

CVA

PERSONAL INFORMATION

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Staff: **Head of The Department of Physics since 2020**

Title: **Graduate in Physics at The University of Zaragoza (1991)**

Ph.D.: **University of La Laguna (2000)**

PUBLICATIONS

1 Scientific paper. L. Aldaz-Caballero; U.R. Rodríguez-Mendoza; V. Lavín; P. Canton; A. Benayas; R. Marin. 2023. Copper Indium Sulfide Quantum Dots as Nanomanometers: Influence of Size and Composition. Advanced Sensor Research. Wiley. 2, pp.2300078. <https://doi.org/10.1002/adsr.202300078>

2 Scientific paper. J. Rybusinski; T. Fas; P. Martín-Ramos; et al; B.C. Camargo. 2023. Erbium-based multifunctional compounds as molecular microkelvin-tunable driving-sensing units. Journal of Magnetism and Magnetic Materials. Elsevier. 580, pp.170903. <https://doi.org/10.1016/j.jmmm.2023.170903>

3 Scientific paper. Teng; Marcin; Junpeng; et al; Peng. 2023. Giant Pressure-Induced Spectral Shift in Cyan-Emitting Eu²⁺-Activated Sr₈Si₄O₁₂Cl₈ Microspheres for Ultrasensitive Visual Manometry. Advanced Functional Materials. Wiley. 33-26. <https://doi.org/10.1002/adfm.202214663>

4 Scientific paper. Maja Szymczak, Marcin Runowski, Victor Lavín, Lukasz Marciniak 2023. Highly Pressure-Sensitive, Temperature Independent Luminescence Ratiometric Manometer Based on MgO:Cr³⁺ Nanoparticles. Laser & Photonics Review. Wiley. <https://doi.org/10.1002/lpor.202200801>

5 Scientific paper. T. Zheng; M. Runowski; I.R. Martín; et al; D. Peng. 2023. Mechanoluminescence and Photoluminescence Heterojunction for Superior Multimode Sensing Platform of Friction, Force, Pressure, and Temperature in Fibers and 3D-Printed

Polymers. Advanced Materials. Wiley. 35, pp.2304140.
<https://doi.org/10.1002/adma.202304140>

6 Scientific paper. Q. Zeng; M. Runowski; J. Xue; L. Luo; L. Marciniak; V. Lavín; P. Du. 2023. Pressure-Induced Remarkable Spectral Red-Shift in Mn^{2+} -Activated $\text{NaY}_9(\text{SiO}_4)_6\text{O}_2$ Red-Emitting Phosphors for High-Sensitive Optical Manometry. Advanced Science. Wiley. <https://doi.org/10.1002/advs.202308221>

7 Scientific paper. Kummara Venkata Krishnaiah; P. Venkatalakshamma; K Upendra Kumar; et al; C. Yuvaraj. 2023. Structure, morphology, photonconversion and energy transfer characteristics of $\text{Er}^{3+}/\text{Yb}^{3+}:\text{BaYF}_5$ nanocrystals synthesized by hydrothermal method for photovoltaics. Ceramics International. Elsevier. 49, pp.26879-26889. <https://doi.org/10.1016/j.ceramint.2023.05.225>

8 Scientific paper. M. Szymczak; P. Wozny; M. Runowski; M. Pieprz; V. Lavín; L. Marciniak. 2023. Temperature invariant ratiometric luminescence manometer based on Cr^{3+} ions emission. Chemical Engineering Journal. 453, pp.139632. <https://doi.org/10.1016/j.cej.2022.139632>

9 Scientific paper. N. Ramadevi; R. Praveena; V. Venkatramu; Ch. Basavapoornima; V. Lavín; B.D. Joshi; NSSV Raja Rao. 2023. Visible upconverted and NIR luminescence properties of Er^{3+} and $\text{Er}^{3+}/\text{Yb}^{3+}$ -doped $\text{Lu}_3\text{Sc}_2\text{Ga}_3\text{O}_{12}$ nanocrystals. Journal of Luminescence. Elsevier. 263, pp.120130. <https://doi.org/10.1016/j.jlumin.2023.120130>

10 Scientific paper. T. Zheng; L. Luo; P. Du; S. Lis; U.R. Rodríguez-Mendoza; V. Lavín; M. Runowski. 2022. Highly-efficient double perovskite Mn^{4+} -activated $\text{Gd}_2\text{ZnTiO}_6$ phosphors: A bifunctional optical sensing platform for luminescence thermometry and manometry. Chemical Engineering Journal. Elsevier. 446, pp.136839. <https://doi.org/10.1016/j.cej.2022.136839>

11 Scientific paper. P. Tadge; I.R. Martín; S.B. Rai; S. Sapra; T.M. Chen; V. Lavín; R.S. Yadav; S. Ray. 2022. Intense green photoluminescence and upconversion-based intrinsic optical bistability in $\text{Ho}^{3+}/\text{Yb}^{3+}$ codoped CaSc_2O_4 and upconversion in $\text{Ho}^{3+}/\text{Yb}^{3+}$ codoped CaY_2O_4 phosphors. Journal of Luminescence. Elsevier. 252, pp.119261. <https://doi.org/10.1016/j.jlumin.2022.119261>

12 Scientific paper. M.A. Hernández-Rodríguez; A. Egaña; U.R. Rodríguez-Mendoza; V. Lavín; J.E. Muñoz-Santiuste. 2022. Optical temperature sensor capabilities of the green upconverted luminescence of Er^{3+} in La_3NbO_7 ceramic powders. Crystals. MDPI. 12, pp.455. <https://doi.org/10.3390/cryst12040455>

13 Scientific paper. T. Zheng; M. Runowski; P. Rodríguez-Hernández; et al; V. Lavín. 2022. Pressure-driven Configurational Crossover between $4f^7$ and $4f^65d^1$ States – Giant Enhancement of Narrow Eu^{2+} UV-Emission Lines in SrB_4O_7 for Luminescence Manometry. *Acta Materialia*. Elsevier. 231, pp.117886. <https://doi.org/10.1016/j.actamat.2022.117886>

14 Scientific paper. T. Zheng; L. Luo; P. Du; S. Lis; U.R. Rodríguez-Mendoza; V. Lavín; I.R. Martín; M. Runowski. 2022. Pressure-triggered enormous redshift and enhanced emission in $\text{Ca}_2\text{Gd}_8\text{Si}_6\text{O}_{26}:\text{Ce}^{3+}$ phosphors: Ultrasensitive, thermally-stable and ultrafast response pressure monitoring. *Chemical Engineering Journal*. Elsevier. 443, pp.136414. <https://doi.org/10.1016/j.cej.2022.136414>

15 Scientific paper. R. Reddappa; L. Lakshmi Devi; P. Babu; I.R. Martín; V. Lavín; V. Venkatramu; U.R. Rodríguez-Mendoza; C.K. Jayasankar. 2022. Structural, morphological and photoluminescence properties of $\text{Ca}_2\text{SiO}_4:\text{Er}^{3+}$ phosphors synthesized from agro-food waste materials. *Ceramics International*. Elsevier. 48, pp.37013-37019. <https://doi.org/10.1016/j.ceramint.2022.08.271>

16 Scientific paper. T. Zheng; M. Sójka; P. Wozny; et al; M. Runowski. 2022. Supersensitive Ratiometric Thermometry and Manometry Based on Dual-Emitting Centers in $\text{Eu}^{2+}/\text{Sm}^{2+}$ -Doped Strontium Tetraborate Phosphors. *Advanced Optical Materials*. Wiley-VCH GmbH. 10, pp.2201055. <https://doi.org/10.1002/adom.202201055>

17 Scientific paper. R. Praveena; N. Rama Devi; V. Venkatramu; Ch. Basavapoornima; V. Lavín; B.D. Joshi. 2022. Synthesis, structure, Stokes and anti-Stokes visible luminescence of $\text{Tm}^{3+}-\text{Yb}^{3+}$ co-doped $\text{Lu}_3\text{Sc}_2\text{Ga}_3\text{O}_{12}$ nanorods. *Journal of the Korean Physical Society*. Springer Nature. 81, pp.991-1003. <https://doi.org/10.1007/s40042-022-00623-7>

18 Scientific paper. M. Szymczak; P. Woźny; M. Runowski; M. Pieprz; V. Lavín; L. Marciniak. 2022. Temperature invariant ratiometric luminescence manometer based on Cr^{3+} ions emission. *Chemical Engineering Journal*. Elsevier.

19 Scientific paper. M.A. Hernández-Rodríguez; K. Kamada; A. Yoshikawa; J.E. Muñoz-Santiuste; A. Casasnovas-Melián; I.R. Martín; U.R. Rodríguez-Mendoza; V. Lavín. 2021. 1000 K optical ratiometric thermometer based on Er^{3+} luminescence in yttrium gallium garnet. *Journal of Alloys and Compounds*. Elsevier. <https://doi.org/10.1016/j.jallcom.2021.161188>

20 Scientific paper. N. P. Sabalisk; G. Gil-de-Cos; C. González-Silgo; et al; X. Vendrell. 2021. Role of rare earth sites and vacancies in the anomalous compression of modulated scheelite tungstates $\text{RE}_2(\text{WO}_4)_3$. *Physical Review Materials*. 5, pp.123601. <https://doi.org/10.1103/PhysRevMaterials.5.123601>

21 Scientific paper. V. Monteseuro; V. Venkatramu; U.R. Rodríguez-Mendoza; V. Lavín. 2021. Stokes and upconverted luminescence in $\text{Er}^{3+}/\text{Yb}^{3+}$ -doped $\text{Y}_3\text{Ga}_5\text{O}_{12}$ nano-garnets. Dalton Transactions. RSC. 50, pp.9512-9518.

<https://doi.org/10.1039/d1dt00976a>

22 Scientific paper. T. Zheng; M. Runowski; P. Wozny; S. Lis; V. Lavín. 2020. Huge enhancement of Sm^{2+} emission via Eu^{2+} energy transfer in SrB_4O_7 pressure sensor. Journal of Materials Chemistry C. Royal Society of Chemistry. 8, pp.4810-4817. <https://doi.org/10.1039/D0TC00463D>

23 Scientific paper. E.A. Lalla; M. Konstantinidis; I. De Souza; M.G. Daly; I.R. Martín; V. Lavín; U.R. Rodríguez-Mendoza. 2020. Judd-Ofelt parameters of RE^{3+} -doped fluorotellurite glass (Pr^{3+} , Nd^{3+} , Sm^{3+} , Tb^{3+} , Dy^{3+} , Ho^{3+} , Er^{3+} , and Tm^{3+}). Journal of Alloys and Compounds. 845, pp.156028. <https://doi.org/10.1016/j.jallcom.2020.156028>

24 Scientific paper. S. Godersky; M. Runowski; P. Wozny; V. Lavín; S. Lis. 2020. Lanthanide Upconverted Luminescence for Simultaneous Contactless Optical Thermometry and Manometry—Sensing under Extreme Conditions of Pressure and Temperature. ACS Applied Materials & Interfaces. ACS Publications. 12, pp.40475-40485. <https://doi.org/10.1021/acsami.0c09882>

25 Scientific paper. M. Runowski; P. Wozny; N. Stopikowska; V. Lavín; S. Lis. 2020. Luminescent Nanothermometer Operating at Very High Temperature Sensing up to 1000 K with Upconverting Nanoparticles ($\text{Yb}^{3+}/\text{Tm}^{3+}$). ACS Applied Materials & Interfaces. ACS Publications. 12, pp.43933-43941. <https://doi.org/10.1021/acsami.0c13011>

CONFERENCES

1 Víctor Lavín; Marcin Runowski; Akira Yoshikawa; et al; Miguel A. Hernández-Rodríguez. New strategies in rare earth based pressure and temperature optical sensors. 9th International Symposium on Optical Materials (IS-OM'9). Universidad Rovira i Virgili. 2023. Spain.

2 Víctor Lavín ; Marcin Runowski; Przemyslaw Wozny; Teng Zheng; Ulises Rodríguez-mendoza; Inocencio R. Martín. New advances in rare earth luminescent pressure and temperature sensors. 1st International Conference on Spectroscopy in Materials Science 2023 (ICOSIMS-2023). i3N Instituto de Nanoestructuras, Nanomodelação e Nanofabricação. 2023. Portugal.

3 P. Babu; I.R. Martín; V. Lavín; V. Venkatramu; U.R. Rodríguez-Mendoza; C.K. Jayasankar. Infrared to visible up-conversion in $\text{Ho}^{3+}/\text{Yb}^{3+}$ co-doped glass-ceramics containing CaF_2

nanocrystals. National Conference on Science, Technology, Applications of Rare-Earths. Sri Venkateswara University. 2022. India.

4 M. Rathaiah; P. Babu; V. Lavín; M. Kucera; C.K. Jayasankar; V. Venkatramu. Recent developments in rare-earth garnets: promising materials for photonics applications. National Conference on Science, Technology, Applications of Rare-Earths. Sri Venkateswara University. 2022. India.

5 Víctor Lavín. Optical pressure sensors based on rare earth ions. Advanced materials for a sustainable society. ICMA - Universidad de Zaragoza. 2022. Spain.

6 Víctor Lavín. Rare earth based pressure and temperature optical sensors. 1st International Conference on Advances in Materials Science (ICAMS-2021). Reva University. 2021. India.

RESEARCH PROJECTS

1 Project. PID2019-106383GB-C44, CORRELACIONES ESTRUCTURALES Y OPTICAS EN MACRO- Y NANO-MATERIALES FUNCIONALES CON IONES ACTIVOS BAJO CONDICIONES EXTREMAS DE PRESION Y/O TEMPERATURA. GENERACIÓN DE CONOCIMIENTO Y FORTALECIMIENTO CIENTÍFICO Y TECNOLÓGICO DEL SISTEMA DE I+D+i Y DE I+D+i ORIENTADA A LOS RETOS DE LA SOCIEDAD. J. González-Platas. (Universidad de La Laguna). 01/06/2020-01/06/2023. 105.000 €. Team member.