

INFORMAȚII PERSONALE BADICA Petre



 Institutul National de Cercetare Dezvoltare pentru Fizica Materialelor



Sexul M | Data nașterii 20.07.1965 | Naționalitatea Romana

EXPERIENȚA
PROFESIONALĂ

2008 -prezent Cercetator stiintific grad 1 (CS1)

Institutul National de Cercetare Dezvoltare pentru Fizica Materialelor, Atomistilor 405A, Magurele, Romania, www.infim.ro

Cercetare stiintifica: stiinta, ingineria si fizica materialelor avansate

-(i) *domeniu principal*: stiinta materialelor: *sinteza, procesare si caracterizarea materialelor* sub forma de pulberi, obiecte monocristaline, corp solid, materiale nanostructurate, filme subtiri/heterostructuri, fire/ benzi obtinute prin metode conventionale si neconventionale.

-(ii) *alte domenii*: fizica aplicata (supraconductibilitate, altele), biomateriale, arheometrie

Tipul sau sectorul de activitate Cercetare

1996-2008 CS II (2005-2008), CS III (1997-2005), CS (1996-1997)

Institutul National de Cercetare Dezvoltare pentru Fizica Materialelor, Atomistilor 405a, Magurele, Romania, www.infim.ro

Cercetare stiintifica: stiinta, ingineria si fizica materialelor avansate

Tipul sau sectorul de activitate Cercetare

1992-1993 Inginer (Cercetare)

Institutul de Cercetari Metalurgice (ICEM), Bucuresti, Romania

Ceramici pe baza de Al₂O₃ pentru conductori de nylon

Tipul sau sectorul de activitate Cercetare

EDUCAȚIE
ȘI FORMARE

1993-1996 Doctor in Stiinte Ingineresti

National Technical University of Ukraine 'Kiev Polytechnic Institute' Faculty of Physics and Engineering

Titlul Tezei de Doctorat "Obtaining by cryochemical technique and properties investigations in superconducting Bi(Pb)-Sr-Ca-Cu-O ceramics"

1987-1992 Inginer

Universitatea Politehnica Bucuresti, Facultatea de Stiinta si Ingineria Materialelor
Titlul Lucrarii de Diploma: Experimental studies and investigations about obtaining superconducting materials in Y-Ba-Cu-O system (*publicat in J. Superconductivity 8, 1995, 365*)

Vezi anexe

COMPETENTE
PERSONALE

Limba(i) maternă(e)	Romana				
Alte limbi străine cunoscute	INTELEGERE		VORBIRE		SCRIERE
	Ascultare	Citire	Participare la conversație	Discurs oral	
Engleza	Experimentat-C2	Experimentat-C2	Experimentat-C2	Experimentat-C2	Experimentat-C2
Rusa	Experimentat-C2	Experimentat-C2	Experimentat-C2	Experimentat-C2	Experimentat-C2
Germana	Independent-B1	Independent-B1	Independent-B1	Independent-B1	Independent-B1
Bulgara	Independent-B2	Independent-B2	Independent-B2	Independent-B2	Independent-B2
Japoneza	Elementar-A1	Elementar-A1	Elementar-A1	Elementar-A1	Elementar-A1
<p>Niveluri: A1/A2: Utilizator elementar - B1/B2: Utilizator independent - C1/C2: Utilizator experimentat Cadrul european comun de referință pentru limbi străine</p>					
Competențe organizaționale/manageriale	Am facut parte din grupul organizatorilor la urmatoarele conferinte stiintifice: MRS-J, IUMRS, ICCE, MRS, Japanese Applied Physics Society Meeting, Diaspora Workshop, Electroceramics, ROCAM, Advances in Nanophysics and Nanophotonics, SATF.				
Competențe dobândite la locul de muncă	-Lucrul cu echipament stiintific specializat pentru sinteza, procesarea si caracterizarea materialelor: -Sinteza pulberilor prin inghetarea rapida a aerosolilor de saruri si sublimare, aliere/macinare mecanica, procesare magneto-termica, sinterizare asistate de camp electric (spark plasma sintering, SPS), presare la cald, cuptoare conventionale si in microunde, cuptoare cu topire zonara in infrarosuu, MOCVD, depunere prin ablatie laser (PLD), depunere prin pulverizare in radio-frecventa (magnetron sputtering), utilizare de bobine cu generare de campuri magnetice inalte, manipularea lichidelor criogenice, magnetometre de tip SQUID-MPMS, PPMS, masuratori magnetice, de transport, mecanice, etc, microscopie electronica, altele.				
Competență digitală	Competent cu pachetul MSOffice si anumite programe profesionale.				

Alte competente	
A – Referent articole	Referent articole in reviste ISI: Science, Supercond Sci Technol, J Alloy Comp, Applied Surf Sci, Cr Gr Design, Phys B, Phys. C, Solid State Sciences, J. Phys Soc Jpn, JJAP, Materials Design, Current Applied Physics, Materials Science and Engineering C, IEEE Trans Appl Supercond, J. Supercond Novel Mag., Thin Solid Films, Ind Engg Chem Res, J Supercond, Mater Chem Phys, Ceram. Int, etc.
B- Evaluare Proiecte	Evaluare proiecte stiintifice -UEFISCDI, -Bulgarian National Science Foundation - fost membru al Independent Scientific Evaluation Group (ISEG), NATO (2011-2014). - l'Agence Nationale de la Recherche (Apel a Proiect Chimie, materiaux, sciences de l'ingenierie, Edition 2015), France - ICC, Tohoku University, Japan (2015, 2016)
Administrativ	Vicepresedintele (ales) al Consiliului Stiintific al Institutului National de Cercetare-Dezvoltare pentru Fizica Materialelor, Magurele, Romania (2014-2018).
Permis de conducere	B

INFORMATII SUPLIMENTARE

Publicații/brevete/carti	>210 articole (conform ISI sau Scopus) si (>30 alte articole) in reviste 'per-review', 4 brevete acordate 9 capitole de carte (2 InTech, 5 Springer, 1 Nova, 1 AGIR); 1 carte ca Editor (Springer) H19/ISI, citations (fara autocitari in ISI) >1650. >35 prezentari invitate la conferinte internationale (MRS, MRS-J, MRS-S, STAC, ICCE, M2S, JSAP, TMS, IUMRS, SATF, altele)
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- Publicații
Selectate
- Title: 'Beautiful' unconventional synthesis and processing technologies of superconductors and other materials
Author(s): **Badica P** et al
Source: SCIENCE TECHNOLOGY ADVANCED MATERIALS, Volume 12, Article Number: 013001, Published: 2011
- Title: Te and SiC co-doped MgB₂ obtained by ex-situ spark plasma sintering technique
Author(s): Aldica, G.; Popa, S.; Enculescu, M.; **Badica, P.**
Source: SCRIPTA MATERIALIA Volume: 68 Issue: 6 Pages: 428-431, Published: 2013
- Title: Enhancement of critical current density and irreversibility field by Te or TeO₂ addition to MgB₂ bulk processed by spark plasma sintering
Author(s): Aldica, G.; Popa, S.; Enculescu, M.; **Badica, P.**
Source: SCRIPTA MATERIALIA Volume: 66 Issue: 8 Pages: 570-573 Published: 2012
- Title: Significant enhancement of the critical current density for cubic BN addition into ex situ spark plasma sintered MgB₂
Authors: **P Badica** et al
Source: SUPERCONDUCTOR SCIENCE & TECHNOLOGY Volume: 27 Pages: 095013 Published: 2014
- Title: Machinable superconducting material and magnetic field concentrator/storer made of a superconducting material based on MgB₂, machinable by chip removal
Patent Number: RO130252-A2
Patent Assignee: INST NAT CERC DEZVOLTARE FIZICA MATERIALELOR
Inventor(s): Aldica G V; **Badica P**; Burdusel M; Cioca E M.
- Title: Superconductivity in the metalrich Li-Pd-B ternary boride
Author(s): Togano, K; **Badica, P**; Nakamori, Y, et al.
Source: PHYSICAL REVIEW LETTERS Volume: 93 Issue: 24 Article Number: 247004 Published: 2004
- Title: Magnetization measurements on Li₂Pd₃B superconductor
Author(s): **Badica, P**; Kondo, T; Kudo, T, et al.
Source: APPLIED PHYSICS LETTERS Volume: 85 Issue: 19 Pages: 4433-4435 Published: 2004
- Title: Growth of high-quality precipitate free thin films suitable for electronic devices: A new concept for substrates
Author(s): Endo, K; **Badica, P**; Sato, H, et al.
Source: ADVANCED MATERIALS Volume: 16 Issue: 21 Pages: 1894-+ Published: NOV 4 2004
- Title: Growth of superconducting MgB₂ films by pulsed-laser deposition using a Nd-YAG laser
Author(s): **Badica, P**; Togano, K; Awaji, S, et al.
Source: SUPERCONDUCTOR SCIENCE & TECHNOLOGY Volume: 19 Pages: 242-246 Published: FEB 2006
- Title: Toughness control of boron carbide obtained by spark plasma sintering in nitrogen atmosphere
Authors: **P. Badica** et al
Source: CERAMICS INTERNATIONAL Volume: 40 Pages 3053-3061 Published: 2014
- Title: High-temperature strength of boron carbide with Pt grain-boundary framework in situ synthesized during spark plasma sintering
Autothors: Vasylykiv O, Demirskyi D, Borodianska H, Kuncser A, **Badica P**
Source: CERAMICS INTERNATIONAL Volume: 46, Pages 9136-9144 Publicat: 2020
- Title: Growth of SrTiO₃ single crystals with a diameter of about 30 mm by the Verneuil method
Author(s): Tateno Y; Endo K; Arisawa S; Vlaicu AM; Nedelcu L; Preda N; Secu M; Iordanascu R; Kuncser AC, **Badica, P**
Source: CRYSTAL GROWTH & DESIGN, Volume: 19(2), Pages 604-612 Publicat: 2019



Proiecte

In derulare:

- Responsabil Partener PTE 5/2020
- Director ERA-M project 74/2017
- Co-director POC 37_697 no 28/01.09.2016

Incheiate:

- Responsabil Partener PED 163/2017 (Parteneriate)
- Director PN-2 214/2014 (Parteneriate)
- Director din partea Romaniei Copbil RO-Ukraine 3BM2016
- Responsabil Partener PCCE 239/2010 (contract no 9, Idei Complexe)
- Responsabil Partener PCCE C2-0006/2011 (contract no 6, Idei Complexe)
- Responsabil Partener PN 7/2012 (Parteneriate)
- Responsabil Partener Euroatom-EFDA BS-M8/2012/2013
- Director din partea Romaniei Copbil Romania-China 505/2011
- Director din partea Romaniei Copbil Romania-China 507/2011
- Director din partea Romaniei Copbil Romania-China 629/2013
- Director Grant al Academiei Romane, ANSTI B (1999)

ANEXE

Expertiza si Experienta profesionala

- 2019, 2020 (transferat 2021 datorita Covid) (14 zile / year), Visiting Prof., NIMS, Tsukuba, Japan

Granturi, burse, vizite si colaborari in cadrul unor proiecte

- 2015 (1 luna) Visiting Professor, Tohoku University

- 2011-2017, (4x14 or 2 x 7 zile/an), Visiting Scientist /Prof/Consultant, Nanyang Technological University, Singapore

-2010, (3 luni) Visiting Researcher-MANA Fellow, National Institute for Materials Science, Tsukuba, Japan

-2008-2010, Alexander von Humboldt Fellow, Mainz University, Institute of Physics, Germany

-2005-2008, NEDO Fellow, High Field Lab for Superconducting Materials, Institute for Materials Research, Tohoku Univ., Sendai, Japan

-2003-2005, Research Associate / Lecturer, Institute for Materials Research, Sendai, Japan

-2002-2003, Special Researcher-NIMS Fellow, Superconductivity Center, National Institute of Materials Science, Tsukuba, Japan

-2000-2002, JSPS post-doc Fellow, Lab of Superconducting Materials, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

-1999 (2.5 month) Visiting scholar, Davis, Dept. of Chem. Eng. & Materials Science, University of California, Davis, US

-1997-1998 (2 x 15 zile) Visiting Scholar, IUCN-Dubna, Lab. Neutron Physics "I.M. Frank", RUSSIA

-1993-1996 Ph.D. fellowship of Romania-Ukraine Partnership Program at National Technical University of Ukraine, "Kiev Polytechnic Institute" (see Education and Training).

- Guest Researcher (membru extern in proiecte nationale KAKENHI, Japonia):
2004-2006 la NeRI din cadrul AIST (Lab. of Advanced Thin Films), Tsukuba, JAPAN;
2010-2011, 2013-2014, 2015-2017, la Kanazawa Institute of Technology, JAPAN

Membru Asociatii Profesionale



- American Chemical Society,
- German Physical Society
- Japanese Applied Physics Society (fost membru)
- Cryogenic Soc. of Japan (fost membru)
- Alumni JSPS, Romania (membru fondator)
- Alumni Alexander von Humboldt, Romania
- European Society of Applied Superconductivity
- MRS (fost membru)

Notificari, selectii, premii

- Articolul Phys. Rev. Lett., 97, (2006) 017006 a fost selectat de Editori pentru coperta revistei; desemnata 'highly cited paper' (top 1% cele mai citate din respectivul domeniu, mai/iunie 2015) de catre ISI Web of Knowledge.
- Articolul Applied Physics Letters 80, 3566 (2002) a fost selectat pentru republicare in Virtual Journal of Applications of Superconductivity, May 15, 2002
- Articolul J. Phys: Conf Series, 97, (2008) 012036 a fost selectat pentru republicare de catre European News Forum organizat de IEEE Council on Superconductivity (CSC) and European Society for Applied Superconductivity
- Premiul pentru cel mai bun Poster la ASMM2D 2001, Sept. 25-28, 2001, Mangalore, India cu lucrarea: A. Sundaresan, et al, Growth of TlBa₂Ca₂Cu₃O_y superconducting thin film on CeO₂ buffered sapphire substrate.
- Medalii la targurile de inventica: ProInvent, EuroInvent, Bruxel, Varsovia, Barcelona, Geneva, altele.

Prezentarea in presa a rezultatelor cercetarii

- P. Badica et al, Potentialul folosirii materialelor pe baza de MgB₂ in aplicatiile biomedicale, Market Watch Nr. 180/15 Noiembrie – 15 Decembrie 2015 Pag. 27
- P. Badica et al, Supraconductori pentru viitor, Market Watch Nr. 168/1 Septembrie – 15 Octombrie 2014 Pag. 23.
- P. Badica, Convert The Light From The Sun By Integrating Er/Yb-CeO₂ Thin Film On The Si Solar Cells And Generate More Electric Energy, publicata online in Science Trends (<https://sciencetrends.com/convert-the-light-from-the-sun-by-integrating-er-yb-ceo2-thin-film-on-the-si-solar-cells-and-generate-more-electric-energy/>), 08.10.2018
- **P. Badica**, Bubble-Free SrTiO₃ Crystals 30 mm In Diameter By Flame-FusionGrowth Method, published online in Science Trends (<https://sciencetrends.com/bubble-free-srtio3-crystals-30-mm-in-diameter-by-flame-fusion-growth-method/>)11.04.2019

Declar ca datele din CV sunt conform cu realitatea

23 Martie 2021