Universitatea "Ștefan cel Mare" din Suceava
Facultatea de Silvicultură

LISTA DE LUCRĂRI

PĂȘCUȚ Gheorghe Lucian

A. Lista celor mai importante 10 lucrări științifice

1. ***Gheorghe Lucian Pascut***, Lucian Cosovanu, Kristjan Haule, Khandker F Quader. Correlation-temperature phase diagram of prototypical infinite layer rare earth nickelates. *Communications Physics*, 6 (2023) 45.

2. ***Gheorghe Lucian Pascut***, Kristjan Haule. Role of orbital selectivity on crystal structures and electronic states in $BiMnO_3$ and $LaMnO_3$ perovskites. *PHYSICAL REVIEW B*, 107 (2023) 045147.

3. K. Park, ***G. L. Pascut***, G. Khanal, M. O. Yokosuk, Xianghan Xu, Bin Gao, M. J. Gutmann, A. P. Litvinchuk, V. Kiryukhin, S. -W. Cheong, D. Vanderbilt, K. Haule, and J. L. Musfeldt. Band-Mott mixing hybridizes the gap in $Fe_2Mo_3O_8$. *PHYSICAL REVIEW B*, 104 (2021) 195143.

4. T. N. Stanislavchuk, ***G. L. Pascut***, A. P. Litvinchuk, Z. Liu, Sungkyun Choi, M. J. Gutmann, B. Gao, K. Haule, V. Kiryukhin, S.-W. Cheong, and A. A. Sirenko. Spectroscopic and first principle DFT+eDMFT study of complex structural, electronic, and vibrational properties of $M_2Mo_3O_8$ (M=Fe, Mn) polar magnets. *PHYSICAL REVIEW B*, 102 (2020) 115139.

5. Can P. Koçer, Kristjan Haule, ***G. Lucian Pascut***, and Bartomeu Monserrat. Efficient lattice dynamics calculations for correlated materials with DFT+DMFT. *PHYSICAL REVIEW B*, 102 (2020) 245104.

6. Kristjan Haule, ***Gheorghe L. Pascut***. Mott Transition and Magnetism in Rare Earth Nickelates and its Fingerprint on the X-ray Scattering. *Nature: Scientific Reports*, 7 (2017) 10375.

7. Yazhong Wang, ***Gheorghe L. Pascut***, Bin Gao, Trevor A. Tyson, Kristjan Haule, Valery Kiryukhin, and Sang-Wook Cheong. Unveiling hidden ferrimagnetism and giant magnetoelectricity in polar magnet $Fe_2Mo_3O_8$. *Nature: Scientific Reports*, 5 (2015) 12268.

8. ***G. L. Pascut***, K. Haule, M. J. Gutmann, S. A. Barnett, A. Bombardi, S. Artyukhin, T. Birol, D. Vanderbilt, J. J. Yang, S.-W. Cheong, V. Kiryukhin. Dimerization-Induced Cross-Layer Quasi-Two-Dimensionality in Metallic $IrTe_2$. *PHYSICAL REVIEW LETTERS*, 112 (2014) 086402.

9. ***G. L. Pascut***, T. Birol, M. J. Gutmann, J. J. Yang, S.-W. Cheong, K. Haule, V. Kiryukhin. Series of alternating states with unpolarized and spin-polarized bands in dimerized $IrTe_2$. *PHYSICAL REVIEW B*, 90 (2014) 195122.

10. ***G. L. Pascut***, R. Coldea, P. Radaelli, A. Bombardi, G. Beutier, T. Sörgel, M. Jansen. Direct observation of charge order in triangular metallic $AgNiO_2$ by single-crystal resonant X-ray scattering. *PHYSICAL REVIEW LETTERS*, 106 (2011) 157206.

B. Teza de doctorat:

Ph.D. in Physics 2011

Thesis Title: Neutron and Resonant X-ray Scattering Studies of Low Dimensional Quantum Magnets
University: School of Physics, University of Bristol, United Kingdom. ***Adviser***: Professor Radu COLDEA
Award: Faculty of Science Commendation (attained by ~10% of all research students at University of Bristol)

C. Cărți:

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D. Articole studii în extenso, publicate în fluxul ştiinţific internaţional principal

1. Sun-Woo Kim, KangWang, Siyu Chen, Lewis J Conway, ***G Lucian Pascut***, Ion Errea, Chris J Pickard, Bartomeu Monserrat. On the dynamical stability of copper-doped lead apatite. *npj Computational Materials*, xx (accepted - 2024) xxxx.

2. Sun-Woo Kim, Lewis J. Conway, Chris J. Pickard, ***Gheorghe Lucian Pascut***, Bartomeu Monserrat. Microscopic theory of colour in lutetium hydride. *Nature Communications*, 14 (2023) 7360.

3. Poonam Yadav, Suheon Lee, ***G. L. Pascut***, Jaewook Kim, Matthias J. Gutmann, Xianghan Xu, Bin Gao, Sang-Wook Cheong, Valery Kiryukhin, Sungkyun Choi. Noncollinear magnetic order, in-plane anisotropy, and magnetoelectric coupling in the pyroelectric honeycomb antiferromagnet Ni2Mo3O8. *Phys. Rev. Research*, 5 (2023) 033099.

4. M. Poienar, M.J. Gutmann, ***G.L. Pascut***, V. Petříček, G. Stenning, P. Vlazan, P. Sfirloaga, C. Paulmann, M. Tolkiehn, P. Manuel, P. Veber. Phase Transitions and Physical Properties of the Mixed Valence Iron Phosphate Fe3(PO3OH)4(H2O)4. *Materials*, 15(22) (2022) 8059.

5. Matthias Josef Gutmann, ***Gheorghe Lucian Pascut***, Kenichi Katoh, Martin von Zimmermann, Keith Refson, Devashibhai Thakarshibhai Adroja. New Insights on the Electronic-Structural Interplay in LaPdSb and CePdSb Intermetallic Compounds. *Materials*, 15(21) (2022) 7678.

6. Evgenii V Sterkhov, Nikolay MChtchelkatchev, Elena V Mostovshchikova, Roman E Ryltsev, Sergey A Uporov, ***Gheorghe L Pascut***, Andrey V Fetisov, Svetlana G Titova. The origin of the structural transition in double-perovskite manganite PrBaMn2O6. *Journal of Alloys and Compounds*, 892 (2022) 162034.

7. Qianheng Du, Lijun Wu, Huibo Cao, Chang-Jong Kang, Christie Nelson, ***Gheorghe Lucian Pascut***, Tiglet Besara, Theo Siegrist, Kristjan Haule, Gabriel Kotliar, Igor Zaliznyak, Yimei Zhu, Cedomir Petrovic. Vacancy defect control of colossal thermopower in FeSb2. *npj QUANTUM MATERIALS*, 6 (2021) 13.

8. ***Gheorghe Lucian Pascut***, Michael Widom, Kristjan Haule, and Khandker F. Quader. First-principles study of the electronic structure and the Fermi surface in rare-earth filled skutterudites RPt4Ge12. *PHYSICAL REVIEW B*, 100 (2019) 125114.

9. Kristjan Haule and ***Gheorghe L. Pascut***. Forces for Structural Optimizations in Correlated Materials within DFT+Embedded DMFT Functional Approach. *PHYSICAL REVIEW B*, 94 (2016) 195146.

10. Tobias Mauerer, Matthias Vogt, Pin-Jui Hsu, ***Gheorghe Lucian Pascut***, Kristjan Haule, Valery Kiryukhin, Junjie Yang, Sang-Wook Cheong, Weida Wu, and Matthias Bode. Visualizing anisotropic propagation of stripe domain walls in staircaselike transitions of IrTe2. *PHYSICAL REVIEW B*, 94 (2016) 014106.

11. S. F. Blake, M. D. Watson, A. McCollam, S. Kasahara, R. D. Johnson, A. Narayanan, ***G. L. Pascut***, K. Haule, V. Kiryukhin, T. Yamashita, D. Watanabe, T. Shibauchi, Y. Matsuda, and A. I. Coldea. Fermi surface of IrTe2 in the valence-bond state as determined by quantum oscillations. *PHYSICAL REVIEW B: Rapid Communications*, 91 (2015) 121105.

12. D. Mazumdar, K. Haule, J. J. Yang, ***G. L. Pascut***, B. S. Holinsworth, K. R. O'Neal, V. Kiryukhin, S.-W. Cheong, J. L. Musfeldt. Optical evidence for bonding-antibonding splitting in IrTe2. *PHYSICAL REVIEW B: Rapid Communications*, 91 (2015) 041105.

13. ***G. L. Pascut***, T. Birol, M. J. Gutmann, J. J. Yang, S.-W. Cheong, K. Haule, V. Kiryukhin. Series of alternating states with unpolarized and spin-polarized bands in dimerized IrTe2. *PHYSICAL REVIEW B*, 90 (2014) 195122.

14. L Rednic, R Pacurariu, V Rednic, ***LG Pascut***, V Pop, M Neumann, M Coldea. X-ray photoelectron spectroscopy and magnetism of AlMnNi6 and Al7Mn3Ni30. *JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS*, 9 (2007) 568-571.

15. M Coldea, V Pop, M Neumann, O Isnard, R Pacurariu, AF Takacs, ***LG Pascut***. Effects of substitution of Sb for Pd in MnPd3 compound. *PHYSICA STATUS SOLIDI B-BASIC SOLID-STATE PHYSICS*, 243 (2006) 1914-1921.

16. M Coldea, M Neumann, SG Chiuzbaian, V Pop, ***LG Pascut***, O Isnard, AF Takacs, R Pacurariu. X-ray photoelectron spectroscopy and magnetism of Mn–Pd alloys. *Journal of Alloys and Compounds*, 417 (2006) 7-12.

17. M Coldea, V Pop, ***LG Pascut***, D Todoran, R Pacurariu. MAGNETIC BEHAVIOR OF Al2GdNi COMPOUND. *Modern Physics Letters B*, 20 (2006) 401-408.

18. M Coldea, V Pop, M Neumann, O Isnard, ***LG Pascut***. Magnetic properties of Al–Gd–Ni orthorhombic compounds. *Journal of Alloys and Compounds*, 390 (2005) 16-20.

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Șef lucrări dr. Gheorghe Lucian Păşcuț