

## **LIST OF PUBLICATIONS**

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

81. G. Croitoru, F. Jipa, M. Greculeasa, A. Broasca, F. Voicu, **L. Gheorghe** and N. Pavel, "Buried depressed-cladding waveguides inscribed in Nd<sup>3+</sup> and Yb<sup>3+</sup> doped CLNGG laser crystals by picosecond-laser beam writing," *Materials* **17**(8), 1758 (2024).
80. C. Gheorghe, S. Hau, **L. Gheorghe**, A. Broasca, M. Greculeasa, F. Voicu, G. Stanciu, M. Enculescu, "Growth and spectroscopic properties of Ca<sub>3</sub>(Ta,Ga)<sub>5</sub>O<sub>12</sub>Pr<sup>3+</sup> single crystal as a promising new laser material in the visible domain," *Opt. Mater.* **150**, 115286 (2024).
79. A. Broasca, M. Greculeasa, F. Voicu, S. Hau, C. Gheorghe, G. Croitoru, N. Pavel, G. Stanciu, A. Petris, P. Gheorghe, F. Albota, A. Serban, **L. Gheorghe**, "LGYSB:Nd - high-performance lasing in the near-infrared region," *J. Am. Chem. Soc.* **146**(3), 2196-2207 (2024).
78. A. Broasca, M. Greculeasa, F. Voicu, C. Gheorghe and **L. Gheorghe**, "Pure and Yb-Doped La<sub>x</sub>Y<sub>y</sub>Sc<sub>4-x-y</sub>(BO<sub>3</sub>)<sub>4</sub> Crystals: A Review of Recent Advances," *Crystals* **13**(2), 169 (2023).
77. C. Gheorghe, S. Hau, **L. Gheorghe**, F. Voicu, M. Greculeasa, A. Broasca, and G. Stanciu, "RE<sup>3+</sup>-Doped Ca<sub>3</sub>(Nb,Ga)<sub>5</sub>O<sub>12</sub> and Ca<sub>3</sub>(Li,Nb,Ga)<sub>5</sub>O<sub>12</sub> 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 Tb<sup>3+</sup> and (Tb<sup>3+</sup>, Yb<sup>3+</sup>) 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 Pr<sup>3+</sup> ions doped Ca<sub>3</sub>(M,Ga)<sub>5</sub>O<sub>12</sub> (M<sup>5+</sup> = Nb, Ta) garnet phosphors," *J. Alloys & Compds.* **922**, 166178 (2022).
74. A. Broasca, M. Greculeasa, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, **L. Gheorghe**, "Pr:LGSB as a new nonlinear optical crystal: Czochralski growth and optical characterization," *J. Alloys & Comp.* **908**, 164633 (2022).
73. A. Broasca, M. Greculeasa, 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. Greculeasa, A. Broasca, F. Voicu, **L. Gheorghe**, and N. Pavel, "Diode-pumped bifunctional Nd:LGSB laser passively Q-switched by a Cr<sup>4+</sup>: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 Y<sub>2</sub>O<sub>3</sub>:Yb<sup>3+</sup> 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 Yb:Y<sub>2</sub>O<sub>3</sub> ceramics via multi-step sintering method fabrication," *Opt. Mater.* **109**, 110411 (2020).
69. 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).
68. M. Greculeasa, A. Broasca, F. Voicu, S. Hau, G. Croitoru, G. Stanciu, C. Gheorghe, N. Pavel, **L. Gheorghe**, "Bifunctional La<sub>x</sub>Nd<sub>y</sub>Gd<sub>z</sub>Sc<sub>4-x-y-z</sub>(BO<sub>3</sub>)<sub>4</sub> crystal: Czochralski growth, linear and nonlinear optical properties, and near-infrared laser emission performances," *Opt. & Laser Techn.*

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67. **L. Gheorghe**, A. Broasca, M. Greculeasa, 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).
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  48. C.A. Brandus, **L. Gheorghe**, T. Dascalu, “Efficient laser operation at 1.06 μm in co-doped Lu<sup>3+</sup>, Nd<sup>3+</sup>:GdCa<sub>4</sub>O(BO<sub>3</sub>)<sub>3</sub> single crystal,” Opt. Mat. **42**, 376-380 (2015).
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## **2. PROCEEDINGS OF 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  $Y_2O_3$  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**, " $Ca_3(Ta,Ga)_5O_{12}:Pr^{3+}$  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).
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116. S. Hau, M. Greculeasa, A. Broasca, F. Voicu, G. Stanciu, D. Avram, M. Enculescu, **L. Gheorghe**, C. Gheorghe, " $Pr^{3+}$ -doped  $Ca_3(Ta, Ga)_5O_{12}$  single crystal as potential laser material in the visible range," 7<sup>th</sup> European Conference on Crystal Growth - ECCG7, 25-27 July 2022, Paris, France; presentation P20.
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  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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  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  $\text{Yb}:\text{Y}_2\text{O}_3$  ceramics via multi-step sintering

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  98. C. A. Brandus, A. Broasca, M. Grecaleasa, **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. Grecaleasa, F. Voicu, G. Stanciu, S. Hau, C. Gheorghe, G. Croitoru, N. Pavel, "Czochralski growth and characterization of pure and Yb-doped  $\text{La}_x\text{Y}_y\text{Sc}_{4-x-y}(\text{BO}_3)_4$  nonlinear and laser crystal," OSA Laser Congress, Advanced Solid State Lasers Conference - ASSL 2019, 29 September 2019 - 03 October 2019, Vienna, Austria, presentation JM5A.40 (poster presentation).
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  92. **L. Gheorghe**, M. Grecaleasa, 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. Grecaleasa, 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).
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