

# Rainer Abart

## List of Publications by Year in descending order

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114  
papers

2,680  
citations

186265

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138  
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138  
docs citations

138  
times ranked

2711  
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#	ARTICLE	IF	CITATIONS
1	Evolution of chemically induced cracks in alkali feldspar: thermodynamic analysis. <i>Physics and Chemistry of Minerals</i> , 2022, 49, 14.	0.8	4
2	Effect of alumina and silica content in the calcium aluminosilicoferrite $\text{Ca}_2(\text{Ca,Fe,Mg})_6(\text{Fe,Si,Al})_6\text{O}_{20}$ bonding phase on the strength of iron ore sinter. <i>Materials Chemistry and Physics</i> , 2021, 257, 123733.	4.0	1
3	Effect of chemically induced fracturing on the ice nucleation activity of alkali feldspar. <i>Atmospheric Chemistry and Physics</i> , 2021, 21, 11801-11814.	4.9	11
4	Formation pathways of oriented magnetite micro-inclusions in plagioclase from oceanic gabbro. <i>Contributions To Mineralogy and Petrology</i> , 2021, 176, 1.	3.1	7
5	On an alternative approach for simulating chemically induced crack pattern evolutions in a single crystal. <i>International Journal of Solids and Structures</i> , 2020, 202, 575-586.	2.7	2
6	Crystallographic and shape orientations of magnetite micro-inclusions in plagioclase. <i>Contributions To Mineralogy and Petrology</i> , 2020, 175, 1.	3.1	12
7	Multicomponent diffusion in ionic crystals: theoretical model and application to combined tracer- and interdiffusion in alkali feldspar. <i>Physics and Chemistry of Minerals</i> , 2020, 47, 35.	0.8	3
8	Spinodal decomposition in alkali feldspar studied by atom probe tomography. <i>Physics and Chemistry of Minerals</i> , 2020, 47, 30.	0.8	6
9	Intragranular deformation mechanisms in calcite deformed by high-pressure torsion at room temperature. <i>Mineralogy and Petrology</i> , 2020, 114, 105-118.	1.1	8
10	Determining the origin of inclusions in garnet: Challenges and new diagnostic criteria. <i>Numerische Mathematik</i> , 2020, 320, 753-789.	1.4	5
11	Synthesis and Mechanical Testing of Calcium Aluminosilicoferrite Crystals with High Alumina Content. <i>Metals</i> , 2019, 9, 906.	2.3	1
12	The effect of H <sub>2</sub> O fluid on relative component mobilities in a biminerale reaction rim in the system $\text{CaO-MgO-SiO}_2$ . <i>European Journal of Mineralogy</i> , 2019, 31, 61-72.	1.3	3
13	Diffusion-controlled crack propagation in alkali feldspar. <i>Physics and Chemistry of Minerals</i> , 2019, 46, 15-26.	0.8	13
14	Microstructural and textural evolution of calcite deformed to high shear strain by high-pressure torsion. <i>Journal of Structural Geology</i> , 2019, 118, 32-47.	2.3	5
15	Synthesis of monticellite-forsterite and merwinite-forsterite symplectites in the $\text{CaO-MgO-SiO}_2$ model system: influence of temperature and water content on microstructure evolution. <i>Contributions To Mineralogy and Petrology</i> , 2018, 173, 1.	3.1	11
16	An improved FIB sample preparation technique for site-specific plan-view specimens: A new cutting geometry. <i>Ultramicroscopy</i> , 2018, 184, 310-317.	1.9	57
17	Ca-rich garnets and associated symplectites in mafic peraluminous granulites from the Gföhl Nappe System, Austria. <i>Solid Earth</i> , 2018, 9, 797-819.	2.8	2
18	An Improved FIB Sample Preparation Technique for Site-specific Plan-view Specimens: A New Cutting Geometry. <i>Microscopy and Microanalysis</i> , 2018, 24, 824-825.	0.4	0

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19	Structure evolution of h.c.p./c.c.p. metal oxide interfaces in solid-state reactions. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2018, 74, 466-480.	0.1	5
20	Compositional, structural and vibrational spectroscopic characteristics of feldspar megacrysts in alkali basalts from southern Slovakia. <i>Journal of Geosciences (Czech Republic)</i> , 2018, , 215-226.	0.6	2
21	Reaction-induced fracturing in a hot pressed calcite-periclase aggregate. <i>Journal of Structural Geology</i> , 2017, 94, 116-135.	2.3	14
22	Potassium self-diffusion in a K-rich single-crystal alkali feldspar. <i>Physics and Chemistry of Minerals</i> , 2017, 44, 345-351.	0.8	14
23	Mantle xenoliths from Szentbenedéktó, Balaton: Geochemical and petrological constraints on the evolution of the lithospheric mantle underneath Pannonian Basin, Hungary. <i>Lithos</i> , 2017, 276, 30-44.	1.4	8
24	Microstructure of calcite deformed by high-pressure torsion: An X-ray line profile study. <i>Tectonophysics</i> , 2017, 721, 448-461.	2.2	8
25	Fe-Ti oxide micro-inclusions in clinopyroxene of oceanic gabbro: Phase content, orientation relations and petrogenetic implication. <i>Lithos</i> , 2017, 290-291, 104-115.	1.4	10
26	Growth, structure and stability of sputter-deposited MoS <sub>2</sub> thin films. <i>Beilstein Journal of Nanotechnology</i> , 2017, 8, 1115-1126.	2.8	44
27	Metamorphic mineral reactions: Porphyroblast, corona and symplectite growth. , 2017, , 469-540.		14
28	Diffusion: Some mathematical foundations and applications in mineralogy. , 2017, , 255-294.		1
29	Interlayer growth kinetics of a binary solid-solution based on the thermodynamic extremal principle: Application to the formation of spinel at periclase-corundum contacts. <i>Numerische Mathematik</i> , 2016, 316, 309-328.	1.4	6
30	Plagioclase hosted Fe-Ti-oxide micro-inclusions in an oceanic gabbro-plagiogranite association from the Mid Atlantic ridge at 13°34' N. <i>Numerische Mathematik</i> , 2016, 316, 85-109.	1.4	10
31	In Situ Observations of Phase Transitions in Metastable Nickel (Carbide)/Carbon Nanocomposites. <i>Journal of Physical Chemistry C</i> , 2016, 120, 22571-22584.	3.1	80
32	The structure of a propagating MgAl <sub>2</sub> O <sub>4</sub> /MgO interface: linked atomic- and μm-scale mechanisms of interface motion. <i>Philosophical Magazine</i> , 2016, 96, 2488-2503.	1.6	6
33	Hydration of periclase at 350 °C to 620 °C and 200 MPa: experimental calibration of reaction rate. <i>Mineralogy and Petrology</i> , 2016, 110, 1-10.	1.1	16
34	Ionic conductivity in gem-quality single-crystal alkali feldspar from the Eifel: temperature, orientation and composition dependence. <i>Physics and Chemistry of Minerals</i> , 2016, 43, 327-340.	0.8	9
35	Evolution of nanostructure and specific surface area during thermally driven dehydration of Mg(OH) <sub>2</sub> . <i>Physics and Chemistry of Minerals</i> , 2016, 43, 59-68.	0.8	22
36	Crystallographic orientation relationships in host-inclusion systems: New insights from large EBSD data sets. <i>American Mineralogist</i> , 2016, 101, 690-705.	1.9	20

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37	Rb/Sr isotopic and compositional retentivity of muscovite during deformation. <i>Lithos</i> , 2015, 227, 161-178.	1.4	32
38	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. <i>Mineralogy and Petrology</i> , 2015, 109, 217-234.	1.1	7
39	Garnet growth in frictional melts of the Ivrea Zone (Italy). <i>Italian Journal of Geosciences</i> , 2015, 134, 149-161.	0.8	6
40	Microstructure and texture evolution during growth of magnesio-aluminate spinel at corundum-periclase interfaces under uniaxial load: The effect of stress concentration on reaction progress. <i>Numerische Mathematik</i> , 2014, 314, 940-965.	1.4	9
41	Lattice strain across Na <sup>+</sup> K interdiffusion fronts in alkali feldspar: an electron back-scatter diffraction study. <i>Physics and Chemistry of Minerals</i> , 2014, 41, 795-804.	0.8	9
42	Localization of submicron inclusion re-equilibration at healed fractures in host garnet. <i>Contributions To Mineralogy and Petrology</i> , 2014, 168, 1.	3.1	13
43	Chemically induced fracturing in alkali feldspar. <i>Physics and Chemistry of Minerals</i> , 2014, 41, 1-16.	0.8	24
44	Mechanisms of myrmekite formation: case study from the Weinsberg granite, Moldanubian zone, Upper Austria. <i>Contributions To Mineralogy and Petrology</i> , 2014, 168, 1.	3.1	24
45	Sodium-potassium interdiffusion in potassium-rich alkali feldspar I: Full diffusivity tensor at 850 °C. <i>Numerische Mathematik</i> , 2014, 314, 1284-1299.	1.4	15
46	Sodium-potassium interdiffusion in potassium-rich alkali feldspar II: Composition- and temperature-dependence obtained from cation exchange experiments. <i>Numerische Mathematik</i> , 2014, 314, 1300-1318.	1.4	17
47	Upper- to greenschist facies intragrain deformation of albite in mylonitic meta-pegmatite and the influence of crystallographic anisotropy on microstructure formation. <i>Journal of Structural Geology</i> , 2014, 69, 47-58.	2.3	6
48	Growth of magnesio-aluminate spinel in thin-film geometry: in situ monitoring using synchrotron X-ray diffraction and thermodynamic model. <i>Physics and Chemistry of Minerals</i> , 2014, 41, 681-693.	0.8	11
49	Reaction kinetics of dolomite rim growth. <i>Contributions To Mineralogy and Petrology</i> , 2014, 167, 1.	3.1	11
50	Garnet Breakdown, Symplectite Formation and Melting in Basanite-hosted Peridotite Xenoliths from Zinst (Bavaria, Bohemian Massif). <i>Journal of Petrology</i> , 2013, 54, 1691-1723.	2.8	29
51	Diffusion and solubility of hydrogen and water in periclase. <i>Physics and Chemistry of Minerals</i> , 2013, 40, 19-27.	0.8	14
52	Oriented chromite-diopside symplectic inclusions in olivine from lunar regolith delivered by Luna-24 mission. <i>Geochimica Et Cosmochimica Acta</i> , 2013, 104, 84-98.	3.9	18
53	TiO <sub>2</sub> exsolution from garnet by open-system precipitation: evidence from crystallographic and shape preferred orientation of rutile inclusions. <i>Contributions To Mineralogy and Petrology</i> , 2013, 166, 211-234.	3.1	43
54	Experimental growth of diopside + merwinite reaction rims: The effect of water on microstructure development. <i>American Mineralogist</i> , 2012, 97, 220-230.	1.9	18

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55	Modeling the role of sources and sinks for vacancies on the kinetics of diffusive phase transformation in binary systems with several stoichiometric phases. <i>Philosophical Magazine Letters</i> , 2012, 92, 67-76.	1.2	4
56	Intracrystalline microstructures in alkali feldspars from fluid-deficient felsic granulites: a mineral chemical and TEM study. <i>Contributions To Mineralogy and Petrology</i> , 2012, 164, 715-729.	3.1	15
57	Oriented feldspar-feldspathoid intergrowths in rocks of the Khibiny massif: genetic implications. <i>Mineralogy and Petrology</i> , 2012, 106, 1-17.	1.1	3
58	Thermodynamic model for growth of reaction rims with lamellar microstructure. <i>American Mineralogist</i> , 2012, 97, 231-240.	1.9	12
59	Exsolution by spinodal decomposition in multicomponent mineral solutions. <i>Acta Materialia</i> , 2012, 60, 5481-5493.	7.9	31
60	Experimental Na/K exchange between alkali feldspar and an NaCl-KCl salt melt: chemically induced fracturing and element partitioning. <i>Contributions To Mineralogy and Petrology</i> , 2012, 164, 341-358.	3.1	41
61	Thermodynamic Model For Reaction Rim Growth: Interface Reaction and Diffusion Control. <i>Numerische Mathematik</i> , 2011, 311, 517-527.	1.4	17
62	Growth of plagioclase rims around metastable kyanite during decompression of high-pressure felsic granulites (Bohemian Massif). <i>Journal of Metamorphic Geology</i> , 2011, 29, 1003-1018.	3.4	26
63	Carbonatite melt inclusions in coexisting magnetite, apatite and monticellite in Kerimasi calciocarbonatite, Tanzania: melt evolution and petrogenesis. <i>Contributions To Mineralogy and Petrology</i> , 2011, 161, 177-196.	3.1	90
64	Experimental growth of kermanite reaction rims between wollastonite and monticellite: evidence for volume diffusion control. <i>Contributions To Mineralogy and Petrology</i> , 2011, 161, 389-399.	3.1	27
65	Grain boundary and volume diffusion experiments in yttrium aluminium garnet bicrystals at 1,723 K: a miniaturized study. <i>Contributions To Mineralogy and Petrology</i> , 2011, 162, 739-749.	3.1	32
66	The behavior of Mg, Fe, and Ni during the replacement of olivine by orthopyroxene: experiments relevant to mantle metasomatism. <i>Mineralogy and Petrology</i> , 2011, 103, 1-8.	1.1	10
67	Volume diffusion of Ytterbium in YAG: thin-film experiments and combined TEM-RBS analysis. <i>Physics and Chemistry of Minerals</i> , 2010, 37, 751-760.	0.8	14
68	Symplectite formation during decompression induced garnet breakdown in lower crustal mafic granulite xenoliths: mechanisms and rates. <i>Contributions To Mineralogy and Petrology</i> , 2010, 159, 293-314.	3.1	46
69	Redistribution of HFSE elements during rutile replacement by titanite. <i>Contributions To Mineralogy and Petrology</i> , 2010, 160, 279-295.	3.1	59
70	Reaction rim growth in the MgO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> system under uniaxial stress. <i>Mineralogy and Petrology</i> , 2010, 99, 263-277.	1.1	28
71	Modeling of diffusional phase transformation in multi-component systems with stoichiometric phases. <i>Acta Materialia</i> , 2010, 58, 2905-2911.	7.9	18
72	Enhancement of solid-state reaction rates by non-hydrostatic stress effects on polycrystalline diffusion kinetics. <i>American Mineralogist</i> , 2010, 95, 1399-1407.	1.9	27

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73	Exsolution by spinodal decomposition I: Evolution equation for binary mineral solutions with anisotropic interfacial energy. <i>Numerische Mathematik</i> , 2009, 309, 431-449.	1.4	18
74	Complex chemical zoning in eclogite facies garnet reaction rims: the role of grain boundary diffusion. <i>Mineralogy and Petrology</i> , 2009, 95, 303-313.	1.1	9
75	Evidence for xenolith-host basalt interaction from chemical patterns in Fe-Ti-oxides from mafic granulite xenoliths of the Bakony-Balaton Volcanic field (W-Hungary). <i>Mineralogy and Petrology</i> , 2009, 95, 219-234.	1.1	19
76	Garnet reaction rims from the breakdown of Staurolite in polymetamorphic micashists from the Rappold complex, Austroalpine basement, Eastern Alps. <i>Mineralogy and Petrology</i> , 2009, 97, 189-201.	1.1	5
77	Compositional zoning of garnet porphyroblasts from the polymetamorphic WÄ¶lz Complex, Eastern Alps. <i>Mineralogy and Petrology</i> , 2009, 97, 173-188.	1.1	15
78	Perthite microstructure in magmatic alkali feldspar with oscillatory zoning; Weinsberg Granite, Upper Austria. <i>Mineralogy and Petrology</i> , 2009, 97, 251-263.	1.1	13
79	Matrix rheology effects on reaction rim growth I: evidence from orthopyroxene rim growth experiments. <i>Journal of Metamorphic Geology</i> , 2009, 27, 71-82.	3.4	36
80	Matrix rheology effects on reaction rim growth II: coupled diffusion and creep model. <i>Journal of Metamorphic Geology</i> , 2009, 27, 83-91.	3.4	31
81	Exsolution by spinodal decomposition II: Perthite formation during slow cooling of anatexites from Ngorongoro, Tanzania. <i>Numerische Mathematik</i> , 2009, 309, 450-475.	1.4	42
82	Thermodynamic model for diffusion controlled reaction rim growth in a binary system: Application to the forsterite-enstatite-quartz system. <i>Numerische Mathematik</i> , 2009, 309, 114-131.	1.4	31
83	The Glarus thrust: excursion guide and report of a field trip of the Swiss Tectonic Studies Group (Swiss Geological Society, 14.-16. 09. 2006). <i>Swiss Journal of Geosciences</i> , 2008, 101, 323-340.	1.2	23
84	Fluid flow and rock alteration along the Glarus thrust. <i>Swiss Journal of Geosciences</i> , 2008, 101, 251-268.	1.2	16
85	THERIA_G: a software program to numerically model prograde garnet growth. <i>Contributions To Mineralogy and Petrology</i> , 2008, 155, 657-671.	3.1	86
86	Prograde garnet growth along complex P-T paths: results from numerical experiments on polyphase garnet from the WÄ¶lz Complex (Austroalpine basement). <i>Contributions To Mineralogy and Petrology</i> , 2008, 155, 673-688.	3.1	56
87	Asymmetrically zoned reaction rims: assessment of grain boundary diffusivities and growth rates related to natural diffusion-controlled mineral reactions. <i>Journal of Metamorphic Geology</i> , 2008, 26, 99-120.	3.4	32
88	Coupling forward modelling of garnet growth with monazite geochronology: an application to the Rappold Complex (Austroalpine crystalline basement). <i>Journal of Metamorphic Geology</i> , 2008, 26, 775-793.	3.4	36
89	Carbon isotope record of the P/T boundary and the Lower Triassic in the Southern Alps: Evidence for rapid changes in storage of organic carbon. <i>Palaeogeography, Palaeoclimatology, Palaeoecology</i> , 2007, 252, 347-354.	2.3	125
90	Contact metamorphism and selective metasomatism of the layered Bellerophon Formation in the eastern Monzoni contact aureole, northern Italy. <i>Mineralogy and Petrology</i> , 2007, 91, 25-53.	1.1	14

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91	Diffusion along interphase boundaries and its effect on retrograde zoning patterns of metamorphic minerals. Contributions To Mineralogy and Petrology, 2007, 154, 205-216.	3.1	15
92	Enhanced mass transfer through short-circuit diffusion: Growth of garnet reaction rims at eclogite facies conditions. American Mineralogist, 2006, 91, 1024-1038.	1.9	54
93	Characterization of polymetamorphism in the Austroalpine basement east of the Tauern Window using garnet isopleth thermobarometry. Journal of Metamorphic Geology, 2006, 24, 451-475.	3.4	153
94	The chemical variability at the surface of Mars: Implication for sediment formation and rock weathering. Icarus, 2006, 183, 10-29.	2.5	10
95	THERMAL METAMORPHISM. , 2005, , 499-502.		0
96	An ultraviolet simulator for the incident Martian surface radiation and its applications. International Journal of Astrobiology, 2005, 4, 241-249.	1.6	10
97	Phase Relations and Chemical Composition of Phengite and Paragonite in Pelitic Schists During Decompression: a Case Study from the Monte Rosa Nappe and Camugheraâ€“Moncucco Unit, Western Alps. Journal of Petrology, 2005, 46, 2145-2166.	2.8	20
98	A Quaternary Solution Model for White Micas Based on Natural Coexisting Phengiteâ€“Paragonite Pairs. Journal of Petrology, 2005, 46, 2129-2144.	2.8	49
99	Deformation, mass transfer and mineral reactions in an eclogite facies shear zone in a polymetamorphic metapelite (Monte Rosa nappe, western Alps). Journal of Metamorphic Geology, 2004, 22, 97-118.	3.4	53
100	Silicon and oxygen self diffusion in enstatite polycrystals: the Milke et al. (2001) rim growth experiments revisited. Contributions To Mineralogy and Petrology, 2004, 147, 633-646.	3.1	42
101	Loss of water from Mars:. Icarus, 2003, 165, 9-25.	2.5	197
102	Oxygen isotope trends and anomalies in granitoids of the Tibetan plateau. Journal of Asian Earth Sciences, 2002, 21, 241-250.	2.3	18
103	Title is missing!. Mineralogy and Petrology, 2002, 76, 99-120.	1.1	23
104	Oxygen, carbon and strontium isotope systematics in two profiles across the Glarus thrust: implications for fluid flow. Contributions To Mineralogy and Petrology, 2002, 143, 192-208.	3.1	19
105	Metasomatic coronas around hornblendite xenoliths in granulite facies marble, Ivrea zone, N Italy, I: constraints on component mobility. Contributions To Mineralogy and Petrology, 2001, 141, 473-493.	3.1	28
106	Metasomatic coronas around hornblendite xenoliths in granulite facies marble, Ivrea zone, N Italy. II: Oxygen isotope patterns. Contributions To Mineralogy and Petrology, 2001, 141, 494-504.	3.1	5
107	Implications of kinetically controlled mineral-fluid exchange on the geometry of stable-isotope fronts. European Journal of Mineralogy, 2000, 12, 1069-1082.	1.3	18
108	Fluid inclusions related to Variscan and Alpine metamorphism in the Austroalpine i;1/2ztztal Basement, Eastern Alps. Mineralogy and Petrology, 1999, 65, 29-49.	1.1	9

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109	Stable isotope systematics in the monzoni contact aureole, N-tialy. Science Bulletin, 1998, 43, 1-1.	1.7	1
110	Geometry of stable isotope fronts: Multiple monitors and tracers. Science Bulletin, 1998, 43, 1-1.	1.7	1
111	Contrasting Eoalpine P-T evolutions in the southern Koralpe, Eastern Alps. Mineralogy and Petrology, 1997, 60, 61-80.	1.1	24
112	Isotopic Disequilibrium During Metasomatic Vein Formation. Mineralogical Magazine, 1994, 58A, 1-2.	1.4	1
113	Radiotracer Experiments and Monte Carlo Simulations of Sodium Diffusion in Alkali Feldspar: Evidence against the Vacancy Mechanism. Defect and Diffusion Forum, 0, 363, 79-84.	0.4	12
114	Carbonatite-melilitite-phosphate immiscible melts from the aragonite stability field entrained from the mantle by a Pliocene basalt. Mineralogy and Petrology, 0, , .	1.1	4