A N E X A 5

UNIVERSITATEA
Facultatea de Fizică
Domeniul de licenţă: Ştiinţe Inginereşti Aplicate
Programul de studii: Fizică Tehnologică

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				
		Biorobotică				
2						
3						
4						
5						
6						

* Din statul de funcţii cumulativ al tuturor disciplinelor şi tuturor activităţilor didactice desfăşurate în cadrul programului de studii evaluat.

** Se indică numărul pe următoarele tipuri de lucrări: A – teza de doctorat B – Cărţi şi capitole în cărţi publicate în ultimii XX ani 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. E – Brevete acordate în întreaga activitate. 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.

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[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.

[13]R. Hirian et al., “3D printed magnets with custom field geometry, produced using SmCo5/Fe exchange coupled nanocomposites,” CURRENT APPLIED PHYSICS, vol. 51, pp. 39–43, Jul. 2023, doi: 10.1016/j.cap.2023.04.017.

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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.

[23]R. Bortnic et al., “New Insights into the Magnetic Properties of CoFe2O4@SiO2@Au

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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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: