SÃ©bastien Merkel

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/8506220/publications.pdf

Version: 2024-02-01

81	2,877	182225	198040
papers	citations	30 h-index	52 g-index

86	86	86	2365
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Deformation of Polycrystalline MgO Up to 8.3ÂGPa and 1270ÂK: Microstructures, Dominant Slip-Systems, and Transition to Grain Boundary Sliding. Frontiers in Earth Science, 2022, 10, .	0.8	1
2	Deformation and slip systems of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>CaCl</mml:mi><mml:mn>2</mml:mn></mml:msub></mm -type <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MnO</mml:mi><mml:mn>2</mml:mn></mml:msub></mm under high pressure. Physical Review Materials, 2022, 6, .	0.9	0
3	X-ray Free Electron Laser-Induced Synthesis of Îµ-Iron Nitride at High Pressures. Journal of Physical Chemistry Letters, 2021, 12, 3246-3252.	2.1	14
4	Novel experimental setup for megahertz X-ray diffraction in a diamond anvil cell at the High Energy Density (HED) instrument of the European X-ray Free-Electron Laser (EuXFEL). Journal of Synchrotron Radiation, 2021, 28, 688-706.	1.0	21
5	Ultrafast X-ray Diffraction Study of a Shock-Compressed Iron Meteorite above 100 GPa. Minerals (Basel, Switzerland), 2021, 11, 567.	0.8	0
6	Deformation of NaCoF₃ perovskite and post-perovskite up to 30â€‰GPa and 1013â€‰K: implications for plastic deformation and transformation mechanism. European Journal of Mineralogy, 2021, 33, 591-603.	0.4	1
7	Femtosecond Visualization of hcp-Iron Strength and Plasticity under Shock Compression. Physical Review Letters, 2021, 127, 205501.	2.9	21
8	Microstructural effects and mechanism of bcc-hcp-bcc transformations in polycrystalline iron. Physical Review B, 2020, 102, .	1.1	23
9	High pressure exploration in the Liâ€“Lnâ€“Vâ€“O system. Dalton Transactions, 2020, 49, 13663-13670.	1.6	2
10	An improved setup for radial diffraction experiments at high pressures and high temperatures in a resistive graphite-heated diamond anvil cell. Review of Scientific Instruments, 2020, 91, 045121.	0.6	11
11	The equation of state of TaC0.99 by X-ray diffraction in radial scattering geometry to 32â€‰GPa and 1073â€‰K. Journal of Applied Physics, 2019, 126, .	1.1	2
12	Olivine intergranular plasticity at mantle pressures and temperatures. Comptes Rendus - Geoscience, 2019, 351, 80-85.	0.4	2
13	Kinetics and detectability of the bridgmanite to post-perovskite transformation in the Earth's Dâ€³ layer. Nature Communications, 2019, 10, 5680.	5.8	8
14	High-pressure yield strength of rocksalt structures using quartz Raman piezometry. Comptes Rendus - Geoscience, 2019, 351, 71-79.	0.4	4
15	Evidence for {100}<011> slip in ferropericlase in Earth's lower mantle from high-pressure/high-temperature experiments. Earth and Planetary Science Letters, 2018, 489, 251-257.	1.8	26
16	Detecting seismic anisotropy above the 410â€¯km discontinuity using reflection coefficients of underside reflections. Physics of the Earth and Planetary Interiors, 2018, 274, 170-183.	0.7	7
17	Dislocations and Plastic Deformation in MgO Crystals: A Review. Crystals, 2018, 8, 240.	1.0	62
18	Kinetic D/H fractionation during hydration and dehydration of silicate glasses, melts and nominally anhydrous minerals. Geochimica Et Cosmochimica Acta, 2018, 233, 14-32.	1.6	23

#	Article	IF	Citations
19	Elasto-viscoplastic self consistent modeling of the ambient temperature plastic behavior of periclase deformed up to 5.4 GPa. Journal of Applied Physics, 2017, 122, .	1.1	20
20	Reliability of multigrain indexing for orthorhombic polycrystals above 1â€…Mbar: application to MgSiO₃ post-perovskite. Journal of Applied Crystallography, 2017, 50, 120-130.	1.9	7
21	Multiscale model of global innerâ€core anisotropy induced by hcp alloy plasticity. Geophysical Research Letters, 2016, 43, 1084-1091.	1.5	17
22	Deformation Behavior across the Zircon-Scheelite Phase Transition. Physical Review Letters, 2016, 117, 135701.	2.9	37
23	Evolution of grain sizes and orientations during phase transitions in hydrous Mg₂SiO₄. Journal of Geophysical Research: Solid Earth, 2016, 121, 7161-7176.	1.4	14
24	Amorphous boron composite gaskets for in situ high-pressure and high-temperature studies. High Pressure Research, 2016, 36, 564-574.	0.4	7
25	Textures in deforming forsterite aggregates up to 8ÂGPa and 1673ÂK. Physics and Chemistry of Minerals, 2016, 43, 409-417.	0.3	2
26	Mechanism of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Î±</mml:mi><mml:mo>â†’</mml:mo><mml:mi>Îµ</mml:mi></mml:mrow></mml:math> transformation in iron. Physical Review B, 2015, 91, .	1.1	50
27	Is inner core seismic anisotropy a marker for plastic flow of cubic iron?. Geophysical Research Letters, 2015, 42, 1326-1333.	1.5	15
28	Deformation of forsterite polycrystals at mantle pressure: Comparison with Fe-bearing olivine and the effect of iron on its plasticity. Physics of the Earth and Planetary Interiors, 2015, 240, 95-104.	0.7	15
29	Effective viscoplastic behavior of polycrystalline aggregates lacking four independent slip systems inferred from homogenization methods; application to olivine. Journal of the Mechanics and Physics of Solids, 2015, 83, 199-220.	2.3	17
30	Multifit/Polydefix: a framework for the analysis of polycrystal deformation using X-rays. Journal of Applied Crystallography, 2015, 48, 1307-1313.	1.9	23
31	In situ monitoring of phase transformation microstructures at Earth's mantle pressure and temperature using multi-grain XRD. Journal of Applied Crystallography, 2015, 48, 1346-1354.	1.9	15
32	Three-dimensional X-ray diffraction in the diamond anvil cell: application to stishovite. High Pressure Research, 2014, 34, 158-166.	0.4	14
33	Earth's inner core. Comptes Rendus - Geoscience, 2014, 346, .	0.4	0
34	Seismic response and anisotropy of a model hcp iron inner core. Comptes Rendus - Geoscience, 2014, 346, 148-157.	0.4	10
35	Multiscale modeling of upper mantle plasticity: From single-crystal rheology to multiphase aggregate deformation. Physics of the Earth and Planetary Interiors, 2014, 228, 232-243.	0.7	15
36	Polycrystalline olivine rheology in dislocation creep: Revisiting experimental data to 8.1GPa. Physics of the Earth and Planetary Interiors, 2014, 228, 211-219.	0.7	13

#	Article	IF	Citations
37	Shear wave anisotropy in textured phase D and constraints on deep water recycling in subduction zones. Earth and Planetary Science Letters, 2013, 377-378, 13-22.	1.8	17
38	In situ radial X-ray diffraction study of texture and stress during phase transformations in bcc-, fcc- and hcp-iron up to 36 GPa and 1000 K. Acta Materialia, 2013, 61, 5144-5151.	3.8	37
39	Axial temperature gradient and stress measurements in the deformation-DIA cell using alumina pistons. Review of Scientific Instruments, 2013, 84, 043906.	0.6	39
40	Single-crystal diffraction at the Extreme Conditions beamline P02.2: procedure for collecting and analyzing high-pressure single-crystal data. Journal of Synchrotron Radiation, 2013, 20, 711-720.	1.0	67
41	Earth's inner weakness. Nature Geoscience, 2013, 6, 514-515.	5.4	0
42	Texture and elastic strains in hcp-iron plastically deformed up to 17.5 GPa and 600 K: experiment and model. Modelling and Simulation in Materials Science and Engineering, 2012, 20, 024005.	0.8	27
43	High resolution threeâ€dimensional Xâ€ray diffraction study of dislocations in grains of MgGeO₃ postâ€perovskite at 90 GPa. Journal of Geophysical Research, 2012, 117, .	3.3	42
44	Deformation of olivine under mantle conditions: An in situ highâ€pressure, highâ€temperature study using monochromatic synchrotron radiation. Journal of Geophysical Research, 2012, 117, .	3.3	34
45	Significance of mechanical twinning in hexagonal metals at high pressure. Acta Materialia, 2012, 60, 430-442.	3.8	26
46	In situquantitative analysis of stress and texture development in forsterite aggregates deformed at 6â€…GPa and 1373â€…K. Journal of Applied Crystallography, 2012, 45, 263-271.	1.9	15
47	Texturing in Earthâ€™s inner core due to preferential growth in its equatorial belt. Physics of the Earth and Planetary Interiors, 2011, 188, 173-184.	0.7	20
48	Microstructures and rheology of the Earth's upper mantle inferred from a multiscale approach. Comptes Rendus Physique, 2010, 11, 304-315.	0.3	26
49	Deformation of MnGeO₃ postâ€perovskite at lower mantle pressure and temperature. Geophysical Research Letters, 2010, 37, .	1.5	24
50	Radial Diffraction in the Diamond Anvil Cell: Methods and Applications. NATO Science for Peace and Security Series B: Physics and Biophysics, 2010, , 111-122.	0.2	4
51	Experimental method for in situ determination of material textures at simultaneous high pressure and high temperature by means of radial diffraction in the diamond anvil cell. Review of Scientific Instruments, 2009, 80, 104501.	0.6	43
52	In siturheological measurements at extreme pressure and temperature using synchrotron X-ray diffraction and radiography. Journal of Synchrotron Radiation, 2009, 16, 748-756.	1.0	25
53	Diamond anvil cell deformation of CaSiO3 perovskite up to 49GPa. Physics of the Earth and Planetary Interiors, 2009, 174, 159-164.	0.7	25
54	Modeling analysis of the influence of plasticity on high pressure deformation of hcp-Co. Physical Review B, 2009, 79, .	1.1	66

#	Article	IF	Citations
55	Deformation of (Mg,Fe)SiO3 Post-Perovskite and D'' Anisotropy. Science, 2007, 316, 1729-1732.	6.0	139
56	High-Pressure Creep of Serpentine, Interseismic Deformation, and Initiation of Subduction. Science, 2007, 318, 1910-1913.	6.0	331
57	Lattice preferred orientation in CaIrO3 perovskite and post-perovskite formed by plastic deformation under pressure. Physics and Chemistry of Minerals, 2007, 34, 679-686.	0.3	41
58	Quantitative Rietveld texture analysis of CaSiO3perovskite deformed in a diamond anvil cell. Journal of Physics Condensed Matter, 2006, 18, S995-S1005.	0.7	21
59	Lattice preferred orientation and stress in polycrystalline hcp-Co plastically deformed under high pressure. Journal of Applied Physics, 2006, 100, 023510.	1.1	44
60	Elastic anisotropy in hcp metals at high pressure and the sound wave anisotropy of the Earth's inner core. Geophysical Research Letters, 2006, 33, .	1.5	39
61	Texture development and elastic stresses in magnesiowÅ±stite at high pressure. Physics and Chemistry of Minerals, 2006, 33, 84-97.	0.3	29
62	Effect of lattice preferred orientation on lattice strains in polycrystalline materials deformed under high pressure: Application to hcp-Co. Journal of Physics and Chemistry of Solids, 2006, 67, 2119-2131.	1.9	9
63	Deformation textures produced in diamond anvil experiments, analysed in radial diffraction geometry. Journal of Physics Condensed Matter, 2006, 18, S933-S947.	0.7	42
64	Equation of state and phase transition in KAlSi3O8 hollandite at high pressure. American Mineralogist, 2006, 91, 327-332.	0.9	37
65	Plastic Deformation of MgGeO3 Post-Perovskite at Lower Mantle Pressures. Science, 2006, 311, 644-646.	6.0	143
66	X-ray diffraction evaluation of stress in high pressure deformation experiments. Journal of Physics Condensed Matter, 2006, 18, S949-S962.	0.7	30
67	X-ray diffraction study of the single-crystal elastic moduli of Îµ-Fe up to 30 GPa. Journal of Geophysical Research, 2005, 110, .	3.3	37
68	X-ray transparent gasket for diamond anvil cell high pressure experiments. Review of Scientific Instruments, 2005, 76, 046109.	0.6	79
69	Aggregate and single-crystalline elasticity of hcp cobalt at high pressure. Physical Review B, 2005, 72, .	1.1	59
70	Corrigendum to â€œDeformation of polycrystalline iron up to 30â€‰GPa and 1000â€‰Kâ€•[Phys. Earth Planet Inter. 145 (2004) 239â€“251]. Physics of the Earth and Planetary Interiors, 2005, 150, 351-352.	0.7	0
71	The mantle deformed. Nature, 2004, 428, 812-813.	13.7	3
72	A new high-pressure form of KAlSi3O8under lower mantle conditions. Geophysical Research Letters, 2004, 31, .	1.5	38

#	Article	IF	Citations
73	Deformation of polycrystalline iron up to 30GPa and 1000K. Physics of the Earth and Planetary Interiors, 2004, 145, 239-251.	0.7	72
74	Deformation of (Mg0.9,Fe0.1)SiO3 Perovskite aggregates up to 32 GPa. Earth and Planetary Science Letters, 2003, 209, 351-360.	1.8	88
75	Deformation of polycrystalline MgO at pressures of the lower mantle. Journal of Geophysical Research, 2002, 107, ECV 3-1-ECV 3-17.	3.3	207
76	Equation of state, elasticity, and shear strength of pyrite under high pressure. Physics and Chemistry of Minerals, 2002, 29, 1-9.	0.3	53
77	Effects of texture on the determination of elasticity of polycrystalline Ïµ-iron from diffraction measurements. Earth and Planetary Science Letters, 2001, 194, 201-212.	1.8	40
78	A Physical Basis for Time Clustering of Large Earthquakes. Bulletin of the Seismological Society of America, 2001, 91, 1685-1693.	1.1	32
79	Raman Spectroscopy of Iron to 152 Gigapascals: Implications for Earth's Inner Core. Science, 2000, 288, 1626-1629.	6.0	130
80	Finite-element modeling of diamond deformation at multimegabar pressures. Applied Physics Letters, 1999, 74, 656-658.	1.5	75
81	Plastic deformation of minerals at high pressure. , 0, , 339-355.		2