

curriculum vitae



Personal information

Surname(s) / First name **Réka BARABÁS**
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Fax 40-264-590818
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Nationality Hungarian

Date of birth 01.05.1971

Gender Female

Occupational field **Assoc. Professor**

Work experience

Dates	01.01.2006-present
Occupation or position held	Associate 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
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

Education and training

Dates	1994-1997
Title of qualification awarded	PhD in Chemistry
Principal subjects/Occupational skills covered	Bioceramics
Name and type of organisation providing	University of Veszprém (Hungary)

organisation and training
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 examinatio

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

Personal skills and competences

Mother tongue(s) **Hungarian**

Other language(s)

*Self-assessment
European level (*)*

Romanian
English
German
French

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2	C2	C2	C2	C2
C2	C2	C2	C2	C2
C2	C2	C2	C2	C2
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	<u>Sports</u> : skiing, swimming, music, literature

Competence fields:

1. Bioceramics based on hydroxy- and fluorhydroxyapatites

- Preparation and characterization of hydroxy- and fluoroxyapatites
 - 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 Ca²⁺, P³⁻ and F⁻ content (ICP, titration, spectrophotometry, ion chromatography, analyses with fluoride-selective electrode);

2. Advanced ceramics

- Sintering of translucent Al₂O₃ -ceramics by Pulsed Electric Current Sintering Method (PECSM);

- Spatial Image Analysis of porous Al₂O₃ 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: 10

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

Driving licence(s) B category

Lectures:

- Transport Phenomena, course and seminar,
 - Heat Transfer, course, seminar, lab. work
 - Impuls Transfer, course, seminar, lab. work,
 - Mass Transfer, course, seminar, lab. work, ,
 - Bio-Nanotechnology, optional course, lab. work
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- Direction of diploma- and master works ;
 - Direction of Advanced Materials laboratories;

see:

http://chem.ubbcluj.ro/romana/ANEX/inginerie/research/ceex_5946/reka.htm

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 Al₂O₃ -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 Al₂O₃ 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, 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
- 2020**.....Responsible for *Personalized intelligent matrices for tissue regeneration and meta-inflammation control*, PNCDI III - Programme 2, NR. 348PED/2020, 600.000 RON
- 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 metainlamation control (PRIM-TISS)
 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)
- 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/>

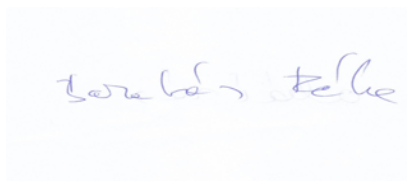
Membership in editorial boards:

- 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*

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

A handwritten signature in blue ink, appearing to read "Reka Barabas", is centered on a light blue rectangular background.