

## **LIST OF PUBLICATIONS**

### **1. PAPERS PUBLISHED IN PEER-REVIEW JOURNALS**

78. A. Broasca, M. Greuleasa, F. Voicu, C. Gheorghe and **L. Gheorghe**, "Pure and Yb-Doped  $\text{La}_x\text{Y}_y\text{Sc}_{4-x-y}(\text{BO}_3)_4$  Crystals: A Review of Recent Advances," *Crystals* **13**(2), 169 (2023).
77. C. Gheorghe, S. Hau, **L. Gheorghe**, F. Voicu, M. Greuleasa, A. Broasca, and G. Stanciu, "RE<sup>3+</sup>-Doped  $\text{Ca}_3(\text{Nb,Ga})_5\text{O}_{12}$  and  $\text{Ca}_3(\text{Li,Nb,Ga})_5\text{O}_{12}$  Crystals (RE = Sm, Dy, and Pr): A Review of Current Achievements," *Materials* **16**(1), 269 (2023).
76. S. Hau, G. Stanciu, D. Avram, **L. Gheorghe**, C. Gheorghe, "Energy transfer and luminescent properties of  $\text{Tb}^{3+}$  and ( $\text{Tb}^{3+}$ ,  $\text{Yb}^{3+}$ ) doped CNGG phosphors," *J. Rare Earths* **40**(9), 1445-1453 (2022).
75. C. Gheorghe, S. Hau, G. Stanciu, D. Avram, A. Broasca, **L. Gheorghe**, "Novel optical temperature sensors based on the emission of the  $\text{Pr}^{3+}$  ions doped  $\text{Ca}_3(\text{M,Ga})_5\text{O}_{12}$  ( $\text{M}^{5+} = \text{Nb, Ta}$ ) garnet phosphors," *J. Alloys & Compds.* **922**, 166178 (2022).
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73. A. Broasca, M. Greuleasa, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, C. A. Brandus, N. Pavel, M. Enculescu, **L. Gheorghe**, "Growth and characterization of 3.5 at.% Nd:LGSB bifunctional crystal," *Opt. Mat.* **123**, 111832 (2022).
72. C. A. Brandus, M. Greuleasa, A. Broasca, F. Voicu, **L. Gheorghe**, and N. Pavel, "Diode-pumped bifunctional Nd:LGSB laser passively Q-switched by a  $\text{Cr}^{4+}$ :YAG saturable absorber," *Opt. Mater. Express* **11**(3), 685-694 (2021).
71. R. P. Yavetskiy, A. E. Balabanov, S. V. Parkhomenko, O. S. Kryzhanovska, A. G. Doroshenko, P. V. Mateychenko, A. V. Tolmachev, Jiang Li, Nan Jiang, **L. Gheorghe**, M. Enculescu, "Effect of starting materials and sintering temperature on microstructure and optical properties of  $\text{Y}_2\text{O}_3:\text{Yb}^{3+}$  5 at% transparent ceramics," *J. Adv. Ceram.* **10**(1), 49-61 (2021).
70. G. Stanciu, F. Voicu, C. A. Brandus, C. E. Tihon, S. Hau, C. Gheorghe, G. Croitoru, **L. Gheorghe**, M. Dumitru, "Enhancement of the laser emission efficiency of  $\text{Yb}:\text{Y}_2\text{O}_3$  ceramics via multi-step sintering method fabrication," *Opt. Mater.* **109**, 110411 (2020).
69. A. Broasca, M. Greuleasa, 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).
68. M. Greuleasa, A. Broasca, F. Voicu, S. Hau, G. Croitoru, G. Stanciu, C. Gheorghe, N. Pavel, **L. Gheorghe**, "Bifunctional  $\text{La}_x\text{Nd}_y\text{Gd}_z\text{Sc}_{4-x-y-z}(\text{BO}_3)_4$  crystal: Czochralski growth, linear and nonlinear optical properties, and near-infrared laser emission performances," *Opt. & Laser Techn.* **131**, 106433 (2020).
67. **L. Gheorghe**, A. Broasca, M. Greuleasa, F. Voicu, G. Stanciu, S. Hau, G. Croitoru, C. A. Brandus, C. Gheorghe, F. Khaled, P. Loiseau, G. Aka, "Czochralski-grown  $\text{La}_x\text{Gd}_y\text{R}_z\text{Sc}_{4-x-y-z}(\text{BO}_3)_4$  (R = Yb, Nd) crystals - A review of recent developments," *Opt. Mat. X* **7**, 100052 (2020).
66. A. G. Doroshenko, R. P. Yavetskiy, S. V. Parkhomenko, I. O. Vorona, O. S. Kryzhanovska, P. V. Mateychenko, A. V. Tolmachev, E. A. Vovk, V. A. Bovda, G. Croitoru, **L. Gheorghe**, "Effect of the sintering temperature on the microstructure and optical properties of YAG:Cr,Mg ceramics," *Opt. Mater.* **98**, 109505 (2019).
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  62. S. Hau, C. Gheorghe, **L. Gheorghe**, F. Voicu, M. Greculeasa, G. Stanciu, A. Broasca, M. Enculescu, "Spectroscopic investigations of  $\text{Pr}^{3+}$  ions doped CNGG and CLNGG single crystals," *J. Alloy. Compd.* **799**, 288-301 (2019).
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## **2. PROCEEDINGS OF INTERNATIONAL CONFERENCES**

(Presentations at International Meetings published in extended version)

19. I. O. Vorona, R. P. Yavetskiy, A. G. Doroshenko, S. V. Parkhomenko, A. V. Tolmachev, **L. Gheorghe**, M. Greculeasa, C. Gheorghe, S. Hau, C. Brandus, and G. Croitoru, "Nd<sup>3+</sup>:YAG Ceramic Materials with Efficient Laser Emission under Diode-Laser Pumping," in *Laser Ignition Conference 2017*, OSA Technical Digest (online) (Optical Society of America, 2017), paper LWA5.4 (<https://doi.org/10.1364/LIC.2017.LWA5.4>).
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### **3. COMMUNICATIONS AT INTERNATIONAL CONFERENCES**

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125. G. Stanciu, F. Voicu, C. A. Brandus, C. E. Tihon, S. Hau, C. Gheorghe, G. Croitoru, **L. Gheorghe**, N. Pavel, "Rare-earths doped  $\text{Y}_2\text{O}_3$  laser materials," International Conference on Crystal Growth and Epitaxy - ICCGE-20, 30 July - 04 August 2023, Naples, Italy; (poster presentation PS 2 - P30).

124. C. Gheorghe, S. Hau, A. Broasca, M. Greculeasa, F. Voicu, M. Enculescu, **L. Gheorghe**, "Ca<sub>3</sub>(Ta,Ga)<sub>5</sub>O<sub>12</sub>:Pr<sup>3+</sup> as potential laser crystal emitting in the blue and red spectral domains," International Conference on Crystal Growth and Epitaxy - ICCGE-20, 30 July - 04 August 2023, Naples, Italy; (poster presentation PS 3 - P15).
123. A. Broasca, M. Greculeasa, F. Voicu, S. Hau, G. Stanciu, C. Gheorghe, G. Croitoru, N. Pavel, **L. Gheorghe**, "Growth and optical properties of Nd:LYSB as a new laser and nonlinear optical borate crystal," International Conference on Crystal Growth and Epitaxy - ICCGE-20, 30 July - 04 August 2023, Naples, Italy; (oral presentation Optical Crystals 4 - O3).
122. M. Greculeasa, A. Broasca, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, G. Croitoru, N. Pavel, **L. Gheorghe**, "Development of LYSB and Yb-doped LYSB crystals as new candidates for the next generation of nonlinear optical and/or laser crystals," International Conference on Crystal Growth and Epitaxy - ICCGE-20, 30 July - 04 August 2023, Naples, Italy; (oral presentation Optical Crystals 6 - O4).
121. G. Croitoru, I. Anghel, F.-M. Voicu, M. Greculeasa, A. Broasca, **L.-M. Gheorghe**, N. Pavel, "Buried Depressed-Cladding Waveguides Fabricated in RE<sup>3+</sup>:CLNGG Laser Crystals using Direct Laser Writing Technique," 2023 Conference on Lasers and Electro-Optics/Europe - European Quantum Electronics Conferences (CLEO@/Europe-EQEC 2023), 26-30 June 2023, presentation CA-P.4 (poster presentation ); doi: 10.1109/CLEO/Europe-EQEC57999.2023.10232516.
120. **L. M. Gheorghe**, A. Broasca, M. Greculeasa, F. Voicu, G. Croitoru, S. Hau, C. Gheorghe, N. Pavel, "Yb- and Nd-doped La<sub>x</sub>Gd<sub>y</sub>Sc<sub>4-x-y</sub>(BO<sub>3</sub>)<sub>4</sub> (LGSB) as new high performance near-infrared laser crystals," The 9th Tiny Integrated Laser and Laser Ignition Conference 2022, 19-21 April 2023, Pacifico Yokohama, Yokohama, Japan, presentation TILA-LICp-01 (poster presentation).
119. G. Stanciu, F. Voicu, C. A. Brandus, C. E. Tihon, S. Hau, C. Gheorghe, G. Croitoru, **L. M. Gheorghe**, N. Pavel, "RE<sup>3+</sup>:Y<sub>2</sub>O<sub>3</sub> transparent ceramic media realized via a multi-step sintering method," The 9th Tiny Integrated Laser and Laser Ignition Conference 2022, 19-21 April 2023, Pacifico Yokohama, Yokohama, Japan, presentation TILA-LICp-02 (poster presentation).
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117. **L. Gheorghe**, A. Broasca, M. Greculeasa, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, "Czochralski growth and characterization of newly developed Pr:LGSB nonlinear optical and laser crystal," 7<sup>th</sup> European Conference on Crystal Growth - ECCG7, 25-27 July 2022, Paris, France; oral presentation.
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114. A. Broasca, M. Greculeasa, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, and **L. Gheorghe**, "Growth and optical properties of the newly developed Pr:LGSB bifunctional crystal," 10th EPS-QEOD EUROPHOTON Conference, 28 Aug. - 2 Sept. 2022, Hannover, Germany; presentation TUE-P-1.8
113. M. Greculeasa, A. Broasca, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, C.A. Brandus, N. Pavel, and **L. Gheorghe**, "Development of Czochralski-grown La<sub>0.733</sub>Nd<sub>0.035</sub>Gd<sub>0.452</sub>Sc<sub>2.75</sub>(BO<sub>3</sub>)<sub>4</sub> as a new bifunctional laser and nonlinear crystal," 10th EPS-QEOD EUROPHOTON Conference, 28 Aug. - 2 Sept. 2022, Hannover, Germany; presentation TUE-P-1.9.
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  107. S. Hau, C. Gheorghe, **L. Gheorghe**, G. Stanciu, "Optical properties of  $\text{Pr}^{3+}$ -doped  $\text{Ca}_3(\text{Ta},\text{Ga})_5\text{O}_{12}$  ceramic phosphors," TIM 20-21 Physics Conference, 11 - 13 November 2021, Timisoara, Romania; poster presentation CMP-P3.
  106. A. Broasca, M. Greculeasa, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, G. Croitoru, N. Pavel, **L. Gheorghe**, "LYSB and Yb-Doped LYSB crystals: Czochralski growth, optical characterization and laser emission performances," OSA Laser Congress Virtual Event, 03 Oct. - 07 Oct. 2021; oral presentation AT1A.6.
  105. M. Greculeasa, A. Broasca, F. Voicu, S. Hau, G. Croitoru, C. Brandus, G. Stanciu, C. Gheorghe, **L. Gheorghe**, "RE-doped LGSB (RE = Nd, Yb) as new high performance near-infrared laser crystals," 2021 Conference on Lasers and Electro-Optics/Europe - European Quantum Electronics Virtual Conferences (CLEO@/Europe-EQEC 2021), 21-25 June 2021, presentation CA-P.7 (poster presentation).
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  102. C. A. Brandus, M. Greculeasa, A. Broasca, F. Voicu, **L. Gheorghe**, "Infrared and self-frequency-doubling emission characteristics of diode-pumped Nd:LGSB laser crystal," 9th EPS-QEOD Europhoton Virtual Conference, 30 August - 4 September 2020; poster presentation Tu-P1.11.
  101. A. Broasca, M. Greculeasa, F. Voicu, S. Hau, G. Croitoru, C. Gheorghe, N. Pavel, **L. Gheorghe**, "New Yb:LYSB bifunctional crystal for efficient near-infrared laser emission and self-frequency doubling conversion," 9th EPS-QEOD Europhoton Virtual Conference, 30 August - 4 September 2020; poster presentation Tu-P1.12.
  100. G. Stanciu, F. Voicu, C. A. Brandus, C. Tihon, S. Hau, C. Gheorghe, G. Croitoru, **L. Gheorghe**, "Enhancement of the laser emission efficiency of Yb: $\text{Y}_2\text{O}_3$  ceramics via multi-step sintering method fabrication," 9th EPS-QEOD Europhoton Virtual Conference, 30 August - 4 September 2020; poster presentation Tu-P1.13.
  99. **L. Gheorghe**, M. Greculeasa, A. Broasca, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, C. Brandus, G. Croitoru, N. Pavel, "Undoped, Yb- and Nd-doped LGSB Czochralski-grown nonlinear and laser crystals," Advanced Solid State Lasers Conference - ASSL 2019, 29 September 2019 - 03 October 2019, Vienna, Austria, presentation AM3A.2 (oral presentation).
  98. C. A. Brandus, A. Broasca, M. Greculeasa, **L. Gheorghe**, and T Dascalu, "Ultrashort ps-order Pulse Generation from a SESAM Mode-Locked Czochralski-Grown Nd:LGSB Laser Crystal," OSA Laser Congress, Advanced Solid State Lasers Conference - ASSL 2019, 29 September 2019 - 03 October 2019, Vienna, Austria, presentation JTU3A.45 (poster presentation).
  97. A. Broasca, **L. Gheorghe**, M. Greculeasa, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, G. Croitoru, N. Pavel, "Czochralski growth and characterization of pure and Yb-doped  $\text{La}_x\text{Y}_y\text{Sc}_{4-x}$



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  95. S. Hau, C. Gheorghe, **L. Gheorghe**, F. Voicu, M. Greculeasa, G. Stanciu, A. Broasca, M. Enculescu, “Optical properties of Pr<sup>3+</sup> ions doped garnet crystals,” Excited States of Transitions Elements Conference - ESTE 2019, 08-13 September 2019, Kudowa Zdrój, Poland (poster presentation).
  94. C. A. Brandus, C. Gheorghe, S. Hau, A. Broasca, M. Greculeasa, F. Voicu, **L. Gheorghe**, and N. Pavel, “Highly efficient laser emission from a Novel Nd:LGSB crystal,” CLEO Europe - EQEC 2019 Conference, 23-27 June 2019, München, Germany, presentation CA-P.44 (poster presentation).
  93. M. Porębski, M. Kowalczyk, **L. Gheorghe**, M. Greculeasa, A. Broasca, F. Voicu, and J. Sotor, “Passively mode-locked self-frequency doubling Yb:LGBS laser,” CLEO Europe - EQEC 2019 Conference, 23-27 June 2019, München, Germany, presentation CA-P.23 (poster presentation).
  92. **L. Gheorghe**, M. Greculeasa, A. Broasca, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, G. Croitoru, and N. Pavel, “Pure, Yb- and Nd-doped  $\text{La}_x\text{Gd}_y\text{Sc}_{4-x-y}(\text{BO}_3)_4$  Czochralski-grown nonlinear optical and laser crystals,” TIM 19 Physics Conference, 29 - 31 May 2019, Timisoara, Romania, presentation CM-I02 (invited presentation).
  91. A. Broasca, **L. Gheorghe**, M. Greculeasa, F. Voicu, and G. Stanciu, “Czochralski growth and optical properties of nonlinear  $\text{La}_x\text{Y}_y\text{Sc}_{4-x-y}(\text{BO}_3)_4$  - LYSB single crystal,” TIM 19 Physics Conference, 29 - 31 May 2019, Timisoara, Romania, presentation CM-P03 (poster presentation).
  90. F. M. Voicu, **L. Gheorghe**, M. Greculeasa, A. Broasca, C. Gheorghe, S. Hau, and G. Croitoru, “Nd<sup>3+</sup> doped  $\text{La}_x\text{Gd}_y\text{Sc}_{4-x-y}(\text{BO}_3)_4$  as bifunctional laser and nonlinear crystal,” TIM 19 Physics Conference, 29 - 31 May 2019, Timisoara, Romania, presentation CM-P06 (poster presentation).
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