europass Curriculum vitae

PERSONAL INFORMATION

Dr. István János Kovács

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https://scholar.google.com/citations?hl=en&user=8tS-Ku0AAAAJ
https://www.researchgate.net/profile/Istvan_Kovacs4 http://www.researcherid.com/rid/A-1267-2008
https://www.scopus.com/authid/detail.uri?origin=resultslist&authorId=7202438875&zone=
http://orcid.org/0000-0002-3488-3716

Born: 04 April 1980, Miskolc, Hungary
Married, 2 children

WORK EXPERIENCE

01/04/2024–present
director general
HUN-REN Institute of Earth Physics and Space Science (EPSS), Budapest (Hungary)

01/07/2021–present
scientific advisor
HUN-REN Institute of Earth Physics and Space Science (EPSS), Budapest (Hungary)

01/11/2020–30/06/2021
senior research fellow
Centre for Energy Research ELKH, Budapest (Hungary)

01/08/2017–11/08/2020
senior research fellow
Hungarian Academy of Sciences, Research Centre for Astronomy and Earth Sciences, Geodetic and Geophysical Institute, Budapest (Hungary)

03/11/2008–31/07/2017
research fellow
Geological and Geophysical Institute of Hungary, Budapest (Hungary)

EDUCATION AND TRAINING

01/02/2005–04/08/2008
PhD in Earth Sciences
Australian National University, Canberra (Australia)

01/09/1998–31/08/2003
MSc in Geology
Eötvös University, Budapest (Hungary)

PERSONAL SKILLS

Publication achievements

H-index: **36** (Google Scholar); **33** (Scopus); **32** (MTMT)
Citations: **4512** (Google Scholar); **4050** (Scopus), **3784** (MTMT)

Mother tongue(s) Hungarian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C2	C2
Spanish	A1	A2	A1	A1	A1

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

Organisational / managerial skills

- Director General of Institute of HUN-REN Earth Physics and Space Science (Sopron) (2024-)
- Head of the Earth Physics department at the HUN-REN Institute of Earth Physics and Space Science (2021-2024)
- Director of MTA CSFK Geodetic and Geophysical Institute (2019-2020)
- Head of MTA CSFK Lendület Pannon LitH_2Oscope Research Group with more than 10 members (2018-2024)
- Head of department at the Geological and Geophysical Institute of Hungary responsible for 11 employees (2012-2013)
-supervisor of numerous students at BSc, MSc and PhD levels at Eötvös University (2004-)

MAIN SCIENTIFIC ACHIEVEMENTS

Determination of the optimal measurement setting, interlaboratory variability, and applicability of the quantitative non-polarised infrared method for volatile components (H_2O, CO_2) incorporated in the dominant anisotropic minerals of the upper mantle and phenocrysts of basalts

Determining the water content of the asthenosphere and lithosphere beneath the Carpathian-Pannonian region and demonstrating its effects on geophysical properties, and the LAB.

Development of a new geodynamic and geochemical model for the origin of Plio-Pleistocene alkaline basalts in the Carpathian-Pannonian region.

Demonstration that the cooling asthenosphere beneath young continental extensional basins can be a source of volatiles (e.g., CO_2, noble gases).

Development of the 'pargasosphere' hypothesis for the joint interpretation of geophysical and geochemical datasets for the lithosphere

ADDITIONAL INFORMATION

Grants

In summary **1 400 904 kHUF/3 502 kEUR** retrieved from different funding resources

1) National Research, Development and Innovation Office, (RHG_L 151351), '**Multi-scale modelling and monitoring of Earth System Dynamics and its impact on geo-energy, geo-hazards and climate.**', 2025-2029, (***1,000,000 kHUF***), Co-PI
2) National Research, Development and Innovation Office, (MEC_SZ 149113), '**TOPO-EUROPE'**, 2024, (***9,104 kHUF***), PI
3) Hungarian Academy of Sciences Visiting Researcher Program, invitation of Prof. Sierd Cloetingh, 2023, (***10,000 kHUF***), PI
4) ELKH Infrastructure Grant SA-47/2021, '**Topo-Transylvania**', 2021-2023, (***40,000 kHUF***), accepted, PI

5) Hungarian Academy of Sciences Visiting Researcher Program, invitation of Prof. Sierd Cloetingh, 2019-2020, (***6,000 kHUF***), PI
6) National Research, Development and Innovation Office, (NN141956), '**Topo-Transylvania**', 2018-2024, (***41,500 kHUF***), PI
7) Hungarian Academy of Sciences Momentum program, 2018-2024, **'Pargasosphere: or the new role of 'water' in the dynamics of the lithosphere-asthenosphere system based on the Pannonian basin?!'**, (***190,000 kHUF***), PI
8) Bolyai Scholarship of the Hungarian Academy of Sciences, '**Water distribution in the lithosphere of the Carpathian-Pannon region**', 2017-2018, ***(~3,200 kHUF***), PI
9) National Research, Development and Innovation Office (K128122), '**Water in the fire: what does the water content and geochemistry of volcanic rocks and their phenocrysts reveal?**', 2016-2021, (***27,000 kHUF***), PI
10) Bolyai Scholarship of the Hungarian Academy of Sciences, '**Application of Infrared Spectrometry in Earth and Environmental Sciences**', 2013-2016, (***10,000 kHUF***), PI
11) National Research, Development and Innovation Office (PD101683), '**Quantitative infrared spectrometry and isotope geochemical investigation of "water" built into the structure of minerals**', 2011-2014, (***18,100 kHUF***), PI
12) Marie Curie International Reintegration Grant (NAMSs-230937) '**Water and its bearing on geophysical properties**'; 2009-2013, (***100 kEUR***), PI
13) Mervyn and Katalin Paterson grant (ANU RSES, Australia), '**Hydrogen measurements by SIMS in nominally anhydrous minerals**', 2007, (***1,500 EUR***), PI

Honours and awards

2025) **Honorary Citizen** of Szihalom from the local council
2018) **Mária Vendl Research Medal** from the Hungarian Geological Society
2017) **János Bolyai Postdoctoral Scholarship** (2017-2018)
2017) **Bolyai Plaquette** from the Hungarian Academy of Sciences
2015) **European Mineralogical Union Research Excellence Award**
2013) **János Bolyai Postdoctoral Scholarship** (2013-2016)
2011) **Outstanding Young Scientist Award, Geochemistry, Mineralogy, Petrology and Volcanology Division**, European Geological Union
2011) **Junior Prima Award in Science**
2008) **Szádeczky-Kardoss Elemér Award** of the Hungarian Academy of Sciences
2007) **Outstanding Young non-Russian Researcher Award** of the Russian Mineralogical Society
2006) **Szádeczky-Kardoss Elemér Award** of the Hungarian Academy of Sciences
2005) **Semsey Andor Award** of the Hungarian Geological Society for the best publication by young scientist (shared)
2003) **Pro Scientia Gold Medal Award** of the National Scientific Conference of Students
2003) **Portus Award** of the Eötvös Collegium
2003) Outstanding Student of the Faculty, Eötvös University, Budapest, Hungary
2002/2003) Stipendium of the Hungarian Republic
2002) Outstanding Student of the Faculty, Eötvös University, Budapest
2001/2002) Stipendium of the Hungarian Republic
2001) Outstanding Student of the Faculty, Eötvös University, Budapest, Hungary

Invited talks and seminars

1) Goldschmidt Conference, Prague, Czeh Republic, Keynote talk (06, 2025) "Melts, fluids and metasomatism: the role of mid-lithospheric discontinuities (MLD) in subduction initiation and cratonic rejuvenation"

2) 3d European Mantle Workshop, Pavia, Italy, International Conference, Keynote talk (06/2018) "Water and its distribution in the upper mantle beneath the Pannonian Basin: Geodynamical and geophysical implications"

3) Centre for Lithospheric Research, Czech Geological Survey, (Host: K. Schulmann)

(06/2017) Research group seminar: *Quantitative micro-infrared spectrometry of water in the upper mantle and its implication for the lithosphere-asthenosphere system*

4) Laboratoire Magmas et Volcans (LMV), Clermont-Ferrand (Host: N. Bolfan-Casanova (02/2017) School seminar: „*The role of amphibole in the dynamics and rheology ofthe lithosphere–asthenosphere system"*

5) School of Earth Sciences, Zheijang University (Host: Q. Xia) (10/2016) Volatiles in the Earth's interior: Natural and Experimental Investigations" conference: *Quantitative infrared spectrometry of water in nominally anhydrous minerals: fact, doubts and beliefs: an „East side" story*

6) 2nd European Mineralogical Conference, Rimini (award talk) (09/2016) *Quantitative infrared spectrometry of water in nominally anhydrous minerals: fact, doubts and beliefs*

7) 18th Mining, Metallurgy and Geology Conference, Brasov (plenary lecture) (04/2016) *Tertiary geodynamics of the Carpathian-Pannonian region and the evolution of its subcontinental lithospheric mantle*

8) University of Vienna (Host: Götz Bokelmann) (03/2014) *Tertiary geodynamics of the Carpathian-Pannonian region as it is seen in xenoliths: doubts, beliefs and facts*

9) ETH Zürich (Host: Z. Zajacz) (11/2013) *Quantitative infrared spectrometry in Earth Sciences: the role of "water"*

10) University of Debrecen, Faculty of Medicine (Hosts: J. Kappelmayer, H. Bhattoa)(06/2013) *Analytical facilities in the Geological and Geophysical Institute of Hungary for analysing bones*

11) Hungarian Academy of Sciences, Wigner Research Centre for Physics (Host: K. Kamaras)(05/2013) *Minerals in infrared light*

12) University of Science and Technology of China (Host: Q. Xia)(03/2013) *1) Diffusion of hydrogen in olivine: a site-specific approach 2) Dynamics of the lithosphere-asthenosphere system in the Carpathian-Pannonian region following the Miocene extension*

13) Eötvös University (Host: S. Harangi, L. Fodor)(12/2012) *A new geodynamical model for the formation of the Pannonian Basin: the role of an asthenospheric flow and its proof*

14) University of Innsbruck (Host. R. Stalder)(10/2012) *Water content of the shallow upper mantle and its geophysical implications*

15) University of Lille 1 (Host: J. Ingrin)(02/2012) *The re-evaluation of water content of olivine from the shallow upper mantle with the help of the PULI database*

16) University of Science and Technology of China (Host: Q. Xia) (12/2011) *1) Water and its effect on the lithosphere-asthenosphere boundary 2) Water content in NAMs from the lower crust and upper mantle beneath the Carpathian-Pannonian Region*

17) Boston University (Host. T. Plank) (05/2007) *Quantitative infrared spectrometry with unpolarised light*

18) Eötvös University, Geochemistry Workshop (Host: S. Harangi) (09/2006) *Paleogene – early Miocene volcanism and its geodynamic links in the Alpine-Pannonian-Dinaric region: inferences for the genesis of middle Miocene volcanism in the Pannonian Region*

Conference Session Convener

1) 3ECEES - Third European Conference on Earthquake Engineering and Seismology 2022, Bucharest, Romania, 'Topo-Transylvania'

2) Goldschmidt Conference 2019, Barcelona, Spain, 'The Subduction Zone Factory: A Pathway for Volatiles to the Earth's Upper Mantle'

3) 2nd European Mineralogical Conference 2016, Rimini, Italy, 'Volatiles in the deep Earth: storage, mobility and implications'

4) Goldschmidt Conference 2015, Prague, Czeh Republic, 'Water" in the Mantle and Crust: Hydrous and Nominally Anhydrous Minerals'

5) IMA2014, Gauteng, South Africa, 'Water and Hydrous Phases in the Earth's Interior: Geological, Geophysical and Geodynamic Implications'

6) Balkan Geophysical Society, 2011, Budapest, 'Mantle and lithosphere'

7) IMA2010, 2010, Budapest, 'Water in the nominally anhydrous minerals'

Conference Organization

1) Topo-Europe workshop, 2024, Sopron, Hungary (main organiser)

2) Topo-Europe workshop, 2023, Sopron, Hungary, (main organiser)
3) Lithospheric Dynamics and Evolution of the Sedimentary Basin Fill, 2022, Sopron, Hungary (main organiser)
4) 8. Petrological and Geochemical Assembly (domestic), 2017, Szihalom, Hungary (main organizer)
5) IMA2010, 2010, Budapest (executive scientific secretary)
6) EURISPET, 2008, Budapest (fieldtrip guide)
7) ECROFI XVII, 2003, Budapest (member of the organizing committee)

numerous online and virtual conferences available at the 'Youtube' channel below including the series of Actual Earth Physics:
https://www.youtube.com/@lith2oscopepannon414/videos

Journal Editorial activity

Acta Geodaetica et Geophysica, special editor, volume 59/3, 'Crustal and upper mantle structures and processes in the Alpine-Carpathian-Pannonian system: recent advances' (2024)
European Journal of Mineralogy, guest editor, volume 33, 'Probing the Earth: reviews of OH groups in anhydrous and hydrous minerals' (2021)
Acta Geodaetica et Geophysica, member of the editorial board (2019-)
Central European Geology, member of the editorial board (2016-2019)
American Mineralogist, member of the editorial board (2015-2018)

Journal reviewer

Gondwana Research, European Journal of Mineralogy, Journal of Geosciences, Geofizika, Physics and Chemistry of Minerals, American Mineralogist, Mineralogy and Petrology, Contributions to Mineralogy and Petrology, Earth and Planetary Science Letters, Geologia Croatica, Acta Geodaetica et Geophysica, Nature Communications, Central European Geology, American Society of Science and Engineering, Geology

Service in scientific bodies

Hungarian National Committee for the International Lithosphere Program, president (2021-2024)
Hungarian Young Academy, member (2018-2023)
Hungarian National Committee for the International Lithosphere Program, secretary (2017-2021)
Hungarian Academy of Sciences, Geochemistry, Mineralogy and Geology Committee Geology Subcommittee, president (2017-2020)

Job-related skills

- good communication skills
- excellent problem-solving capacity
- great ability to work in multidisciplinary and multicultural environment

ANALYTICAL HANDS-ON EXPERIENCE
EPMA: JEOL 8100 Superprobe, JEOL 8200 Superprobe, JEOL 8600 Superprobe, Cameca SX100
SEM: Philips XL-30 Scanning Electron Microscope, JEOL JSM6400
ICP-MS: VG Elemental Plasma Quad II laser ablation system, Elan 6100 DRC a novel quadrupole mass spectrometer with a prototype of 193 nm ArF Excimer laser
FTIR Spectrometry: A range of Bruker Spectrometers (from IFS28 to Vertex70) and Microscopes (A590 to Hyperion 1000-3000); Varian FTS-7000 FTIR Spectrometer / UMA-500-600 Stingray microscope; Nicolet 5700 FTIR spectrometer / Continuum microscope
SHRIMP: SHRIMP-II
SIMS: Cameca ims 6f
EXPERIMENTAL PETROLOGY: Piston cylinder experiments

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Proficient user	Independent user	Independent user	Independent user

Driving licence B