# Lista lucrărilor publicate şi mapa cu lucrări selecţionate

# Buşe Gabriel

**I. Titlul tezei de doctorat:** Studiul unor proprietăţi fizice ale cristalelor de $CaF_2$ dublu dopate cu $ErF_3$ şi $YbF_3$
Doctorand: Buşe Gabriel; Conducător ştiinţific: Prof. Dr. Irina Nicoară
(Universitatea de Vest din Timisoara – Facultatea de Fizica Iulie 2011)

## II. Lista articolelor publicate in reviste din fluxul științific internațional principal

1. **Luminescence Properties and Judd–Ofelt Analysis of Various ErF3 Concentration-Doped BaF2 Crystals**
Racu, Andrei, Stef Marius, **Buse Gabriel***, Nicoara Irina, Vizman, Daniel
Materials, July 2021, vol. 14, issue 15, p. 4221

2. **Growth and characterization of ErF3 doped BaF2 crystals**
Nicoara Irina, Stef Marius, **Buse Gabriel**, Racu Andrei
Journal of Crystal Growth, July 2020, 547:125817

3. **Spectroscopic properties of the gamma irradiated ErF3-DOPED BaF2 crystals**
Marius Stef, Irina Nicoara, Andrei Racu, **Gabriel Buse**, Daniel Vizman
Radiation Physics and Chemistry, November 2020, Volume 176, , 109024

4. **Spinodal Decomposition in Lead-free Piezoelectric BaTiO3-CaTiO3-BaZrO3 Crystals**
**Buse, G**., Xin, C., Marchet, P., Borta-Boyon, A., Pham-Thi, M., Cabane, H., Veron, E., Josse, M., Velazquez, M., Lahaye, M., Lebraud, E., Maglione, M., Veber, P.
Crystal Growth and Design 2018, *18* (10), pp 5874–5884

5. **First scintillating bolometer tests of a CLYMENE R&D on $Li_2MoO_4$ scintillators towards a large-scale double-beta decay experiment**
**G. Buşe**, A. Giuliani, P. de Marcillac, S. Marnieros, C. Nones, V. Novati, E. Olivieri, D.V. Poda, T. Redon, J.-B. Sand, P. Veber, M. Velázquez, A.S. Zolotarova
Nuclear Inst. and Methods in Physics Research, A 891 (2018) 87–91

6. **Numerical modeling of Czochralski growth of $Li_2MoO_4$ crystals for heat-scintillation cryogenic bolometers**
Carmen Stelian, MatiasVelázquez, Philippe Veber, Abdelmounaim Ahmine, Jean-Baptiste Sand, **Gabriel Buşe**, Hugues Cabane,Thierry Duffar
Journal of Crystal Growth Volume 492, 15 June 2018, Pages 6-12

7. **Growth and Characterization of Lead-free Piezoelectric Single Crystals**
Philippe Veber, Feres Benabdallah, Hairui Liu, **Gabriel Buse**, Michael Josse and Mario Maglione
Materials 2015, 8(11), 7962-7978;

8. **Spectroscopic properties of newly flux grown and highly $Yb^{3+}$ -doped cubic $RE_2O_3$ (RE = Y, Gd, Lu) laser crystals**
Matias Velázquez, Philippe Veber, **Gabriel Buşe**, Yannick Petit, Philippe Goldner, Véronique Jubera, Daniel Rytz, Anaël Jaffres, Mark Peltz, Volker Wesemann, Patrick Aschehough, Gérard Aka
Optical Materials, Elsevier, 2015, 39, pp.258-264

9. **Laser demonstration with highly-doped Yb:GdO and Yb:YO crystals grown by an original flux method**
Frederic Druon, Matias Velazquez, Philippe Veber, Sylvie Janicot, Oudomsack Viraphong, **Gabriel Buse**, Marwan Abdou Ahmed, Thomas Graf, Daniel Rytz, and Patrick Georges
Optics Letters Vol. 38, No. 20 / October 15, 2013, 4146

10. **Influence of $Yb^{3+}$ ions on the optical properties of double-doped Er,Yb: $CaF_2$ crystals**
**G. Buşe**, E. Preda, M. Ştef, I. Nicoară
Physica Scripta, Volume 83, Number 2, 025604, (2011)

11. **Concentration dependence of Judd-Ofelt parameters of $Er^{3+}$ ions in $CaF_2$ crystals**
E. Preda, M. Stef, **G. Buse**, A. Pruna, I. Nicoara
Physica Scripta, Volume 79, Number 3, 035304, (2009)

12. **Some dielectric and optical properties of $PbF_2$-codoped $CaF_2$: $YbF_3$ crystals**
M Stef, **G Buse**, A Pruna and I Nicoara
Physica Scripta, Volume T135, 014044, (2009)

## III. Lista publicațiilor apărute în lucrări ale principalelor conferințe internaționale de specialitate

**1. Effect of surface orientation on the dielectric spectra of $ErF_3$-doped $CaF_2$ crystals**
I. Nicoara, M. Munteanu, E. Preda, **G. Buse** and M. Stef
Analele Univesităţii de Vest din Timişoara, vol. 51, 2007, 32-35

**2. Influence of some impurities on the emission properties of $CaF_2$: $YbF_3$ crystals**
M Stef, I Nicoara, F Cirlan, I Para, M Velazquez, **G Buse**
AIP Conf. Proc. 1694, 030005 (2015)

**3. Dislocations in YbF3 doped BaF2 crystals**
Cirlan Florina, **Buse Gabriel**, Nicoara Irina
AIP Conference Proceedings 1694, 030005 (2015)

**4. Segregation coefficient of Yb3+ and Yb2+ ions in YbF3 doped BaF2 crystals**
Irina Nicoara, **Gabriel Buse**, and Madalin Bunoiu
AIP Conference Proceedings 1634, 111 (2014)

**5. Diode-pumped lasers using highly doped Yb:Gd2O3 and Yb:Y2O3 crystals grown by the flux method**
Frédéric Druon, Matias Velazquez, Philippe Veber, Sylvie Janicot, Oudomsack Viraphong, **Gabriel Buşe**, Marwan Abdou Ahmed, Thomas Graf, Daniel Rytz, and Patrick Georges
Optics InfoBase Conference Papers in Advanced Solid-State Lasers Congress, 27 October–1 November 2013 ISBN: 978-1-55752-982-4 (Optical Society of America, 2013), paper AW1A.1.

**6. First laser operation from diode-pumped highly doped Yb:Gd 2 O 3 and Yb:Y 2 O 3 crystals grown by flux method**
F, Druon, M. Velazquez, P. Veber, S. Janicot, O. Viraphong, **G. Buse**, M.A. Ahmed, Th. Graf, D. Rytz, P. Georges
(Conference Paper) Conference on Lasers & Electro-Optics Europe & International Quantum Electronics Conference CLEO EUROPE/IQEC, Munich, 2013, pp. 1-1.

**7. Spectroscopic properties of newly flux grown $RE_2O_3$:$Yb^{3+}$ (RE=Y,Lu) laser crystals for high-power diode-pumped systems**
**Gabriel Buse**; M. Velázquez; Philippe Veber; Véronique Jubera; Yannick Petit; Stanislav Péchev; Oudomsack Viraphong; Rodolphe Decourt; Ana"l Jaffres; Patrick Aschehoug; Gérard Aka
Proc. SPIE 8433, Laser Sources and Applications, 84331B (June 1, 2012); doi:10.1117/12.921785

**8. Influence of $Pb^{2+}$ ions on the morphology of etch pits and dislocation density of $CaF_2$:$YbF_3$ crystals**
M. Stef, F. Stef, **G. Buse**, I. Nicoara
AIP Conference Proceedings 1472 (2012) 192-197

**9. Influence of the $Er^{3+}$ Ions Concentration on the Structural Deformation in Doped $CaF_2$ Crystals**
I. Nicoara, M. Munteanu, M. Stef, E. Preda, **G. Buse**
AIP Conference Proceedings 1262 (2010) 104-107

**10. Influence of $Li^+$ and $Na^+$ ions on the dielectric spectra of $YbF_3$ doped and LiF, NaF codoped $CaF_2$ crystals**
A. Pruna, M. Stef, **G. Buse**, I. Nicoara
AIP Conference Proceedings 1131 (2009) 121-125

**11. Luminescence spectrum and Judd-Ofelt analysis of $CaF_2$:0.83 mol% $ErF_3$ crystal**
E. Preda, M. Stef, **G. Buse**, A. Pruna, F. Stef, I. Nicoara
AIP Conference Proceedings 1131 (2009) 126-130

**12. Judd-Ofelt analysis of the $Er^{3+}$ ions of double-doped $CaF_2$:($Er^{3+}$, $Yb^{3+}$) crystal**
**G. Buse**, E. Preda, M. Stef, A. Pruna, F. Stef, I. Nicoara
AIP Conference Proceedings 1131 (2009) 131-135

**13. Influence of $Li^+$ and $Na^+$ ions on the dislocations density of $YbF_3$ doped and LiF, NaF codoped $CaF_2$ crystals**
A. Pruna, M. Stef, **G. Buse**, I. Nicoara
Analele Univesităţii de Vest din Timişoara, vol. 52, 2008, 77-82

**14. Morphology of etch pits and dislocations density on (111) surface of rare-earth doped $CaF_2$ crystals**
A. Pruna, **G. Buse**, E. Preda, I. Nicoara
Analele Univesităţii de Vest din Timişoara, vol. 51, 2007, 40-43

**15, Spectroscopic properties of gamma irradiated CeF3 doped BaF2 crystals**
Marius Stef), Irina Nicoara, and **Gabriel Buse**
AIP Conference Proceedings 2218, 040002 (2020)

## IV. Lista brevetelor de invenție și a altor tipuri de proprietate industrială

**Brevet international: "(EN)** METHOD FOR PREPARING SINGLE-CRYSTAL CUBIC SESQUIOXIDES AND USES THEREOF (**FR)** PROCEDE DE PREPARATION DE SESQUIOXYDES CUBIQUES MONOCRISTALLINS ET LEURS APPLICATIONS – Patent No. 14/903,761"
Inventor: Philippe Veber, Matias Velazquez, Oudomsack Viraphong, Gabriel Buse

**Timișoara 22 noiembrie 2021** **Dr.fiz. Bușe Gabriel**