***A N E X A 5***

**UNIVERSITATEA**
**Facultatea de Fizică**
***Domeniul de licenţă: Fizică***
***Programul de studii: Fizică***

**TABEL PRIVIND INDEPLINIREA INDICATORULUI**
„Cadrele didactice titulare* au pregătirea iniţială, sunt doctori / doctoranzi şi cercetează în domeniul în care se includ disciplinele din postul ocupat.”

| Nr. crt. | Gradul didactic, numele şi prenumele titularului vârsta / vechimea în învăţământul superior | Disciplinele din cadrul programului de studii incluse în postul didactic şi tipul activităţii desfăşurate (curs, seminar, lucrări, proiect) | Competenţa cadrului didactic titular în disciplinele din postul didactic | | | Constatări privind îndeplinirea indicatorului |
|---|---|---|---|---|---|---|
| | | | Universitatea/ facultatea/ specializarea absolvită | Specializarea la masterat/ doctorat | Numărul de cărţi, numărul de lucrări ştiinţifice, numărul de brevete în domeniul disciplinelor din postul didactic ** conform Anexelor 5.1, 5.2 etc | |
| 1. | Lect. dr. ing. Răzvan Hirian 37 / 4 | Oscilaţii şi unde | Universitatea Babeş-Bolyai / Facultatea de Fizică / Fizică Tehnologică | Fizica Corpului Solid / Doctorat in Fizică | 41 lucrări indexate ISI (C1- C10); Teza Doctorat (A) | îndeplinit |
| | | Tehnologia Materialelor | | | | |
| | | Fizica şi Tehnologia Materialelor magnetice | | | | |
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* Din statul de funcţii cumulativ al tuturor disciplinelor şi tuturor activităţilor didactice desfăşurate în cadrul programului de studii evaluat.

| | |
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| ** Se indică numărul pe următoarele tipuri de lucrări:<br>A – teza de doctorat<br>B – Cărţi şi capitole în cărţi publicate în ultimii XX ani<br>C – Lucrări indexate ISI/BDI publicate în ultimii XX ani | D – Lucrări publicate în ultimii XX ani în reviste şi volume de conferinţe cu referenţi (neindexate); pentru lucrările publicate în volume de conferinţe se selectează de maximum 20 articole.<br>E – Brevete acordate în întreaga activitate.<br>Persoanele incluse în tabelul de mai sus anexează câte o listă de lucrări după modelul de mai jos. |

***A N E X A  5 . 1***

(*Pentu următoarele cadre didactice se adaugă Anexele 5.2, 5.3. etc.*)

Universitatea Babeş-Bolyai
Facultatea de Fizica
Fizica Stării Condensate şi a Tehnologiilor Avansate
**Lect. dr. ing. Răzvan Hirian**

# L I S T A
## lucrărilor ştiinţifice în domeniul disciplinelor din postul didactic

**A. Teza de doctorat**

„Study on The Structure, Microstructure And Interphase Exchange Coupling in Hard-Soft Magnetic Nanocomposites", Faculty of Physics, Babeş-Bolyai University, Cluj-Napoca, 2017, coordonated by Prof. V. Pop

**B. Cărţi si capitole în cărţi publicate în ultimii 10 anii**

**C. Lucrări indexate ISI/BDI publicate în ultimii 10 anii**

[1]A. N. Sechel, C.-V. Prica, F. Popa, T. F. Marinca, B. V. Neamtu, and R. Hirian, "Structural Characterization of Ti/B4C/(±Ni) Composite Powders Obtained by Mechanical Milling," CRYSTALS, vol. 16, no. 1, Dec. 2025, doi: 10.3390/cryst16010022.

[2]R. Lucacel-Ciceo et al., "Composites Derived from Aluminium-Modified Biphasic Calcium-Phosphate for Bone Regeneration," BIOMIMETICS, vol. 10, no. 12, Dec. 2025, doi: 10.3390/biomimetics10120824.

[3]A. Bustihan, R. Hirian, and I. Botiz, "Reusable 3D-Printed Thermoplastic Polyurethane Honeycombs for Mechanical Energy Absorption," POLYMERS, vol. 17, no. 22, Nov. 2025, doi: 10.3390/polym17223035.

[4]E. Bender et al., "Near-Compensated Ferrimagnetism in Disordered Co0.5Mn1.5Al Half-Heusler Alloy: Experimental and Theoretical Studies," MATERIALS, vol. 18, no. 19, Sep. 2025, doi: 10.3390/ma18194449.

[5]R. Atanasov, R. Hirian, R. Bortnic, G. Souca, L. Barbu-Tudoran, and I. G. Deac, "Near-room-temperature magnetocaloric effect and magnetic properties of polycrystalline and nano-manganites La(0.7-x)HoxBa0.3MnO3 (x ≤ 0.15)," JOURNAL OF ALLOYS AND COMPOUNDS, vol. 1036, Jul. 2025, doi: 10.1016/j.jallcom.2025.181992.

[6]R. C. Gavrea, E. Surducan, R. Hirian, M. Zagrai, and V. Rednic, "Structural, Thermophysical, and Radiation Shielding Properties of Lead-Bismuth Eutectic (LBE) Synthesized by Induction Melting," CRYSTALS, vol. 15, no. 6, Jun. 2025, doi: 10.3390/cryst15060581.

[7]R. G. Hategan et al., "Magnetic, Electronic Structure and Micromagnetic Properties of Ferrimagnetic DyCo3 as a Platform for Ferrimagnetic Skyrmions," NANOMATERIALS, vol. 15, no. 8, Apr. 2025, doi: 10.3390/nano15080606.

[8]R. Atanasov, M. du Plessis, R. Hirian, R. Bortnic, G. Souca, and I. G. Deac, "Magnetocaloric effect, magnetotransport and magnetic properties of polycrystalline Pr(0.65-x)GdxSr0.35MnO3 (x ≤ 0.3) compounds," JOURNAL OF MAGNETISM AND MAGNETIC

MATERIALS, vol. 611, Dec. 2024, doi: 10.1016/j.jmmm.2024.172605.

[9]R. Atanasov et al., “Near-room-temperature magnetic properties and magnetocaloric effect of polycrystalline and nano-scale manganites Pr(0.65-x)NdxSr0.35MnO3 (x ≤ 0.35),” JOURNAL OF ALLOYS AND COMPOUNDS, vol. 1004, Nov. 2024, doi: 10.1016/j.jallcom.2024.175932.

[10]T. F. Marinca et al., “Soft magnetic composite of Ni3Fe/ZnFe2O4 type obtained by mechanical alloying/milling and spark plasma sintering,” CERAMICS INTERNATIONAL, vol. 50, no. 5, pp. 7547–7557, Mar. 2024, doi: 10.1016/j.ceramint.2023.12.061.

[11]F. Nekvapil et al., “A Novel Nanoporous Adsorbent for Pesticides Obtained from Biogenic Calcium Carbonate Derived from Waste Crab Shells,” NANOMATERIALS, vol. 13, no. 23, Dec. 2023, doi: 10.3390/nano13233042.

[12]R. Atanasov et al., “Magnetic and Magnetocaloric Properties of Nano- and Polycrystalline Bulk Manganites La0.7Ba(0.3-x)CaxMnO3 (x ≤ 0.25),” MAGNETOCHEMISTRY, vol. 9, no. 7, Jul. 2023, doi: 10.3390/magnetochemistry9070170.

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[15]A. Szatmari et al., “The Influence of Zn Substitution on Physical Properties of CoFe2O4 Nanoparticles,” NANOMATERIALS, vol. 13, no. 1, Jan. 2023, doi: 10.3390/nano13010189.

[16]R. Atanasov et al., “Magnetic and Magnetocaloric Properties of Nano- and Polycrystalline Manganites La(0.7-x)EuxBa0.3MnO3,” MATERIALS, vol. 15, no. 21, Nov. 2022, doi: 10.3390/ma15217645.

[17]R. Hirian, S. Mican, O. Isnard, and V. Pop, “The influence of short time heat treatment on the magnetic behaviour of SmCo5/α-Fe nanocomposite obtained by mechanical milling,” JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, vol. 24, no. 11–12, pp. 594–598, Dec. 2022.

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[22]T. F. Marinca et al., “Al-Permalloy (Ni71.25Fe23.75Al5) obtained by mechanical alloying. The influence of the processing parameters on structural, microstructural, thermal, and magnetic characteristics,” ADVANCED POWDER TECHNOLOGY, vol. 33, no. 7, Jul. 2022, doi: 10.1016/j.apt.2022.103642.

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Magnetoplasmonic Nanoparticles," NANOMATERIALS, vol. 12, no. 6, Mar. 2022, doi: 10.3390/nano12060942.

[24]G. Lazar et al., "Novel Drug Carrier: 5-Fluorouracil Formulation in Nanoporous Biogenic Mg-calcite from Blue Crab Shells-Proof of Concept," ACS OMEGA, vol. 6, no. 42, pp. 27781–27790, Oct. 2021, doi: 10.1021/acsomega.1c03285.

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[34]J. Kastil, R. Hirian, and O. Isnard, "Effect of pressure on the magnetic and structural properties of Fe5SiB2 compound," INTERMETALLICS, vol. 110, Jul. 2019, doi: 10.1016/j.intermet.2019.106484.

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[36]R. Hirian, S. Mican, O. Isnard, L. Barbu-Tudoran, and V. Pop, "Influence of microstructure on the interphase exchange coupling of Nd2Fe14B+10 wt%α-Fe nanocomposites obtained at different milling energies," JOURNAL OF ALLOYS AND COMPOUNDS, vol. 697, pp. 19–24, Mar. 2017, doi: 10.1016/j.jallcom.2016.12.123.

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**D. Lucrări publicate în ultimii 10 anii în reviste şi volume de conferinţe cu referenţi (neindexate)**

**- Reviste**

1.

**- Selecţie cu maximum 20 lucrări în volume de conferinţe**

1.

**E. Brevete obţinute în întreaga activitate**

1.

**Data:** 13.05.2024

**Semnătura:**