Istvan Kovacs

List of Publications by Year in descending order

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74 papers	2,421 citations	236925 25 h-index	214800 47 g-index
76 all docs	76 docs citations	76 times ranked	1900 citing authors

#	Article	IF	Citations
1	Water and its influence on the lithosphereâ€“asthenosphere boundary. Nature, 2010, 467, 448-451.	27.8	293
2	High water content in Mesozoic primitive basalts of the North China Craton and implications on the destruction of cratonic mantle lithosphere. Earth and Planetary Science Letters, 2013, 361, 85-97.	4.4	169
3	Quantitative absorbance spectroscopy with unpolarized light: Part II. Experimental evaluation and development of a protocol for quantitative analysis of mineral IR spectra. American Mineralogist, 2008, 93, 765-778.	1.9	150
4	Experimental Study of the Influence of Water on Melting and Phase Assemblages in the Upper Mantle. Journal of Petrology, 2014, 55, 2067-2096.	2.8	135
5	Site-specific infrared O-H absorption coefficients for water substitution into olivine. American Mineralogist, 2010, 95, 292-299.	1.9	100
6	Water in the upper mantle and deep crust of eastern China: concentration, distribution and implications. National Science Review, 2019, 6, 125-144.	9.5	88
7	Quantitative absorbance spectroscopy with unpolarized light: Part I. Physical and mathematical development. American Mineralogist, 2008, 93, 751-764.	1.9	85
8	An Experimental Study of Water in Nominally Anhydrous Minerals in the Upper Mantle near the Water-saturated Solidus. Journal of Petrology, 2012, 53, 2067-2093.	2.8	84
9	Seismic Properties of Anita Bay Dunite: an Exploratory Study of the Influence of Water. Journal of Petrology, 2007, 49, 841-855.	2.8	80
10	Composition and evolution of lithosphere beneath the Carpathianâ€“Pannonian Region: a review. Tectonophysics, 2004, 393, 119-137.	2.2	77
11	Theoretical infrared spectrum of OH-defects in forsterite. European Journal of Mineralogy, 2011, 23, 285-292.	1.3	69
12	Continuous eclogite melting and variable refertilisation in upwelling heterogeneous mantle. Scientific Reports, 2014, 4, 6099.	3.3	61
13	Seismic anisotropy and deformation patterns in upper mantle xenoliths from the central Carpathianâ€“Pannonian region: Asthenospheric flow as a driving force for Cenozoic extension and extrusion?. Tectonophysics, 2012, 514-517, 168-179.	2.2	58
14	Crustal structure of the Western Carpathians and Pannonian Basin: Seismic models from CELEBRATION 2000 data and geological implications. Journal of Geodynamics, 2011, 52, 97-113.	1.6	55
15	Middle Miocene volcanism in the vicinity of the Middle Hungarian zone: Evidence for an inherited enriched mantle source. Journal of Geodynamics, 2008, 45, 1-17.	1.6	53
16	Coexisting silicate melt inclusions and H2O-bearing, CO2-rich fluid inclusions in mantle peridotite xenoliths from the Carpathianâ€“Pannonian region (central Hungary). Chemical Geology, 2010, 274, 1-18.	3.3	40
17	Type-II xenoliths and related metasomatism from the NÃ³grÃ¡d-GÃ¶mÃ¶r Volcanic Field, Carpathian-Pannonian region (northern Hungaryâ€“southern Slovakia). Tectonophysics, 2004, 393, 139-161.	2.2	39
18	Effect of iron and trivalent cations on OH defects in olivine. American Mineralogist, 2017, 102, 302-311.	1.9	39

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19	A 13,600-year diatom oxygen isotope record from the South Carpathians (Romania): Reflection of winter conditions and possible links with North Atlantic circulation changes. Quaternary International, 2013, 293, 136-149.	1.5	38
20	Geodynamic implications of flattened tabular equigranular textured peridotites from the Bakony-Balaton Highland Volcanic Field (Western Hungary). Journal of Geodynamics, 2007, 43, 484-503.	1.6	34
21	Evolution of Mafic Alkaline Melts Crystallized in the Uppermost Lithospheric Mantle: a Melt Inclusion Study of Olivine-Clinopyroxenite Xenoliths, Northern Hungary. Journal of Petrology, 2007, 48, 853-883.	2.8	32
22	Application of attenuated total reflectance Fourier transform infrared spectroscopy in the mineralogical study of a landslide area, Hungary. Sedimentary Geology, 2014, 313, 1-14.	2.1	30
23	Identification of hydrogen defects linked to boron substitution in synthetic forsterite and natural olivine. American Mineralogist, 2014, 99, 2138-2141.	1.9	28
24	Characterization of the sub-continental lithospheric mantle beneath the Cameroon volcanic line inferred from alkaline basalt hosted peridotite xenoliths from Barombi Mbo and Nyos Lakes. Journal of African Earth Sciences, 2015, 111, 170-193.	2.0	28
25	A Quartz-bearing Orthopyroxene-rich Websterite Xenolith from the Pannonian Basin, Western Hungary: Evidence for Release of Quartz-saturated Melts from a Subducted Slab. Journal of Petrology, 2008, 49, 421-439.	2.8	27
26	Plumeâ€Induced Sinking of Intracontinental Lithospheric Mantle: An Overlooked Mechanism of Subduction Initiation?. Geochemistry, Geophysics, Geosystems, 2021, 22, e2020GC009482.	2.5	27
27	Relation between mantle shear zone deformation and metasomatism in spinel peridotite xenoliths of Jeju Island (South Korea): Evidence from olivine CPO and trace elements. Journal of Geodynamics, 2010, 50, 424-440.	1.6	26
28	Deformation in the asthenospheric mantle beneath the Carpathianâ€Pannonian Region. Journal of Geophysical Research: Solid Earth, 2016, 121, 6644-6657.	3.4	24
29	Paleogeneâ€“early Miocene igneous rocks and geodynamics of the Alpine-Carpathian-Pannonian-Dinaric region: An integrated approach. , 2007, , .		23
30	Primary carbonatite melt inclusions in apatite and in K-feldspar of clinopyroxene-rich mantle xenoliths hosted in lamprophyre dikes (Hungary). Mineralogy and Petrology, 2008, 94, 225-242.	1.1	23
31	The role of pargasitic amphibole in the formation of major geophysical discontinuities in the shallow upper mantle. Acta Geodaetica Et Geophysica, 2017, 52, 183-204.	1.6	22
32	Concentration of hydroxyl defects in quartz from various rhyolitic ignimbrite horizons: results from unpolarized micro-FTIR analyses on unoriented phenocryst fragments. European Journal of Mineralogy, 2016, 28, 313-327.	1.3	21
33	Fluidâ€Enhanced Annealing in the Subcontinental Lithospheric Mantle Beneath the Westernmost Margin of the Carpathianâ€Pannonian Extensional Basin System. Tectonics, 2017, 36, 2987-3011.	2.8	20
34	AlpArray in Hungary: temporary and permanent seismological networks in the transition zone between the Eastern Alps and the Pannonian basin. Acta Geodaetica Et Geophysica, 2018, 53, 221-245.	1.6	20
35	Extremely low structural hydroxyl contents in upper mantle xenoliths from the NÃ³grÃ¡d-GÃ¶mÃ¶r Volcanic Field (northern Pannonian Basin): Geodynamic implications and the role of post-eruptive re-equilibration. Chemical Geology, 2019, 507, 23-41.	3.3	20
36	Symplectite in spinel lherzolite xenoliths from the Little Hungarian Plain, Western Hungary: A key for understanding the complex history of the upper mantle of the Pannonian Basin. Lithos, 2007, 94, 230-247.	1.4	19

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37	Metasomatism-induced wehrlite formation in the upper mantle beneath the NÃ³grÃ¡d-GÃ¶mÃ¶r Volcanic Field (Northern Pannonian Basin): Evidence from xenoliths. Geoscience Frontiers, 2020, 11, 943-964.	8.4	17
38	Petrology and geochemistry of granulite xenoliths beneath the NÃ³grÃ¡d-GÃ¶mÃ¶r Volcanic Field, Carpathian-Pannonian Region (N-Hungary/S-Slovakia). Mineralogy and Petrology, 2005, 85, 269-290.	1.1	15
39	Meltâ€“wall rock interaction in the mantle shown by silicate melt inclusions in peridotite xenoliths from the central Pannonian Basin (western Hungary). Island Arc, 2009, 18, 375-400.	1.1	15
40	Passive seismic experiment and receiver functions analysis to determine crustal structure at the contact of the northern Dinarides and southwestern Pannonian Basin. Geophysical Journal International, 2016, 205, 1420-1436.	2.4	15
41	Comment on â€œThe beginnings of hydrous mantle wedge meltingâ€ CB Till, TL Grove, AC Withers, Contributions to Mineralogy and Petrology, DOI 10.1007/s00410-011-0692-6. Contributions To Mineralogy and Petrology, 2012, 164, 1077-1081.	3.1	13
42	Constraints on the thickness and seismic properties of the lithosphere in an extensional setting (NÃ³grÃ¡d-GÃ¶mÃ¶r Volcanic Field, Northern Pannonian Basin). Acta Geodaetica Et Geophysica, 2015, 50, 133-149.	1.6	13
43	Quantitative analysis of H-species in anisotropic minerals by unpolarized infrared spectroscopy: An experimental evaluation. American Mineralogist, 2018, 103, 1761-1769.	1.9	12
44	Lateral and Vertical Heterogeneity in the Lithospheric Mantle at the Northern Margin of the Pannonian Basin Reconstructed From Peridotite Xenolith Microstructures. Journal of Geophysical Research: Solid Earth, 2019, 124, 6315-6336.	3.4	12
45	Water-bearing, high-pressure Ca-silicates. Earth and Planetary Science Letters, 2017, 469, 148-155.	4.4	11
46	Pargasite in fluid inclusions of mantle xenoliths from northeast Australia (Mt. Quincan): evidence of interaction with asthenospheric fluid. Chemical Geology, 2019, 508, 182-196.	3.3	11
47	Evidence for post-depositional diffusional loss of hydrogen in quartz phenocryst fragments within ignimbrites. American Mineralogist, 2017, 102, 1187-1201.	1.9	11
48	A seismic discontinuity in the upper mantle between the Eastern Alps and the Western Carpathians: Constraints from wide angle reflections and geological implications. Tectonophysics, 2011, 504, 122-134.	2.2	9
49	Water concentrations and hydrogen isotope compositions of alkaline basalt-hosted clinopyroxene megacrysts and amphibole clinopyroxenites: the role of structural hydroxyl groups and molecular water. Contributions To Mineralogy and Petrology, 2016, 171, 1.	3.1	9
50	Caprock analysis from the MihÃ¡lyi-RÃ©pcelak natural CO2 occurrence, Western Hungary. Environmental Earth Sciences, 2016, 75, 1.	2.7	9
51	Upper mantle xenoliths as sources of geophysical information: the PerÅŸani Mts. area as a case study. Acta Geodaetica Et Geophysica, 2018, 53, 415-438.	1.6	9
52	Phase relations and melting of nominally â€˜dryâ€™ residual eclogites with variable CaO/Na2O from 3 to 5â€“GPa and 1250 to 1500â€–Â°C; implications for refertilisation of upwelling heterogeneous mantle. Lithos, 2018, 314-315, 506-519.	1.4	8
53	Melting, fluid migration and fluid-rock interactions in the lower crust beneath the Bakony-Balaton Highland volcanic field: a silicate melt and fluid inclusion study. Mineralogy and Petrology, 2015, 109, 217-234.	1.1	7
54	Origin and weathering of landslide material in a loess area: a geochemical study of the Kulcs landslide, Hungary. Environmental Earth Sciences, 2016, 75, 1.	2.7	7

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55	Experimental Study of CO2-saturated Water â€“ Illite/Kaolinite/Montmorillonite System at 70-80 Â°C, 100-105 Bar. Energy Procedia, 2017, 114, 4934-4947.	1.8	7
56	3D P-wave velocity image beneath the Pannonian Basin using traveltime tomography. Acta Geodaetica Et Geophysica, 2019, 54, 373-386.	1.6	7
57	A Miocene Phreatoplinian eruption in the North-Eastern Pannonian Basin, Hungary: The JatÃ³ Member. Journal of Volcanology and Geothermal Research, 2020, 401, 106973.	2.1	6
58	Effect of metasomatism on the electrical resistivity of the lithospheric mantle â€“ An integrated research using magnetotelluric sounding and xenoliths beneath the NÃ³grÃ¡d-GÃ¶mÃ¶r Volcanic Field. Global and Planetary Change, 2021, 197, 103389.	3.5	6
59	A Lower Miocene pyroclastic-fall deposit from the BÃ¼kk Foreland Volcanic Area, Northern Hungary: Clues for an eastward-located source. Geologica Carpathica, 2021, 72, .	0.7	6
60	The transition zone between the Eastern Alps and the Pannonian basin imaged by ambient noise tomography. Tectonophysics, 2021, 805, 228770.	2.2	6
61	Long term measurements from the MÃ¡tra Gravitational and Geophysical Laboratory. European Physical Journal: Special Topics, 2019, 228, 1693-1743.	2.6	5
62	Probing tectonic processes with space geodesy in the south Carpathians: insights from archive SAR data. Acta Geodaetica Et Geophysica, 2018, 53, 331-345.	1.6	4
63	Geochemical evolution of the lithospheric mantle beneath the Styrian Basin (Western Pannonian) Tj ETQq1 1 0.784314 rgBT /Overlock	1.4	4
64	2H/1H measurements of amphiboles and nominally anhydrous minerals (clinopyroxene, garnet and) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5 spectrometry. Rapid Communications in Mass Spectrometry, 2017, 31, 2066-2072.	1.5	3
65	Hazai kÃ©pzÅ‘dmÃ©nyekbÅ‘l szeparÃ¡lt kvarcok jellemzÅ‘i az OSL kormeghatÃ¡rozÃ¡s szempontjÃ¡bÃ³l. FÃ¶ldtani KÃ¶zlÃ¶ny, 2020, 150, 61.	0.4	3
66	Uniform â€œwaterâ€•content in quartz phenocrysts from silicic pyroclastic fallout deposits â€“ implications on pre-eruptive conditions. European Journal of Mineralogy, 2021, 33, 571-589.	1.3	2
67	Iron isotope and trace metal variations during mantle metasomatism: In situ study on sulfide minerals from peridotite xenoliths from NÃ³grÃ¡d-GÃ¶mÃ¶r Volcanic Field (Northern Pannonian Basin). Lithos, 2021, 396-397, 106238.	1.4	2
68	A fÃ¶ldkÃ¶peny reolÃ³giai kutatÃ¡sa: mennyisÃ©gi Fourier transzformÃ¡ciÃ³s infravÃ¶rÃ¶s spektrometria alkalmazÃ¡sa egy PersÃ¡ny hegysÃ©gi xenolit pÃ©ldÃ¡jÃ¡n. FÃ¶ldtani KÃ¶zlÃ¶ny, 2019, 149, 233.	0.4	2
69	Origin of the South Australian Heat Flow Anomaly. Journal of the Virtual Explorer, 0, 20, .	0.0	1
70	Ãgy figyeljÃ¼k hazÃ¡nk fÃ¶ldjÃ©nek minden rezdÃ¼lÃ©sÃ©t. A CsillagÃ¡szati Ã©s FÃ¶ldtudomÃ¡nyi KutatÃ³kÃ¶zpont GeodÃ©ziai Ã©s Geofizikai IntÃ©zet KÃ¶vesligethy RadÃ³ SzeizmolÃ³giai ObszervatÃ³rium fejlÅ‘dÃ©se Ã©s kÃ¼ldetÃ©se 2013-tÃ³l napjainkig. Magyar TudomÃ¡ny, 0, , .	0.1	
71	Detailed Mineralogical and Petrographic Analysis of the Caprock from a Natural CO2 Occurrence in Hungary. Energy Procedia, 2017, 114, 4926-4933.	1.8	0
72	Metamorphic and deformation history of the Mecsekalja Zone around the SzentlÅ‘rinc-1 well using individual quartz grains from drilling chips. Central European Geology, 2018, 61, 85-108.	0.4	0

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73	On the use of nominally anhydrous minerals as phenocrysts in volcanic rocks: A review including a case study from the Carpathianâ€“Pannonian Region. Central European Geology, 2019, 62, 119-152.	0.4	0
74	TÃ¶bbvÃ¡ltozÃ³s adatelemzÃ©ssel kombinÃ¡lt gyengÃ¤tett teljes reflexiÃ³s infravÃ¶rÃ¶s spektroszkÃ³pia az Ã¡svÃ¡nyos Ã¶sszetÃ©tel vizsgÃ¡latÃ¡ban. FÃ¶ldtani KÃ¶zlÃ¶ny, 2018, 148, 161-178.	0.4	0