

LIST OF PUBLICATIONS

1. PAPERS PUBLISHED IN PEER-REVIEW JOURNALS

13. 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).
12. **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).
11. T. Dascalu, G. Croitoru, **O. Grigore**, N. Pavel, "High-peak power passively Q-switched Nd:YAG/Cr⁴⁺:YAG composite laser with multiple-beam output," Photonics Research, **4**(6), 267-271 (2016).
10. **O. Grigore**, O. Calborean, G. Cojocaru, R. Ungureanu, M. Mernea, M.P. Dinca, S. Avram, D.F. Mihailescu, and T. Dascalu, "High-intensity THz pulses application to protein conformational changes," Rom. Rep. Physics **67**(4), 1251-1260 (2015).
9. R. G. Ungureanu, **O. V. Grigore**, M. P. Dinca, G. V. Cojocaru, D. Ursescu, and T. Dascalu, "Multiple THz pulse generation with variable energy ratio and delay," Laser Phys. Lett. **12**(4), 045301 (2015).
8. T. Dascalu, G. Salamu, **O. Sandu**, M. Dinca, and N. Pavel, "Scaling and passively Q-switch operation of a Nd:YAG laser pumped laterally through a YAG prism," Opt. & Laser Techn. **67**, 164-168 (2015).
7. M. Mernea, O. Calborean, **O. Grigore**, T. Dascalu, and D. F. Mihailescu, "Validation of protein structural models using THz spectroscopy: a promising approach to solve three-dimensional structures," Opt. Quantum. Electron **46** (4), 505-514 (2014).
6. T. Dascalu, G. Salamu, **O. Sandu**, F. Voicu, and N. Pavel, "Novel laterally pumped by prism laser configuration for compact solid-state lasers," Laser Physics Letters **10** (5), 05580 (2013).
5. **O. Sandu**, G. Salamu, N. Pavel, T. Dascalu, D. Chuchumishev, A. Gaydardzhiev, and I. Buchvarov, "High-peak power, passively Q-switched, composite, all-poly-crystalline ceramics Nd:YAG/Cr⁴⁺:YAG lasers," Quantum Electronics **42** (3), 211-215 (2012).
4. G. Salamu, A. Ionescu, C. A. Brandus, **O. Sandu**, N. Pavel, and T. Dascalu, "High-Peak Power, Passively Q-switched, Composite, All-Poly-Crystalline Ceramics Nd:YAG/Cr⁴⁺:YAG Laser and Generation of 532-nm Green Light," Laser Physics **22** (1), 68-73 (2012).
3. G. Salamu, **O. Sandu**, F. Voicu, M. Dejanu, D. Popa, S. Parlac, C. Ticos, N. Pavel, 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).
2. G. Mogildea, M. Mogildea, I. Ion, **O. Sandu**, I. Stamatina, "Structural investigation of the graphite oxide and thermal reduced graphite oxide with terahertz spectroscopy," Optoelectronics and Advanced Materials - Rapid Communications, **5** (9), 973-976 (2011).
1. N. Pavel, T. Dascalu, G. Salamu, **O. Sandu**, A. Leca, and V. Lupei, "Q-switched Nd lasers pumped directly into the ⁴F_{3/2} emitting level," Opt. Commun., **282** (24), 4749-4754 (2009).

2. PROCEEDINGS OF INTERNATIONAL CONFERENCES

(Presentations at International Meetings published in extended version)

5. L. Sirbu, L. Ghimpu, M. Danila, R. Muller, A. Matei, F. Comanescu, A. . Ionescu, **O. Grigore**, T. Dascalu, and A. Sarua, "Porous and RF sputtering InP for portable THz-TDS in pharmaceutical and medical applications," IEEE Proceeding of Semiconductor Conference (CAS), 2013 International, 14-16 Oct. 2013, Sinaia, Romania; vol. **1**, pp. 69-72 (2013). DOI: 10.1109/SMICND.2013.6688092
4. 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>
3. M. Mernea, O. Calborean, L. Petrescu, D. Zatreanu, **O. Sandu**, T. Dascalu, and D. Mihailescu, "THz spectroscopy and molecular modeling of bovine serum albumin under various hydration conditions," Proceedings of SPIE **8306**, "Photonics, Devices and Systems V", 24 - 26 August 2011, Praga, Czech Republic, paper 83060N (2011).
2. M. Mernea, O. Calborean, D. Zatreanu, **O. Sandu**, T. Dascalu, and D. Mihailescu, "Macromolecular crowding effects studied by THz spectroscopy and molecular modeling," 8th EBSA European Biophysics Congress, 23-27 August 2011, Budapest, Hungary. European Biophysics Journal with Biophysics Letters, **40** (Supplement: 1), 112-113 (August 2011).
1. 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).

3. COMMUNICATIONS AT INTERNATIONAL CONFERENCES

(Technical Digests, manuscripts up to 3 pages)

43. N. Pavel, G. Croitoru, **O. V. Grigore**, M. Dinca, T. Dascalu, "Laser ignition - A review of laser spark plug development and achievements on engine ignition," Joint International Student Conference on Photonics & Modern Laser Application Conference 2018, ISCP-INDLAS 2018, September 3-7, 2018, Alba-Iulia, Romania; Plenary lesson; Book of abstracts ISBN 978-606-16-1001-3; pages 19-21.
42. G. Dearden, N. Pavel, M. Bärwinkel, P. Heinz, D. Brüggemann, G. Croitoru, and **O. V. Grigore**, "Laser spark plug developments for engine ignition," The 6th Laser Ignition Conference, 23-27 April 2018, Pacifico Yokohama, Yokohama, Japan, presentation LIC3-1 (invited talk).
41. N. Pavel, **O. V. Grigore**, G. Croitoru, and M. Dinca, "A high-peak power passively Q-switched Nd:YAG/Cr⁴⁺:YAG compact laser with multiple-beam output," The 6th Laser Ignition Conference, 23-27 April 2018, Pacifico Yokohama, Yokohama, Japan, presentation LICp6-1 (poster presentation).
40. G. Croitoru, **O. V. Grigore**, M. Dinca, N. Pavel, M. Bärwinkel, P. Heinz, D. Brüggemann, "Aspects of Air-Breakdown with a High-Peak Power Passively Q-Switched Nd:YAG/Cr⁴⁺:YAG Laser," The 5th Laser Ignition Conference, 20-23 June 2017, Bucharest, Romania, presentation LWA5.9 (poster presentation).
39. T. Dascalu, G. Croitoru, **O. V. Grigore**, and N. Pavel, "Multiple-Beam Output High-Peak Power Nd:YAG/Cr⁴⁺:YAG Laser for Laser Ignition," International Conference on Space Optics, ICSO 2016, 18-21 Oct. 2016, Biarritz, France; presentation 254 (poster presentation).
38. **O. V. Grigore**, G. Croitoru, T. Dascalu, M. Dinca, N. Pavel, "Edge-pumped Nd:YAG/YAG lens-shaped composite laser," 7th EPS-QEOD EUROPHOTON CONFERENCE, Solid State, Fibre, and Waveguide Coherent Light Sources, 21-26 August, 2016, Vienna, Austria; presentation PO-2.1 (poster presentation).

37. G. Croitoru (Salamu), **O. V. Grigore**, T. Dascalu, and N. Pavel, "Passively Q-switched Nd:YAG/Cr⁴⁺:YAG laser with multiple-beam output," The 4th Laser Ignition Conference, 17-20 May 2016, Pacifico Yokohama, Yokohama, Japan, presentation LICp-1 (poster presentation). (page 101 <http://opicon.jp/wp-content/uploads/2016/05/OPIC2016FinalProgram.pdf>)
36. G. Croitoru (Salamu), **O. V. Grigore**, T. Dascalu, and N. Pavel, "Passively Q-switched Nd:YAG/Cr⁴⁺:YAG laser with multiple-beam output," The 4th Laser Ignition Conference, 17-20 May 2015, Pacifico Yokohama, Yokohama, Japan, presentation LICp-1 (poster presentation).
35. **O. Grigore**, R. Ungureanu, G. Cojocaru, R. Banici, M.P. Dinca, M. Mernea, S. Avram, D.F. Mihailescu, and T. Dascalu, "Method for Generation Multiple High-Intensity THz Pulses within 1-100 ps Time Range," NATO Advanced Research Workshop on THz Diagnostics of CBRN effects and Detection of Explosives & CBRN, 3-6 November, 2015, Izmir, Turkey.(invited presentation).
34. T. Dascalu, A. Popa, **O. Grigore**, M. P. Dinca, G. Cojocaru, R. Ungureanu, D. F. Mihailescu, "High-Intensity THz Pulses: Generation and Applications," ROMOPTO 2015, 11th International Conference on Optics "Micro- to Nano-Photonics IV", September 1-4, 2015, Bucharest, Romania; presentation I.I.4 (invited presentation).
33. N. Pavel, G. Salamu, F. Voicu, **O. Grigore**, T. Dascalu, F. Jipa, and M. Zamfirescu, "Depressed-cladding waveguides inscribed in Nd:YAG and Nd:YVO₄ by femtosecond-laser writing technique. Realization and laser emission," ROMOPTO 2015, 11th International Conference on Optics "Micro- to Nano-Photonics IV", September 1-4, 2015, Bucharest, Romania; presentation I.I.7 (invited presentation).
32. G. Salamu, **O. Grigore**, T. Dascalu, and N. Pavel, "High energy, high-peak power passively Q-switched Nd:YAG/Cr⁴⁺:YAG composite ceramic laser," ROMOPTO 2015, 11th International Conference on Optics "Micro- to Nano-Photonics IV", September 1-4, 2015, Bucharest, Romania; presentation I.P.1 (poster presentation).
31. N. Pavel, G. Salamu, **O. V. Grigore**, M. Dinca, T. Dascalu, N. Boicea, and A. Birtas, "High-Peak Power Passively Q-switched Nd:YAG/Cr⁴⁺:YAG Lasers for Successful Ignition of an Automobile Engine," The 15th International Balkan Workshop on Applied Physics, July 2-4, 2015, Constanta, Romania, presentation S2-L3, Book of Abstracts, pgs. 80-81 (invited presentation).
30. T. Dascalu, A. Ionescu, G. Salamu, **O. Grigore**, M. Dinca, F. Voicu, C. Brandus, and N. Pavel, "Novel Thin Disk Lens Shaped Composite Nd:YAG/YAG Ceramic Laser," CLEO Europe - EQEC 2015 Conference, 21-25 June 2015, München, Germany, presentation CA-10.4 (oral presentation).
29. T. Dascalu, R. Ungureanu, G. Cojocaru, **O. Grigore**, R. Banici, and M. Dinca, "Multiple High-Intensity THz Generation by Consecutive Two-Color Filaments in Air," in *Frontiers in Optics 2014*, OSA Technical Digest (online) (Optical Society of America, 2014), paper LW11.5 (oral presentation). <http://www.opticsinfobase.org/abstract.cfm?URI=LS-2014-LW11.5>
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27. T. Dascalu, **O. Grigore**, M. Dinca, N. Pavel, C. Cojocaru, R. Ungureanu, and R. Banici, "Multiple THz Pulses Generated by Optical Filamentation," The 14th International Balkan Workshop on Applied Physics, July 2-4, 2014, Constanta, Romania, presentation S2-OP3, Book of Abstracts p. 112 (oral presentation).
26. **O. Grigore**, R. Ungureanu, G. Cojocaru, R. Banici, N. Pavel, and T.Dascalu, "THz Wave Generation From a Two Color Plasma Filament," IV International School and Conference on Photonics 26-30 August 2013, Belgrade, Serbia PHOTONICA '13, presentation B11; poster presentation (<http://www.photonica.ac.rs/UserFiles/ParticipantsAndTitlesContributions.pdf>).
25. N. Pavel, G. Salamu, and **O. Grigore**, "Passively Q-switched Nd:YAG/Cr⁴⁺:YAG lasers with high peak power," LPHYS'13: 22nd International Laser Physics Workshop, Prague, 15-19 July, 2013, presentation 4.1.2 (oral presentation).
24. Mernea M., **Grigore O.**, Calborean O., Pinteaa J., Dascalu T., and Mihailescu D., "THz spectroscopy and molecular modeling of bovine serum albumin solutions with different pH conditions," The Medical-Surgical Journal of Society of Physicians and Naturalists, Iasi -

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23. Mernea M., Calborean O., **Grigore O.**, Dascalu T., and Mihailescu D., “THz spectroscopy and molecular modeling of biomolecules,” The Medical-Surgical Journal of Society of Physicians and Naturalists, Iasi - Romania, Vol 117, Nr 1, Supl. 1 dedicated to the 12th National Conference of Biophysics, 13-17 June 2013, Iasi, Romania, pg. 10 (ISSN 0048-7848) – indexat IDB+.
22. T. Dascalu, G. Salamu, N. Pavel, **O. Grigore**, and F. Voicu, “Compact ‘prism-by side-pumped’ solid-state laser,” CLEO Europe - EQEC 2013 Conference, 12-16 May 2013, Munich, Germany, presentation CA-9.5 (oral presentation).
21. N. Pavel, T. Dascalu, G. Salamu, and **O. Grigore**, “Novel geometry for compact, diode-pumped solid-state lasers,” Laser Ignition Conference '13, 23-25 April 2013, Yokohama, Japan, presentation LIC4-2 (oral presentation).
20. Mernea M., **Grigore O.**, Calborean O., Pinteana J., Dascalu T., and Mihailescu D., “Protein dynamics in solutions of different pH values probed by THz spectroscopy and molecular modeling,” 1st Annual Conference of COST Action MP1204 & International Conference on Semiconductor Mid-IR Materials and Optics SMMO2013, February 27 – March 3, 2013, Warsaw, Poland, Book of Abstracts, pg. 55, poster presentation.
19. **Grigore O.**, Mernea M., Calborean O., Dascalu T., and Mihailescu D., “Alteration of protein structure and flexibility by glycation investigated by THz spectroscopy and molecular modeling,” 1st Annual Conference of COST Action MP1204 & International Conference on Semiconductor Mid-IR Materials and Optics SMMO2013, February 27 – March 3, 2013, Warsaw, Poland, Book of Abstracts, pg. 56, poster presentation (<http://www.ite.waw.pl/cost-smmo2013/pdf/BookOfAbstracts.pdf>)
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17. G. Salamu, A. Ionescu, C. Brandus, **O. Sandu**, N. Pavel, T. Dascalu, “Generation of high-peak power 532-nm green pulses from passively Q-switched, all-poly-crystalline Nd:YAG/Cr⁴⁺:YAG ceramics laser”, Micro- to Nano-Photonics III - ROMOPTO 2012, 10th International Conference on Optics, September 3-6, 2012, Bucharest, Romania, presentation I.P.5. Poster presentation.
16. Mernea M., **Sandu O.**, Calborean O., Dascalu T., and Mihailescu D., “Terahertz spectroscopy and computations of proteins in aqueous environments,” 31st European Congress on Molecular Spectroscopy, 26-31 August 2012, Cluj-Napoca, Romania, Book of Abstracts, pag. 127, Editura Napoca Star, ISBN 978-973-647-912-0, presentation O63 (oral presentation) (http://www.phys.ubbcluj.ro/eucmos2012/ba_eucmos2012_r1.pdf)
15. N. Pavel, G. Salamu, **O. Sandu**, A. Ionescu, C. Brandus, F. Voicu, and T. Dascalu, “Efficient, simultaneous dual-wavelength emission at 1.06 and 1.34 μm in Nd:GdVO₄ laser crystal,” 5th EPS-QEOD EUROPHOTON CONFERENCE, Solid State, Fibre, and Waveguide Coherent Light Sources, Stockholm, Sweden, presentation TuP.11. Poster presentation.
14. C.M. Ticos, **O. Sandu**, N. Banu, M.L. Munteanu, and A. Scurtu, “Dusty plasmas: A review of experiments and possible applications,” International Student Conference on Photonics 2012, SPIE Student Chapter, 8-11 May 2012, Sinaia, Romania. Book of abstracts, ISSN 2284-9750, p. 89; Invited presentation.
13. A. Ionescu, C.A. Brandus, **O. Sandu**, M.E. Barbanta-Patrascu, L. Tugulea, and T. Dascalu, “THz domain spectroscopy in studying supported lipid membranes,” International Student Conference on Photonics 2012, SPIE Student Chapter, 8-11 May 2012, Sinaia, Romania. Book of abstracts, ISSN 2284-9750, p. 65; Poster presentation.
12. G. Salamu, **O. Sandu**, M. Dejanu, F. Voicu, C. Ticos, D. Popa, S. Parlac, N. Pavel, and T. Dascalu, “Study of combustion process for a methane-air mixture using a microlaser system,” International Student Conference on Photonics 2012, SPIE Student Chapter, 8-11 May 2012, Sinaia, Romania. Book of abstracts, ISSN 2284-9750, p. 17; Oral presentation.
11. G. Salamu, **O. Sandu**, M. Dejanu, F. Voicu, C. Ticos, D. Popa, S. Parlac, N. Pavel, and T. Dascalu, “Investigation of laser ignition for methane-air mixture and development of a microlaser

system,” Physics Conference TIM-11, 24-27 November 2011, Timisoara, Romania; Abstract Book, ISBN 978-973-125-354-1, presentation API-O06 (pg. 125).

10. Mernea M., Calborean O., **Sandu O.**, Dascalu T., and Mihailescu D., “Bovine serum albumin structure and flexibility investigated by THz spectroscopy and molecular modeling,” Proceedings of 11th National Conference of Biophysics, 10-12 November 2011, Sibiu, Romania, ISSN 2248-0749, presentation O15 (oral presentation) pag. 23;
(http://www.prorec.ro/Sesprot/EventsPdf/Book_of_Abstracts_CNB11.pdf)
9. G. Salamu, **O. Sandu**, N. Pavel, T. Dascalu, D. Chuchumishev, A. Gaydardzhiev, and I. Buchvarov, “Passively Q-switched, Composite, All-Poly-Crystalline Ceramics Nd:YAG/Cr⁴⁺:YAG Laser,” 19th International Conference on Advanced Laser Technologies, 03 - 08 September 2011, Golden Sands, Bulgaria; in Book of Abstract, presentation O-6-LN, page 92.
8. **O. Sandu**, O. Cinteza, A. Emadi, M. Mernea, D. Mihalache, and T. Dascalu, “THz time domain spectroscopy at cellulose crystallinity degree in old woods artifacts,” 7th International Conference on Photonics, Devices and Systems, 24 – 26 August 2011, Praga, Czech Republic.
7. D. Chuchumishev, I. Buchvarov, A. Gaydardzhiev, A. Trifonov, **O. Sandu**, G. Salamu, “Sub-nanosecond, tunable between 3 μm and 3.5 μm OPO based on PPSLT, pumped by 0.5 kHz Nd:YAG laser,” International Student Workshop on Laser Applications ISWLA 2011, 31 May 31 - 04 June, 2011, Bran, Romania.
6. G. Salamu, **O. Sandu**, M. Dejanu, F. Voicu, C. Ticos, D. Popa, S. Parlac, N. Pavel, and T. Dascalu, “Study of laser ignition and flame kernel development in methane-air mixture,” International Student Workshop on Laser Applications, 2nd ISWLA 2011, May 31- June 04, 2011, Bran, Romania.
5. G. Salamu, F. Voicu, A. Leca, **O. Sandu**, N. Pavel, T. Dascalu, M. Dejanu, D. Popa, and S. Parlac, “Characteristics of methane-air combustion measured by Schlieren method,” International Student Workshop on Laser Applications ISWLA 2010, May 25-28, 2010, Bran, Romania, presentation P24.
4. A.M. Voiculescu, S. Georgescu, E. Cotoi, O. Toma, C.E. Matei, and **O. Sandu**, “The upconversion luminescence of Y₂O₃:Er:Yb and YVO₄:Er:Yb nanophosphors,” Micro- to Nano-Photonics II - ROMOPTO 2009 Conference, August 31 - Sept. 03, 2009, Sibiu, Romania, presentation III.P.2.
3. T. Dascalu, N. Pavel, N. Vasile, A. Leca, G. Salamu, and **O. Sandu**, “Passively Q-switched Nd:YAG/Cr⁴⁺:YAG Laser Operated at High Temperature,” Micro- to Nano-Photonics II - ROMOPTO 2009 Conference, August 31 - Sept. 03, 2009, Sibiu, Romania, presentation I.O.3.
2. N. Pavel, G. Salamu, **O. Sandu**, and T. Dascalu, “Passively Q-switched Cr⁴⁺:YAG/Nd-Lasers Pumped Directly into the Emitting Level,” 10th International Balkan Workshop on Applied Physics (IBWAP), July 6-8, 2009, Constanta, Romania, presentation S5-P60; Book of Abstracts, ISBN 978-973-614-507-0, pp. 199-200 (2009).
1. C. Matei, A. M. Voiculescu, S. Georgescu, E. Cotoi, O. Toma, **O. Sandu**, “Visible luminescence of Y₂O₃:Er:Yb si YVO₄:Er:Yb nanophosphors excited in infrared,” 10th International Balkan Workshop on Applied Physics (IBWAP), July 6-8, 2009, Constanta, Romania, presentation S1-P65; Book of Abstracts, ISBN 978-973-614-507-0, page 88 (2009).

PATENTS

- x. A. Birtas, N. Boicea, T. Dascalu, N. Pavel, G. Salamu, **O.-V. Grigore**, "Bujie cu laser pentru un motor cu ardere," OSIM application number A/10028/2016/ 18.05.2016, Romania; "A laser spark plug for a combustion engine," INPI - Institut National de la Propriété Industrielle, Numéro de soumission: 000347665 / 18.05.2016, France.
- x. T. Dascalu, N. Pavel, G. Salamu, **O. Grigore**, F. Voicu, M. Dinca, "Sistem laser monolitic, compozit si compact cu livrare simultana a doua fascicule laser / Compact, composite, monolithic laser system with simultaneous emission of two laser beams," Romanian patent, No. RO129307-A0, Publication date 28.03.2014; OSIM application number A-100417 / 03.05.2013. International Patent Classification: A61M-005/31; B65B-003/04.
- 1. T. Dascalu, **O. Sandu**, F. Voicu, N. Pavel, G. Salamu, M. Dinca, "Sistem Laser pentru Ignitia Motoarelor cu Ardere Interna / Laser System for Igniting the Internal Combustion Engines," Romanian patent, No. **RO126373 / 30.08.2018 BOPI 8/2018**; Application number: **a 2010 01326/13.12.2010** published in BOPI 6/2011, 30/06.2011; International Patent Classification: A61M-005/31; B65B-003/04. Derwent Primary Accession Number: 2011-Q13136.