

**Instituția: Universitatea din Oradea**

**Facultatea: de Științe**

**Domeniul de licență: Fizică**

**Programul de studii (Specializarea): Fizică**

**Comisia de experți evaluatori:**

**Data evaluării: 02.03.2011-04.03.2011**

**CENTRALIZATORUL DATELOR PRIVIND CERCETAREA ȘTIINȚIFICĂ DESFĂȘURATĂ ÎN UNIVERSITATE**

Nr. crt.	Teme de cercetare științifică de la obținerea autorizării provizorii, inclusiv anul care precede evaluarea externă în vederea acreditării (datele suport ale centralizatorului se prezintă în formatul electronic de raportare anuală la CNCSIS)	Modul de finanțare *	Rezultate și modalități de valorificare a cercetării		
			Valoare realizată		Lucrări, publicații, granturi, alte produse ale cercetării **
			An univ.	lei	
1.	Studiul teoretic al transportului de spin în structuri semiconductoare cu dimensionalitate redusă - director de contract. Prof. Moca Pascu Catalin	Contract CNCSIS A 780-2007, 780-2008	2007-2008	80000 lei	ISI 1 (11)
2.	Transport de spin de neechilibru și corelații în nanostructuri - director de contract Prof. Moca Pascu Cătălin, Univ. Oradea	Contract CNCSIS IDEI 672-2009-2011	2009-2011	510120 lei	ISI 4 (7-10)
3.	Proprietăți optice și de transport ale semiconducătorilor diluați magnetici – director de contract Prof. Moca Pascu Catalin	Contract C.N.C.S.I.S. AT 97/2006	2006-2007	20000 lei	ISI 4 (13-16)

4.	Feromagneți demi-metalici, posibili candidați pentru aplicații spintronice la temperaturi finite – director de contract Conf. Chioncel Liviu	Contract C.N.C.S.I.S. AT 96/2006	2006-2007	18000 lei	ISI 18 (17-34)
5.	Fenomene de transport in quantum-dot-uri, quantum-wire și nanotuburi de carbon, modelate folosind metode numerice	Plan intern			ISI 1 (12)
6.	Studiul proprietăților materialelor oxidice vitroase	Colaborare cu colectivul de cercetare de la UBB Cluj-Napoca			ISI 11 (45-47, 52-55, 58-61)
7.	Modelarea teoretică a proprietăților sistemelor supraconductoare cu temperatură critică de tranziție ridicată, modelarea numerică a structurii electronice a sistemelor puternic corelate.	Plan intern			ISI 10 (1-6, 48, 49, 56, 57)
8.	Studii de biofizică moleculară și medicală cu abordarea aspectelor de principiiile tehnicilor de voltage și patch	Plan intern			ISI 2 (50-51)
9.	Simularea Monte Carlo a creșterii tumorilor, modelarea tratamentelor radioterapeutice și studiul efectelor tratamentelor asupra comportamentului tumoral.	Colaborare cu Royal Adelaide Hospital, Australia			ISI 10 (35-44), BDI 7 (B1-B7)
<b>Rezultate – sintetic</b>				628120 lei	ISI 61, BDI 7

\* *Contract, grant, plan intern, colaborare etc.*

\*\* *Se indica numărul pe tipuri și se anexează lista acestora*

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## SITUATIA DETALIATA PRIVIND CERCETAREA ȘTIINȚIFICĂ DESFAȘURATĂ DE CĂTRE CADRELE DIDACTICE CARE PREDAU LA PROGRAMUL DE STUDIU

### Lucrări ISI

1. G. Ilonca, T.R. Yang, A.V. Pop, P. Balint, M. Bodea, **E. Macocian**, *Hall effect, magnetoresistivity and magnetic properties of MgB<sub>2</sub> thin films with AlN buffer layers* Int. J Mod. Phys. B., 22 (8), 991-996, (2008)
2. G. Ilonca, V. Toma, T.R. Yang, A.V. Pop, P. Balint, M. Bodea, **E. Macocian** *Magnetic field and temperature dependence of thermal activated dissipation in epitaxial thin films of Bi<sub>2</sub>Sr<sub>2</sub>Ca(Cu<sub>1-x</sub>Co<sub>x</sub>)<sub>2</sub>O<sub>d</sub> superconductors* Physica C, 460-462, 369-371, (2007)
3. G. Ilonca, F. Beiușeanu, V. Toma, T. Jurcuț, **E.-V. Macocian** *Transport and magnetic properties on MgB<sub>2</sub> thin films* J Optoelectron. Adv. Mat. 8 (3), 1152-1155, (2006)
4. **E.-V. Macocian**, S. Filip *Spin wave spectrum in disordered Heisenberg spin systems* J Optoelectron. Adv. Mat. 8 (3), 1098-1104, (2006)
5. G. Ilonca, F. Beiușeanu, V. Toma, T. Jurcuț, **E.-V. Macocian** *Transport phenomena in polycrystalline bulk samples of Ru<sub>1-x</sub>Sb<sub>x</sub>Sr<sub>2</sub>(Eu<sub>0.7</sub>Ce<sub>0.3</sub>)<sub>2</sub>Cu<sub>2</sub>O<sub>10-δ</sub>* J Optoelectron. Adv. Mat. 8 (3), 1132-1134, (2006)
6. **E.-V. Macocian** *Two band superconductivity in Eliashberg model for MgB<sub>2</sub>* J Optoelectron. Adv. Mat. 8 (3), 1156-1160, (2006)
7. **Moca, C.P.**, Weymann, I. and Zarand, G. (2010): Theory of frequency dependent spin current noise through quantum dots, Phys Rev B **81**, 241305-1 - 241305-6.
8. **Moca, C.P.** and Roman, A. (2010): Quantum phase transition in gapped Anderson model. A numerical renormalization group study, Phys. Rev. B **81**, 235106-1 - 235106-6.
9. **Moca C.P.**, Sheu B.L. , Samarth N., Schiffer P. and Janko B. (2009): Scaling theory of magnetoresistance and carrier localization in GaMnAs, Phys Rev. Lett. **102**, 137203-1 - 137203-4.
10. **Moca C.P.**, Zarand G., and Berciu M. (2009): Theory of optical conductivity for GaMnAs, Phys. Rev B **80**, 165202-1 - 165202-17

11. Toth, A.I., **Moca C.P.**, Legeza O. and Zarand G. (2008): Density matrix numerical renormalization group for non-Abelian symmetries, Phys. Rev. B **78**, 245109-1 – 245109-11.
12. **Moca C.P.**, Marinescu D.C. and Filip S. (2008): Spin Hall effect in a symmetric quantum well by a random Rashba field, Phys. Rev. B **77**, 193302-1 - 193302-4.
13. **Moca C.P.**, Demler E., Janko B. and Zarand G. (2008): Spin resolved spectra of Shiba multiplets from Mn impurities in MgB<sub>2</sub>, Phys. Rev. B **77**, 174516-1 – 174516-10.
14. **Moca, C.P.** and Marinescu, D.C. (2007): Spin-Hall conductivity of a spin-polarized two-dimensional electron gas with Rashba spin-orbit interaction and magnetic impurities, New Journal Of Physics, **9**, 343-1 – 343-11.
15. **Moca, C.P.** and Marinescu, D.C. (2007): Finite-size effects in a two-dimensional electron gas with Rashba spin-orbit interaction, Physical Review B **75**, 035325-1 - . 035325-4.
16. **Moca, C.P.** and Marinescu, D.C. (2006): Longitudinal and spin Hall conductance of a one-dimensional Aharonov-Bohm ring, Journal Of Physics-Condensed Matter **18**, 127-134
17. M. I. Katsnelson, V. Yu. Irhin, **L. Chioncel**, A.I. Lichtenstein, R.A. de Groot, Half-metallic ferromagnets: From band structure to many-body effects, Rev. Mod. Phys. **80**, 315 (2008).
18. **L. Chioncel**, Y. Sakuraba, E. Arrigoni, M. I. Katsnelson, M. Oogane, M. Miyazaki, T. Ando, E. Burzo, A. I. Lichtenstein Nonquasiparticle states in Co<sub>2</sub>MnSi evidenced through magnetic tunnel junction spectroscopy measurements, Physical Review Letters **100**, 086402 (2008).
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26. E. Burzo, R. Tetean, **L. Chioncel**, V. Pop, *Magnetic behavior of Co and Ni in pseudoternary boron compounds*, *JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS* 316 (2): E379-E382 SEP 2007.
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29. Yamasaki, A., **Chioncel, L.**, Lichtenstein, A. I., Andersen, O. K., *Model hamiltonian parameters for half-metallic ferromagnets NiMnSb and CrO<sub>2</sub>*, *Physical Review B* 74 (2), 024419 (2006).
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35. R. Takam, E. Bezak, G. Liu, E. Yeoh, **L. Marcu** *Peripheral photon and neutron doses from prostate cancer external beam irradiation and the risk of second primary cancers*, *Physics in medicine and Biology* 2010 (submis)

36. **L. Marcu** *Altered fractionation in radiotherapy: from radiobiological rationale to therapeutic gain*, Cancer Treatment Reviews 36(8):606-614, 2010 (IF = 5,295/2009)
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45. Ardelean, **M. Flora**, EPR investigation of the  $x\text{MnO} \cdot (100-x)[2\text{B}_2\text{O}_3 \cdot \text{MO}]$  ( $\text{MO} \rightarrow \text{CdO}, \text{SrO}$ ) glass systems, JOAM, vol. 8, no.3, June 2006, p.1114-1117
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47. Ardelean, **M. Flora** The local structure and interaction between  $\text{Mn}^{2+}$  and  $\text{Mn}^{3+}$  ions in borate glasses JOAM, vol.11, ISS.11-2009, pag.1865-1869
48. **C. Sbârciog**, R.T. Redac, I. Gr. Deac, I. Pop - *Intergranular Properties of Zr-Substituted Y123 Compounds*, Modern Physics Letters B, Vol. 20, No. 19, (2006), 1191-1198

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50. „*Altered sarcoplasmic reticulum calcium transport in the presence of the heavy metal chelator TPEN*”, Sztretye M, Almássy J, Deli T, Szentesi P, Jung C, Dienes B, **Simut CA**, Niggli E, Jona I, Csernoch L, Cell Calcium. Nov,2009;46(5-6):347-55; (PMID: [19900703](#))
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57. Yang TR, Ilonca G, **Beiuşeanu F**, Toma V, Balint P, Bodea M, Jurcut T, Transport, thermal and magnetic properties of  $Ru_{(1-x)}Sb_xSr_2(Gd_{0.7}Ce_{0.3})_2Cu_2O_{10-d}$ , JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS 310, 492-494, (2007)
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59. **M. Toderas**, I.Ardelean, EPR investigation of manganese ions in  $B_2O_3\cdot BaO$  glass matrix, J.Optoel. Ad. Mat., 9 (3), p.629-632, (2007)

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61. **M. Toderas**, S. Filip, I.Ardelean, Structural studies of the  $\text{Fe}_2\text{O}_3\text{-B}_2\text{O}_3\text{-BaO}$  glass system bz the FTIR spectroscopy, J.Optoel. Ad. Mat., 8 (3), p. 1121-1124, (2006)

**Lucrări indexate BDI**

- B1. **L. Marcu**, E. Yeoh *The emerging role of predictive assays in the management of head and neck cancer*, Austral-Asian Journal of Cancer 9(2):71-77, 2010. ISSN-0972-2556
- B2. **L. Marcu**, *Cellular bystander effects and radiation hormesis*, Analele Universitatii Oradea - Fascicula Biologie XVI / 1, pp. 66-70, 2009. Indexata Thomson si DOAJ
- B3. **L. Marcu**, E. Bezak *Radiobiological modelling of the interplay between accelerated repopulation and altered fractionation schedules in head and neck cancer*, Journal of Medical Physics 34:206-211, 2009.
- B4. **L. Marcu** *The role of scientific journals in disseminating cancer research in the 21st century* (editorial invitat), Austral-Asian Journal of Cancer 8(2) 2009. ISSN-0972-2556
- B5. R Takam, E. Bezak, E. Yeoh, **L. Marcu** *Assessment of normal tissue complications and second cancer risk following prostate cancer irradiation*, Austral-Asian Journal of Cancer 7:171-184, 2008, ISSN-0972-2556.
- B6. **L. Marcu**, I. Olver *Tirapazamine: from bench to clinical trials*, Current Clinical Pharmacology 1:71-79, 2006, ISSN: 1574-8847. Indexata EMBASE.
- B7. **L. Marcu**, T van Doorn, E. Bezak *Determination of cell cycle phase-specific  $\alpha$  parameters for squamous cell carcinomas of the head and neck*, Austral-Asian Journal of Cancer 5:157-165, 2006. ISSN-0972-2556

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