGSB nonlinear optical crystal," *J. Alloys & Comp.* **688** (Part A), 510-517 (2016).

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67. G. Salamu, F. Jipa, M. Zamfirescu, and N. Pavel, "Watt-Level Output Power Operation from Diode-Laser Pumped Circular Buried Depressed-Cladding Waveguides Inscribed in Nd:YAG by Direct Femtosecond-Laser Writing," *IEEE Photonics Journal* **8**(1), art. 1500209 (2016).
66. N. Pavel, T. Dascalu, G. Salamu, M. Dinca, N. Boicea, and A. Birtas, "Ignition of an automobile engine by high-peak power Nd:YAG/Cr⁴⁺:YAG laser-spark devices," *Opt. Express* **23**(26), 33028-33037 (2015).
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56. G. Salamu, E. Osiac, C. Dascalu, N. Pavel, and T. Dascalu, "Simultaneous Dual-Wavelength Operation at 1.06 and 1.34 μm in Nd-vanadate Laser Crystals," *Laser Physics* **22** (5), 866-871 (2012).
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53. G. Salamu, O. Sandu, F. Voicu, M. Dejanu, D. Popa, S. Parlac, C. Ticos, N. Pavel, and T. Dascalu, "Study of Flame Development in 12% Methane-Air Mixture Ignited by Laser," *Optoelectronics and Advanced Materials - Rapid Communications* **5** (11), 1166-1169 (2011).
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B. PROCEEDINGS OF INTERNATIONAL CONFERENCES

(Presentations at International Meetings published in extended version)

- 51/C122. A. Birtas, N. Boicea, G. Croitoru, M. Dinca, N. Pavel, F. Draghici, R. Chiriac "On the possibility to improve petrol engine operation by laser ignition," *Energy Procedia* **157**, 1022-1028 (2019); Proceeding paper, *Technologies and Materials for Renewable Energy, Environment and Sustainability (TMREES), TMREES18*, 19-21 Sept. 2018, Athens, Greece. <https://doi.org/10.1016/j.egypro.2018.11.269>
- 50/C116. A. Birtas, N. Boicea, F. Draghici, R. Chiriac, G. Croitoru, M. Dinca, T. Dascalu and N. Pavel, "On the assessment of performance and emissions characteristics of a SI engine provided with a laser ignition system," *IOP Conf. Ser.: Mater. Sci. Eng.* **252**, art. 012071 (2017); doi:10.1088/1757-899X/252/1/012071
49. C.-A. Stanciu, T. Dascalu, G. Stanciu, N. Pavel, "Transparent Nd doped YAG ceramics," *Journal of Physics: Conference Series* **741**(1), art. 012074 (2016); 3rd International School and Conference on Optoelectronics, Photonics, Engineering and Nanostructures (Saint Petersburg OPEN 2016), 28-30 March 2016, St Petersburg, Russia; doi:10.1088/1742-6596/741/1/012074
- 48/C89. G. Salamu, F. Voicu, F. Jipa, M. Zamfirescu, T. Dascalu, and N. Pavel, "Laser emission from diode-pumped Nd:YAG cladding waveguides obtained by direct writing with a femtosecond-laser beam," *Proc. SPIE* **9135**, Laser Sources and Applications II, 91351F (May 1, 2014); doi:10.1117/12.2052250; <http://dx.doi.org/10.1117/12.2052250>
- 47/C80. G. Salamu, A. Ionescu, C. Brandus, O. Grigore, N. Pavel and T. Dascalu, "Generation of high-peak power 532-nm green pulses from composite, all-ceramics, passively Q-switched Nd:YAG/Cr⁴⁺:YAG laser," *Proc. SPIE* **8882**, ROMOPTO 2012: Tenth Conference on Optics: Micro- to Nanophotonics III, 888206 (June 10, 2013); doi:10.1117/12.2032267; <http://dx.doi.org/10.1117/12.2032267>
46. M. Tsunekane, N. Pavel, and T. Taira, "Simultaneously 3-Point Ignitable, Nd:YAG/Cr:YAG Ceramic Micro-Lasers," *The Review of Laser Engineering* **41** (2), 117-122 (2013) (in Japanese).
45. Nicolaie Pavel, Masaki Tsunekane and Takunori Taira (2011). *All-Poly-Crystalline Ceramics Nd:YAG/Cr⁴⁺:YAG Monolithic Micro-Lasers with Multiple-Beam Output*, Laser Systems for Applications, Dr Krzysztof Jakubczak (Ed.), ISBN: 978-953-307-429-0, InTech, DOI: 10.5772/24071. Available from: <http://www.intechopen.com/books/laser-systems-for-applications/all-poly-crystalline-ceramics-nd-yag-cr4-yag-monolithic-micro-lasers-with-multiple-beam-output>
44. N. Pavel, M. Tsunekane, and T. Taira, "High Peak-Power Passively Q-switched All-Ceramics Nd:YAG/Cr⁴⁺:YAG Lasers," *Proceedings SPIE* **7469**, Micro- to Nano-Photonics II - ROMOPTO 2009 Conference, August 31 - Sept. 03, 2009, Sibiu, Romania; paper 746903 (2010).
43. T. Dascalu, O. Sandu, N. Vasile, A. Leca, N. Pavel, and T. Taira, "End-Pumped Yb:KGW Laser Mode-Locked by Saturable Absorber Mirror," *Proceedings of International Conference "MODERN LASER APPLICATIONS", INDLAS, Second Edition 2008, May 20-23, 2008, Bran, Romania; J. of Optoelectron. & Adv. Mat. (JOAM) - Symposia, Vol. 1, No. 4, 658-661 (2009).*
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40. N. Pavel and V. Lupei, "High-power continuous wave Nd lasers under diode pumping directly in the ⁴F_{3/2} emitting level," *Proc. SPIE*, vol. **7007**, 700705 (2008), The First International Conference on Industrial Applications of Lasers, INDLAS 2007, May 23-25, 2007, Bran, Romania.

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