curriculum vitae



Personal information

Surname(s) / First name	**Réka BARABÁS**
Address	Str. București 51/34 , 400148, Cluj Napoca, Romania
Telephone	40-264-593833/5762
Fax	40-264-590818
E-mail(s)	reka.barabas@ubbcluj.ro
Citizenship	Romanian
Nationality	Hungarian
Date of birth	01.05.1971
Gender	Female

Occupational field **Professor**

Work experience

Dates	04.01.2006-present
Occupation or position held	Professor, since December 2014 vice-dean
Main activities and responsibilities	Bioceramics, Transport phenomena, Nanomaterials
Name and address of employer	University Babes-Bolyai Cluj- Napoca (Romania), Department of Chemical Engineering and Oxide Materials Science
Type of business or sector	University
Dates	01.03.2005-31.10.2005
Occupation or position held	Scientific assistant
Main activities and responsibilities	Nanopowders in MgO-C Refractories (direction of DFG- Project)
Name and address of employer	Freiberg University of Mining and Technology (Germany), Department of Ceramic Engineering

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Type of business or sector	University
Dates	01.03.2004-28.02.2005
Occupation or position held	Scholarship for postdoctoral lecture qualification
Main activities and responsibilities	Thermal Spraying (setting into operation of the MASTER JET type flame spray gun); Geopolymers/Biocermics
Name and address of employer	Freiberg University of Mining and Technology (Germany), Department of Ceramic Engineering
Type of business or sector	University
Dates	01.10.2000-30.09.2002
Occupation or position held	Postdoctoral scholarship
Main activities and responsibilities	Characterization of biofilter materials, Direction of heat transfer laboratories
Name and address of employer	Freiberg University of Mining and Technology (Germany), Institute of Thermal Process Engineering
Type of business or sector	University
Type of business or sector	University
Dates	01.11.1999-30.09.2000
Occupation or position held	Scientific assistant
Main activities and responsibilities	Materials of fuel cells
Name and address of employer	Freiberg University of Mining and Technology (Germany), Institute of Ceramic Materials
Type of business or sector	University
Dates	01.09.1997-30.04.1998
Occupation or position held	Scientific assistant
Main activities and responsibilities	Direction of medical certification for preparation of hydroxyapatite powders
Name and address of employer	University of Veszprém (Hungary), Department of Silicate and Materials Engineering
Type of business or sector	University

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Education and training

Dates	28.12.2022
Title of qualification awarded	Habilitation, Chemical engineering
Principal subjects/Occupational skills covered	Bioceramics
Name and type of organisation providing organisation and training	Babes-Bolyai University, Cluj-Napoca
Dates	1994-1997
Title of qualification awarded	PhD in Chemistry
Principal subjects/Occupational skills covered	Bioceramics
Name and type of organisation providing organisation and training	University of Veszprém (Hungary)
Level in national or international classification	International Standard Classification of Education (ISCED) 6
Dates	1989-1994
Title of qualification awarded	Chemical Engineer
Principal subjects/Occupational skills covered	Chemical Engineering
Name and type of organisation providing organisation and training	Technical University of Timisoara, Faculty of Industrial Chemistry, Department of Science and Engineering of Oxidic Materials, Romania
Level in national or international classification	ISCDE 5
Dates	1985-1989
Title of qualification awarded	Final secondary-school examination
Principal subjects/Occupational skills covered	General education
Name and type of organisation providing organisation and training	Chemical High School, Tg. Mures (Romania)
Level in national or international classification	ISCED 3

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Personal skills and competences

Mother tongue(s) **Hungarian**

Other language(s)

Self-assessment European level (*)	**Understanding**		**Speaking**		**Writing**
	Listening	Reading	Spoken interaction	Spoken production	
Romanian	C2	C2	C2	C2	C2
English	C2	C2	C2	C2	C2
German	C2	C2	C2	C2	C2
French	B1	B1	B1	B1	B1

(*) Common European Framework of Reference (CEF) level

Social skills and competences

Capacity of work in international and national research teams, interpersonal skills, communication, responsibility, intercultural skills, conflict management, negotiations

Former Board member of TransSilvanus Association

Organisational skills and competences

Vaste national and international managerial competence, Former President of Proscholamontessorii Assotiation

Technical skills and competences

Computer skills and competences

Operating systems: Windows, Linux, MacOSX;
Applications: Windows Office, Origin, Latex

Artistic skills and competences

Piano

Other skills and competences

Sports: skiing, swimming,

music, literature

Competence fields:

1. Bioceramics based on hydroxy- and fluorhydroxyapatites

- Preparation and characterization of hydroxy- and flurohydroxyapatites

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- Modification of hydroxyapatites' properties by substitutions with F^- ions;
- Preparation of high purity hydroxyapatite powders;
- Chemical characterization of apatites (X-ray diffractometry IR-, Raman spectroscopy, morphologic analyses with SEM, thermal analyses);
- Comparison of different analytical methods for determination of Ca^{--}, P^{--} and F^{--} content (ICP, titration, spectrophotometry, ion chromatography, analyses with fluoride-selective electrode);

2. Advanced ceramics

- Sintering of translucent Al_2O_3 -ceramics by Pulsed Electric Current Sintering Method (PECSM);
- Spatial Image Analysis of porous Al_2O_3 ceramic samples;
- Materials for fuel cells (registration and analyses of magnetic impedance data, gas chromatography);
- Testing and characterization of materials for biofilters;
- Thermal Spraying (setting into operation of the MASTER JET type flame spray gun); Nanopowders in MgO-C Refractories.

3. Biofilter materials (beds)

- natural materials (wood waste) as biofilter materials
- characterization and modelling of pressure drops across the beds

4. Crystallization processes

- mathematical modelling of the crystallization process of hydroxyapatite

h-index: 15

Organized events:

- **Workshop** with the topic: Flame-Spraying, Location: UBB, Cluj-Napoca, Date: 22. 03.2007., Co-organizer: Saint-Gobain Coating Solutions with a participation of national companies and academic staff;
- Hungarian-Romanian **Workshop** on Ceramic Coatings by Thermal Spraying, Location: Institute of Materials and Environmental Chemistry, CRC, HAS, Budapest, Date: 29-th April 2010, Financed by Domus

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Hungarica;

- **Winter School:** Topic: Uncertainty in cognition, Location: Babeș-Bolyai University, Cluj-Napoca, Date: 27-28 January 2012, Financed by POSDRU/89/1.5/S/60189

Driving licence(s) B category

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Annexes

Lectures:

- Transport Phenomena, course and seminar,
- Heat Transfer, course, seminar, lab. work
- Impulse Transfer, course, seminar, lab. work,
- Mass Transfer, course, seminar, lab. work,
- Bio-Nanotechnology, optional course, lab. work
- Engineering of biomaterials course, lab. work
- Characterization of biomaterials course, lab. work

- Direction of diploma- and master works ;
- Direction of Advanced Materials laboratories;

Laboratory: Inside the **Institute for Experimental Interdisciplinary Research (IEIR),** Centre of Biomaterials, the "Laboratory for the synthesis and characterization of micro and nano biomaterials" was created.

- **Projects**

1996: Preparation of high purity hydroxyapatite powders (Hungary)

1997: Sintering of translucent Al_2O_3 -ceramics by Pulsed Electric Current Sintering Method (Japan)

1997-1998: Direction of medical certification for preparation of hydroxyapatite powders (Hungary)

1998: Spatial Image Analysis of porous Al_2O_3 ceramic samples (Germany)

1999-2000: Materials of fuel cells (Germany)

2000-2002: Characterization of biofilter materials (Germany)

2004-2005: Thermal Spraying (setting into operation of the MASTER JET type flame spray gun); Nanopowders in MgO-C Refractories (direction of DFG- Project); Geopolymers/Biocermics (preliminary experiences), Direction of laboratories on methods of test for dense shaped refractory products; Lectures: Bioceramics and Flame Spraying (Germany)

2006-2008: National Excellences Research Project for Researchers Reintegration financed by Ministry of Education and Research, Romania, with the title of the research: *Preparation, Characterization and Deposition of Apatites as Materials or Additive Materials to Artificial Bone Substitute;*

2008: Elaboration of wood waste based bricks for construction,

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project based on service attestation, 01.02.2008-01.05.2008;

S.C. Magic House S.R.L.

- Direction of projects with Romanian Companies:

AZOMURES S.A, CHEMICER S.A, Quantumpharm S.A.

2009-2010 "Improving University Management" Babes-Bolyai University, Cluj, http://www.management-universitar.ro/ (Romania)

2010- Structural Founds, Project title: ***Doctoral program for high qualified human resource in the interdiscipliner research*** (POSDRU/21/1.5/G/36154), Babes-Bolyai University, Cluj, (Romania)

2010-2011 Terminology contract for Hungarian D3-IATE-HU-3, terminology research work in the filed of chemical tests and apparatuses, European Commision, DG Translation, Luxemburg

2017 Advanced Fellowship –INOVARE, Aplicația "*IOT"-ului în prepararea hidroxiapatitei*, Institutul STAR-UBB, 1oct. - 31 nov. 2017

2018 Responsible for Mobility project for researchers with experience from diaspora, invited researcher: Prof. Zoltán NAGY, Purdue University, 26-30 november 2018

2019 Responsible for Mobility project for researchers with experience from diaspora, invited researcher: Prof. Zoltán NAGY, Purdue University, 06-12 october 2019

2021 Responsible for Mobility project for researchers with experience from diaspora, invited researcher: Prof. Zoltán NAGY, Purdue University, 09-15 december 2021

2023 Responsible for Mobility project for researchers with experience from diaspora, invited researcher: Prof. Zoltán NAGY, Purdue University, 01-08 december 2023

2024 Responsible for Mobility project for researchers with experience from diaspora, invited researcher: Prof. Zoltán NAGY, Purdue University, 02-06 december 2024

2020

1. Project code: PN-III-P2-2.1-PED-2019-3664
Contract nr.: 348PED/2020 Proiect title: Customized intelligent matrices for tissue regeneration and meta-inflamation control, *PNCDI III - Programme 2, NR. 348PED / 2020,* (PRIM-TISS) - responsible
2. Project code: PN-III-P2-2.1-PED-2019-1714
Contract nr.: 261PED/2020 - responsible
Proiect title: *Biotechnology for a biomimetic composite hydrogel based on extracellular matrix components and Si-bioceramics enriched with small molecules (flavonoids) for osteochondral regeneration* - member (BIOSICON)

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2021

1. Project code: PN-III-P4-ID-PCE-2020-1301
Project title: *The swarm intelligence of independent artificial active particles*– member

2. Project code: ID P_40_374
Project title: Partnership for the transfer of innovative technologies and advanced materials in the field of visual arts (production, conservation, restoration) – member

- Saint-Gobain Coating Solutions
  http://www.coatingsolutions.saint-gobain.com
- TU Bergakademie Freiberg http://www.tu-freiberg.de
- Technical University of Nagaoka http://ishizaki.nagaokaut.ac.jp
- Research Institute for Technical Physics and Material Science from Budapest http://www.mfa.kfki.hu
- The Semmelweis University from Budapest
  http://www.dgci.sote.hu
- EMPA – Materials Science and Technology
  http://www.empa.ch/plugin/template/empa/79/*/---/l=2
- Institute of Materials and Environmental Chemistry Budapest
  http://www.chemres.hu/ak
- University of Szeged http://www.u-szeged.hu/english/

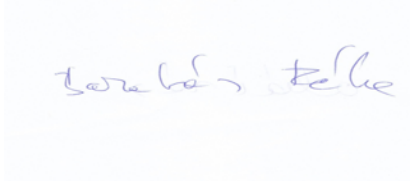
Membership in editorial boards:

b. Member of the editorial board of the International *Journal of engineering and Technology Innovation (IJETI)*
c. Member of the public body of the *Hungarian Academy of Sciences*
d. Member of editorial board *Nanoscience and Nanoengineering*
e. Scientific secretary of the Regional Comittee of Hungarian Academy in Cluj-Napoca

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Awards:

1. International salon PRO INVENT, 2012, Cluj-Napoca, Romania, **Certificate of excellence and silver medal** for the patent Nr. 123140, The obtaining procedure to a fertilizer composition based on nitrogen, phosphorous and potassium
2. International salon PRO INVENT, 2014, Cluj-Napoca, Romania, **Certificate of excellence and gold medal** for the patent Nr. 127891, Binder composition and obtaining procedure of the construction materials based on wood waste
3. EUROINVENT 2016, **GOLD MEDAL**,19-21 May, Iasi
4. **Diploma of Excellence**, 2016, 19-21 May, Iasi
5. International salon PRO INVENT, 2017, Grand Prize EUROINVENT and Special Prize of Iuliu Hatieganu Medical University of Medicine, Cluj-Napoca, 22-24 March,
6. International Student Innovation and Scientific Research Exhibition – "Cadet INOVA'17", **Silver Medal**, Sibiu, 27-29 April
7. Dentis Congress, The XVIIIth edition, **I. Prize**, *In vivo testing of the Titanium scaffolds manufactured by Selectiv Laser Melting (SLM)* 27-29 April, 2017, Cluj-Napoca, Romania
8. International Exhibition INVENTCOR, 5th edition Deva, 4-6 April, 2024, Romania, Diploma GOLD, Mucoadhesive System Composition for Topical Release of Doxycycline in the Oral Cavity
9. Silver Medal pentru invenția: Matrix with local antimicrobial and general immunomodulatory effect based on doxycycline encapsulated in polylactic acid and hydroxyapatite nanofibers. OSIM A/00385/05.07.2022,The 17th Edition of EUROINVENT European Exhibition of Creativity and Innovation, Iași, 8 - 10 May 2025



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