



Alena Fedoročková

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ABOUT ME

Associate professor at Technical university of Košice

h-index (WoS): 10

Scientific publications (WoS): 24

Responses to publications (WoS): 293

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SCOPUS ID: 12776352600

WoS ID: JTO-0679-2023

EDUCATION AND TRAINING

2008 – CURRENT Košice, Slovakia

ASSOCIATE PROFESSOR; IN THE FIELD OF INORGANIC TECHNOLOGIES AND MATERIALS Technical university of Košice

Website www.tuke.sk | **Field of study** Anorganické technológie a materiály

2000 – 2004 Košice, Slovakia

PHILOSOPHIAE DOCTOR (PHD.) Technical University of Košice

Website www.tuke.sk | **Field of study** Hutníctvo | **Level in EQF** EQF level 8

1982 – 1987 Košice, Slovakia

DOCTOR OF NATURAL SCIENCES (RNDR.) Pavol Jozef Šafárik University

Website www.upjs.sk | **Field of study** Chemistry | **Level in EQF** EQF level 7

WORK EXPERIENCE

2008 – CURRENT Košice, Slovakia

ASSOCIATE PROFESSOR, UNIVERSITY TEACHER TECHNICAL UNIVERSITY OF KOŠICE

- conducting lectures at the bachelor's, master's and doctoral degree of study
- supervision of bachelor's, master's and doctoral theses
- research in the field of chemical technologies
- research and development in the field of materials chemistry
- synthesis of functional materials for hydrogen production by electrolysis of water and energy storage materials
- recovery of industrial waste into products with higher added value for targeted applications such as catalysts and catalyst carriers for various industrial reactions, gas sorbents, microfiller components for refractory concretes, ceramic pastes for 3D printing, etc.

1995 – 2008 Košice, Slovakia

ASSISTANT PROFESSOR, UNIVERSITY TEACHER TECHNICAL UNIVERSITY OF KOŠICE

- conducting lectures and exercises in the bachelor and master degree of study
- supervision of bachelor's and master's theses
- research in the field of chemical processing of domestic raw materials (magnesite, serpentinite) into products with higher added value
- research in the field of thermal treatment of magnesite for the removal of heavy metals from contaminated water.

1987 – 1990 Bratislava, Slovakia

RESEARCHER - SOLVING THE TASK OF THE STATE RESEARCH PLAN "EXTRACTION OF RARE EARTH ELEMENTS (LA, CE, PR, ND) FROM BASTNESITE" SLOVAK ACADEMY OF SCIENCES, INSTITUTE OF INORGANIC CHEMISTRY

Business or Sector Administrative and support service activities

PROJECTS

1987 – 1990

Study of physicochemical conditions of isolation of rare earth elements and its chemometric provision.

1997 – 2000

Study of model heterogeneous chemical reactions in the processes of preparation of pure magnesium compounds from natural raw materials.

2003 – 2006

Kinetics and mechanism of chemical dissolution of multicomponent oxides.

2006 – 2009

Study of the relationships between structure, changes in surface morphology and kinetics of chemical dissolution of multicomponent oxides.

2009 – 2012

Possibilities of obtaining magnesium compounds from magnesite and serpentinite by hydrometallurgical processes.

2009 – 2011

Centre for Excellent Research on the Extraction and Processing of Earth Resources I Activity: New products based on magnesite caustic and clinker

2010 – 2011

Slovak Research and Innovation Platform for Sustainable Raw Material Resources Activity: New products made of magnesite and serpentinite obtained by the application of chemical methods.

2010 – 2012

Centre for Excellent Research on the Extraction and Processing of Earth Resources II Activity: New products based on Slovak raw materials.

2011 – 2014

Liquid phase hydrogenation Activity: Preparation and characterization of carrier catalysts suitable for liquid phase hydrogenation.

2010 – 2014

Advanced technologies for the mining enterprise of the 21st century.

2012 – 2014

Verification of the use of permeable reactive barrier technology for the remediation of acidic groundwater contaminated with heavy metals.

2014 – 2016

Verification of the possibility of using magnesite for the remediation of acidic groundwater by permeable reactive barrier technology.

2017 – 2019

Use of sands and sludge from magnesite treatment for the production of pure magnesium salts.

2018 – 2021

Ceramic materials for refractory linings of boilers with intensified biomass combustion.

2019 – 2021

Preparation of nanostructured oxides from secondary raw materials by microemulsion method.

2017 – CURRENT

Expert guarantor of the Chemgeneration project - a pan-European scientific program of BASF, whose main mission is to popularize science and involve high school students in discovering chemistry and its role in building a sustainable future.

2022 – 2024

Study of the influence of the composition of the binder phase of refractory materials on corrosion in high-temperature aggregates processing metals and wastes.

2023 – CURRENT
Mathematical modeling of processes in hydrometallurgy, chemical processing of non-ore raw materials and corrosion of non-metallic materials.

EDUCATION

1995 – CURRENT
Guaranteeing and teaching subjects: Chemistry I; Chemistry II; Fundamentals of materials chemistry; Dispersion Systems, Chemistry Seminar

Supervisor of bachelor's theses: Alica Fedorová (2014); Miroslava Ďurčová (2018); Ester Matisová (2021)

Supervisor of Master's thesis: Jana Ďuranová (2011); Martina Gliganičová (2012); Patrícia Bérešová (2014); Martina Frániková (2015); Alica Fedorová (2016); Ester Matisová (2023)Petra Ndoja (2015)

Supervisor of Dissertation's thesis: Agnes Doráková (2013); Dominika Kalaposová (2024); Ester Matisová (2024 did not finish her studies for a job position in industrial practice.)

CERTIFICATES, PATENTS, UTILITY MODELS, AWARDS

1995 – CURRENT
Certificate of professional competence to work with very toxic substances and mixtures and toxic substances and mixtures.

2016
Utility model No. 29830 for technical solution: "Equipment for decontamination of groundwater contaminated with heavy metals" dated 27.9.2016.

2016
Patent No. PV 2016-497: "Filling of permeable reactive barrier for remediation of polluted groundwater and method of its application" of 15.08.2016

2017
Dean's Award: Team of the Year for Popularizing Science and the Faculty through BASF's CHEMGENERATION Science Program.

LANGUAGE SKILLS

Mother tongue(s): **SLOVAK**
Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C2	B2	B2	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

NETWORKS AND MEMBERSHIPS

Slovak Silicate Scientific and Technical Society.

Departmental Committee for the Field of Study 5.2.37 Mineralurgy.