

Marco Merlini

List of Publications by Year in descending order

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113
papers

3,017
citations

159358

30
h-index

214527

47
g-index

116
all docs

116
docs citations

116
times ranked

3691
citing authors

#	ARTICLE	IF	CITATIONS
1	Discovery of a Superhard Iron Tetraboride Superconductor. <i>Physical Review Letters</i> , 2013, 111, 157002.	2.9	192
2	Electroactive Ionic Soft Actuators with Monolithically Integrated Gold Nanocomposite Electrodes. <i>Advanced Materials</i> , 2017, 29, 1606109.	11.1	108
3	Structures of dolomite at ultrahigh pressure and their influence on the deep carbon cycle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 13509-13514.	3.3	89
4	Stability of iron-bearing carbonates in the deep Earth's interior. <i>Nature Communications</i> , 2017, 8, 15960.	5.8	84
5	Single-crystal diffraction at megabar conditions by synchrotron radiation. <i>High Pressure Research</i> , 2013, 33, 511-522.	0.4	82
6	Chukanovite, Fe ₂ (CO ₃)(OH) ₂ , a new mineral from the weathered iron meteorite Dronino. <i>European Journal of Mineralogy</i> , 2007, 19, 891-898.	0.4	79
7	Effect of chemistry on the compressibility of silicate perovskite in the lower mantle. <i>Earth and Planetary Science Letters</i> , 2012, 333-334, 181-190.	1.8	78
8	Single-crystal diffraction at the Extreme Conditions beamline P02.2: procedure for collecting and analyzing high-pressure single-crystal data. <i>Journal of Synchrotron Radiation</i> , 2013, 20, 711-720.	1.0	67
9	Tricalcium aluminate hydration in additivated systems. A crystallographic study by SR-XRPD. <i>Cement and Concrete Research</i> , 2008, 38, 477-486.	4.6	66
10	Phase development in conventional and active belite cement pastes by Rietveld analysis and chemical constraints. <i>Cement and Concrete Research</i> , 2009, 39, 833-842.	4.6	65
11	Single-crystal X-ray diffraction at megabar pressures and temperatures of thousands of degrees. <i>High Pressure Research</i> , 2010, 30, 620-633.	0.4	65
12	Depth of formation of CaSiO ₃ -walsstromite included in super-deep diamonds. <i>Lithos</i> , 2016, 265, 138-147.	0.6	55
13	High-pressure thermo-elastic properties of beryl (Al ₄ Be ₆ Si ₁₂ O ₃₆) from ab initio calculations, and observations about the source of thermal expansion. <i>Physics and Chemistry of Minerals</i> , 2011, 38, 223-239.	0.3	52
14	The crystal structures of Mg ₂ Fe ₂ C ₄ O ₁₃ , with tetrahedrally coordinated carbon, and Fe ₁₃ O ₁₉ , synthesized at deep mantle conditions. <i>American Mineralogist</i> , 2015, 100, 2001-2004.	0.9	51
15	Portable double-sided laser-heating system for Mössbauer spectroscopy and X-ray diffraction experiments at synchrotron facilities with diamond anvil cells. <i>Review of Scientific Instruments</i> , 2012, 83, 124501.	0.6	50
16	Fe ³⁺ spin transition in CaFe ₂ O ₄ at high pressure. <i>American Mineralogist</i> , 2010, 95, 200-203.	0.9	44
17	Synthesis of calcium oxalate trihydrate: New data by vibrational spectroscopy and synchrotron X-ray diffraction. <i>Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy</i> , 2015, 150, 721-730.	2.0	44
18	Bottom-up engineering of the surface roughness of nanostructured cubic zirconia to control cell adhesion. <i>Nanotechnology</i> , 2012, 23, 475101.	1.3	43

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19	Hydrophobizing coatings for cultural heritage. A detailed study of resin/stone surface interaction. Applied Physics A: Materials Science and Processing, 2014, 116, 341-348.	1.1	43
20	Dolomite-IV: Candidate structure for a carbonate in the Earth's lower mantle. American Mineralogist, 2017, 102, 1763-1766.	0.9	42
21	XAS and GIXRD Study of Co Sites in CoAl_2O_4 Layers Grown by MOCVD. Chemistry of Materials, 2010, 22, 1933-1942.	3.2	41
22	Magnesium silicate perovskite and effect of iron oxidation state on its bulk sound velocity at the conditions of the lower mantle. Earth and Planetary Science Letters, 2014, 393, 182-186.	1.8	39
23	Thermal expansion and phase transitions in Åkermanite and gehlenite . Physics and Chemistry of Minerals, 2005, 32, 189-196.	0.3	35
24	Solvent Induced Pseudopolymorphism in a Calixarene-Based Porous Host Framework. Crystal Growth and Design, 2010, 10, 1527-1533.	1.4	34
25	Growth of $\text{Cu}_2\text{MnSnS}_4$ PV absorbers by sulfurization of evaporated precursors. Journal of Alloys and Compounds, 2017, 693, 95-102.	2.8	34
26	Diammonium hydrogenphosphate for the consolidation of building materials. Investigation of newly-formed calcium phosphates. Construction and Building Materials, 2019, 195, 557-563.	3.2	34
27	High-temperature behaviour of melilite : in situ X-ray diffraction study of gehlenite - Åkermanite - Na melilite solid solution. Physics and Chemistry of Minerals, 2008, 35, 147-155.	0.3	32
28	Thermal expansion and stability of Ti_2SC in air and inert atmospheres. Journal of Alloys and Compounds, 2009, 469, 395-400.	2.8	32
29	A new hydrous Al-bearing pyroxene as a water carrier in subduction zones. Earth and Planetary Science Letters, 2011, 310, 422-428.	1.8	32
30	On the crystal structure and compressional behavior of talc: a mineral of interest in petrology and material science. Physics and Chemistry of Minerals, 2013, 40, 145-156.	0.3	32
31	Puzzling calcite-III dimorphism: crystallography, high-pressure behavior, and pathway of single-crystal transitions. Physics and Chemistry of Minerals, 2015, 42, 29-43.	0.3	32
32	High temperature stability of $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3\lambda}$ and $\text{La}_{0.6}\text{Sr}_{0.4}\text{Co}_{1}\text{Fe}_{0.3}\text{O}_{3\lambda}$ oxygen separation perovskite membranes. Journal of the European Ceramic Society, 2016, 36, 1679-1690.	2.8	32
33	Effect of high pressure on the crystal structure and electronic properties of magnetite below 25 GPa. American Mineralogist, 2012, 97, 128-133.	0.9	31
34	Single-crystal diffraction at the high-pressure Indo-Italian beamline Xpress at Elettra, Trieste. Journal of Synchrotron Radiation, 2020, 27, 222-229.	1.0	31
35	Evidence of interspersed co-existing CaCO_3 -III and CaCO_3 -IIIb structures in polycrystalline CaCO_3 at high pressure. Mineralogical Magazine, 2014, 78, 225-233.	0.6	30
36	High-pressure compressibility and thermal expansion of aragonite. American Mineralogist, 2016, 101, 1651-1658.	0.9	30

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37	Polychrome glass from Etruscan sites: first non-destructive characterization with synchrotron $\hat{1}/4$ -XRF, $\hat{1}/4$ -XANES and XRPD. Applied Physics A: Materials Science and Processing, 2008, 92, 127-135.	1.1	29
38	Pressure-induced isostructural phase transformation in $\hat{1}/3$ -B28. Physical Review B, 2010, 82, .	1.1	27
39	Phase transition at high pressure in $\text{Cu}_{2}\text{CO}_{3}(\text{OH})_{2}$ related to the reduction of the Jahn-Teller effect. Acta Crystallographica Section B: Structural Science, 2012, 68, 266-274.	1.8	27
40	The high-pressure stability of chlorite and other hydrates in subduction mĂ©langes: experiments in the system $\text{Cr}_{2}\text{O}_{3}\text{-MgO-Al}_{2}\text{O}_{3}\text{-SiO}_{2}\text{-H}_{2}\text{O}$. Contributions To Mineralogy and Petrology, 2014, 167, 1.	1.2	27
41	The early hydration and the set of Portland cements: <i>In situ</i> X-ray powder diffraction studies. Powder Diffraction, 2007, 22, 201-208.	0.4	26
42	High-pressure structural studies of eskolaite by means of single-crystal X-ray diffraction. American Mineralogist, 2012, 97, 1764-1770.	0.9	26
43	Non-ideality and defectivity of the akermanite-gehlenite solid solution: An X-ray diffraction and TEM study. American Mineralogist, 2007, 92, 1685-1694.	0.9	25
44	Thermo-physical properties of as deposited and aged thermal barrier coatings (TBC) for gas turbines: State-of-the art and advanced TBCs. Journal of the European Ceramic Society, 2018, 38, 3945-3961.	2.8	25
45	Cordierite under hydrostatic compression: Anomalous elastic behavior as a precursor for a pressure-induced phase transition. American Mineralogist, 2014, 99, 479-493.	0.9	23
46	Crystal structure, high-pressure, and high-temperature behavior of carbonates in the $\text{K}_{2}\text{Mg}(\text{CO}_{3})_{2}\text{-Na}_{2}\text{Mg}(\text{CO}_{3})_{2}$ join. American Mineralogist, 2015, 100, 2458-2467.	0.9	22
47	AlPO ₄₋₅ zeolite at high pressure: Crystal-fluid interaction and elastic behavior. Microporous and Mesoporous Materials, 2016, 228, 158-167.	2.2	22
48	High-temperature and high-pressure behavior of carbonates in the ternary diagram $\text{CaCO}_{3}\text{-MgCO}_{3}\text{-FeCO}_{3}$. American Mineralogist, 2016, 101, 1423-1430.	0.9	22
49	High-temperature Thermal Expansion and Stability of V_{2}AlC Up To 950°C. Journal of the American Ceramic Society, 2007, 90, 3013-3016.	1.9	21
50	Long-term leaching test in concretes: An X-ray powder diffraction study. Cement and Concrete Composites, 2008, 30, 700-705.	4.6	21
51	Behavior of epidote at high pressure and high temperature: a powder diffraction study up to 10 GPa and 1,200 K. Physics and Chemistry of Minerals, 2011, 38, 419-428.	0.3	21
52	High-pressure Behavior and Phase Stability of $\text{Al}_{5}\text{BO}_{9}$, a Mullite-type Ceramic Material. Journal of the American Ceramic Society, 2013, 96, 2583-2592.	1.9	21
53	Crystallization on heating and complex phase behavior of $\hat{1}/\pm$ -cyclodextrin solutions. Journal of Chemical Physics, 2006, 125, 154504.	1.2	20
54	High-pressure behavior of akermanite and gehlenite and phase stability of the normal structure in melilites. American Mineralogist, 2009, 94, 704-709.	0.9	20

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55	Compressibility and crystal–fluid interactions in all-silica ferrierite at high pressure. <i>Microporous and Mesoporous Materials</i> , 2015, 218, 42-54.	2.2	20
56	Electron diffraction determination of 11.5 Å... and HySo structures: Candidate water carriers to the Upper Mantle. <i>American Mineralogist</i> , 2016, 101, 2645-2654.	0.9	20
57	Thermal expansion and dehydroxylation of phengite micas. <i>Physics and Chemistry of Minerals</i> , 2008, 35, 367-379.	0.3	19
58	High-pressure structural behavior of \hat{A} -Fe ₂ O ₃ studied by single-crystal X-ray diffraction and synchrotron radiation up to 25 GPa. <i>American Mineralogist</i> , 2011, 96, 1781-1786.	0.9	19
59	Melilite-type and melilite-related compounds: structural variations along the join Sr ²⁺ _x Ba _x MgSi ₂ O ₇ (O ²⁻ _x Å ²) and high-pressure behavior of the two end-members. <i>Physics and Chemistry of Minerals</i> , 2012, 39, 199-211.	0.3	19
60	High-pressure behavior of synthetic mordenite-Na: an in situ single-crystal synchrotron X-ray diffraction study. <i>Zeitschrift Fur Kristallographie - Crystalline Materials</i> , 2015, 230, 201-211.	0.4	18
61	Efficient artificial mineralization route to decontaminate Arsenic(III) polluted water - the Tooeleite Way. <i>Scientific Reports</i> , 2016, 6, 26031.	1.6	18
62	Electron Diffraction on Flash-Frozen Cowlesite Reveals the Structure of the First Two-Dimensional Natural Zeolite. <i>ACS Central Science</i> , 2020, 6, 1578-1586.	5.3	18
63	The crystal structure of barite, BaSO ₄ , at high pressure. <i>American Mineralogist</i> , 2011, 96, 364-367.	0.9	17
64	The MnCO ₃ -II high-pressure polymorph of rhodocrosite. <i>American Mineralogist</i> , 2015, 100, 2625-2629.	0.9	17
65	The bulk modulus of SmFeAs(O _{0.93} F _{0.07}). <i>Physica C: Superconductivity and Its Applications</i> , 2009, 469, 782-784.	0.6	16
66	The temperature and compositional dependence of disordering in Fe-bearing dolomites. <i>American Mineralogist</i> , 2012, 97, 1676-1684.	0.9	16
67	Phase stability and thermo-elastic behavior of CsAlSiO ₄ (ABW): A potential nuclear waste disposal material. <i>Microporous and Mesoporous Materials</i> , 2012, 163, 147-152.	2.2	16
68	Structural and Electric Evidence of Ferrielectric State in Pb ₂ MnWO ₆ Double Perovskite System. <i>Inorganic Chemistry</i> , 2014, 53, 10283-10290.	1.9	16
69	Crystal growth in gelled solution: applications to coordination polymers. <i>CrystEngComm</i> , 2016, 18, 2455-2462.	1.3	16
70	High-pressure behavior and <i>P</i> -induced phase transition of CaB ₃ O ₄ (OH) ₃ ·H ₂ O (colemanite). <i>Journal of the American Ceramic Society</i> , 2017, 100, 2209-2220.	1.9	16
71	Anisotropic compressional behavior of ettringite. <i>Cement and Concrete Research</i> , 2019, 120, 46-51.	4.6	16
72	On the structure of high-pressure high-temperature \hat{I} -O ₂ . <i>Journal of Chemical Physics</i> , 2009, 130, 164516.	1.2	15

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73	In situ simultaneous synchrotron powder diffraction and mass spectrometry study of methane anaerobic combustion on iron-oxide-based oxygen carrier. <i>Journal of Applied Crystallography</i> , 2005, 38, 353-360.	1.9	14
74	Inclusion Properties of Volatile Organic Compounds in a Calixarene-Based Organic Zeolite. <i>Langmuir</i> , 2012, 28, 8511-8517.	1.6	14
75	Structural Evolution under Pressure of BiMnO_3 . <i>Inorganic Chemistry</i> , 2014, 53, 8749-8754.	1.9	14
76	High-pressure polymorphism and structural transitions of norsethite, $\text{BaMg}(\text{CO}_3)_2$. <i>Physics and Chemistry of Minerals</i> , 2014, 41, 737-755.	0.3	14
77	Crystal-fluid interactions in laumontite. <i>Microporous and Mesoporous Materials</i> , 2018, 263, 86-95.	2.2	14
78	Temperature dependence of the pressure induced monoclinic distortion in the spin Shastry-Sutherland compound $\text{SrCu}_2(\text{BO}_3)_2$. <i>Solid State Communications</i> , 2014, 186, 13-17.	0.9	13
79	The stability and melting of aragonite: An experimental and thermodynamic model for carbonated eclogites in the mantle. <i>Lithos</i> , 2019, 324-325, 105-114.	0.6	13
80	Phase stability of TiH_2 under high pressure and temperatures. <i>International Journal of Hydrogen Energy</i> , 2008, 33, 6667-6671.	3.8	12
81	On the crystal chemistry and elastic behavior of a phlogopite 3T. <i>Physics and Chemistry of Minerals</i> , 2011, 38, 655-664.	0.3	12
82	$(\text{Na}, \text{K})_5[\text{MnO}_2]_{13}$ nanorods: a new tunnel structure for electrode materials determined <i>ab initio</i> and refined through a combination of electron and synchrotron diffraction data. <i>Acta Crystallographica Section B: Structural Science, Crystal Engineering and Materials</i> , 2016, 72, 893-903.	0.5	12
83	On the P-induced behavior of the zeolite phillipsite: an in situ single-crystal synchrotron X-ray diffraction study. <i>Physics and Chemistry of Minerals</i> , 2017, 44, 1-20.	0.3	12
84	Synchrotron radiation $\frac{1}{4}$ X-ray diffraction in transmission geometry for investigating the penetration depth of conservation treatments on cultural heritage stone materials. <i>Analytical Methods</i> , 2020, 12, 1587-1594.	1.3	12
85	Elastic behaviour and phase stability of pyrophyllite and talc at high pressure and temperature. <i>Physics and Chemistry of Minerals</i> , 2015, 42, 309-318.	0.3	11
86	Structural and magnetic characterization of the double perovskite $\text{Pb}_2\text{FeMoO}_6$. <i>Journal of Materials Chemistry C</i> , 2016, 4, 1533-1542.	2.7	11
87	Consolidation of building materials with a phosphate-based treatment: Effects on the microstructure and on the 3D pore network. <i>Materials Characterization</i> , 2019, 154, 315-324.	1.9	11
88	High-pressure behavior and phase stability of $\text{Na}_2\text{B}_4\text{O}_6(\text{OH})_2 \cdot 3\text{H}_2\text{O}$ (kernite). <i>Journal of the American Ceramic Society</i> , 2020, 103, 5291-5301.	1.9	11
89	Crystal Structure Evolution of CaSiO_3 Polymorphs at Earth's Mantle Pressures. <i>Minerals (Basel)</i> 11, 1078 (2021)	0.8	11
90	Thermal behaviour of tobermorite from N'Chwaning II mine (Kalahari Manganese Field, Republic of South Africa). <i>Minerals</i> , 2012, 24, 981-989.	0.4	10

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91	What's underneath? A non-destructive depth profile of painted stratigraphies by synchrotron grazing incidence X-ray diffraction. <i>Analyst, The</i> , 2018, 143, 4290-4297.	1.7	10
92	Investigating distribution patterns of airborne magnetic grains trapped in tree barks in Milan, Italy: insights for pollution mitigation strategies. <i>Geophysical Journal International</i> , 2017, 210, 989-1000.	1.0	9
93	Grazing incidence synchrotron X-ray diffraction of marbles consolidated with diammonium hydrogen phosphate treatments: non-destructive probing of buried minerals. <i>Applied Physics A: Materials Science and Processing</i> , 2018, 124, 1.	1.1	9
94	Thermal and compressional behavior of the natural borate kurnakovite, $MgB_3O_3(OH)5 \cdot 5H_2O$. <i>Construction and Building Materials</i> , 2021, 266, 121094.	3.2	9
95	Phase transition and high-pressure behavior of ulexite, a potential aggregate in radiation-shielding concretes. <i>Construction and Building Materials</i> , 2021, 291, 123188.	3.2	9
96	The high-pressure monazite-to-scheelite transformation in $CaSeO_4$. <i>Mineralogical Magazine</i> , 2012, 76, 913-923.	0.6	8
97	The high-pressure-high-temperature behavior of bassanite. <i>American Mineralogist</i> , 2009, 94, 1596-1602.	0.9	7
98	High-pressure behavior of davyne [CAN-topology]: An in situ single-crystal synchrotron diffraction study. <i>Microporous and Mesoporous Materials</i> , 2014, 198, 203-214.	2.2	7
99	High-pressure behavior of $(Cs,K)Al_4Be_5B_{11}O_{28}$ (londonite): A single-crystal synchrotron diffraction study up to 26 GPa. <i>Journal of the American Ceramic Society</i> , 2017, 100, 4893-4901.	1.9	7
100	Pargasite at high pressure and temperature. <i>Physics and Chemistry of Minerals</i> , 2018, 45, 259-278.	0.3	7
101	Carbon-Bearing Phases throughout Earth's Interior. , 2019, , 66-88.		7
102	High-pressure behavior of intermediate scapolite: compressibility, structure deformation and phase transition. <i>Physics and Chemistry of Minerals</i> , 2018, 45, 945-962.	0.3	5
103	Armstrongite at non-ambient conditions: An in-situ high-pressure single-crystal X-ray diffraction study. <i>Microporous and Mesoporous Materials</i> , 2019, 274, 171-175.	2.2	5
104	The elastic behavior of zeolitic frameworks: The case of MFI type zeolite under high-pressure methanol intrusion. <i>Catalysis Today</i> , 2020, 345, 88-96.	2.2	5
105	Monazite structure from dehydrated $CaSeO_4 \cdot 2H_2O$. <i>Mineralogical Magazine</i> , 2010, 74, 127-139.	0.6	4
106	The thermoelastic behavior of clintonite up to 10 GPa and 1,000°C. <i>Physics and Chemistry of Minerals</i> , 2012, 39, 385-397.	0.3	4
107	Covalency-driven structural instability and spin-phonon coupling in barium cobalt oxychloride. <i>Physical Review B</i> , 2014, 90, .	1.1	4
108	Allanite at high pressure: effect of REE on the elastic behaviour of epidote-group minerals. <i>Physics and Chemistry of Minerals</i> , 2019, 46, 783-793.	0.3	4

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109	Thermo-elastic behavior and P/T phase stability of TlAlSiO ₄ (ABW). Microporous and Mesoporous Materials, 2014, 197, 262-267.	2.2	3
110	Plumbopharmacosiderite, Pb _{0.5} Fe ³⁺ ₄ (AsO ₄) ₃ (OH) ₄ ·5H ₂ O, A New Mineral Species From the Monte Fal� Pb-Zn Mine Near the Village of Coiromonte In the Armeno Municipality, Novara Province, Italy. Canadian Mineralogist, 2018, 56, 143-150.	0.3	0
111	On the Swelling Behaviour of Weak Rocks Due to Gypsum Crystallization. Procedia Engineering, 2016, 158, 128-133.	1.2	1
112	Thermo-elastic behaviour of Be ₂ BO ₃ OH (hambergite) up to 7�Pa and 1,100�K. Physics and Chemistry of Minerals, 2013, 40, 401-409.	0.3	0
113	High-pressure and high-temperature structure and equation of state of Na ₃ Ca ₂ La(CO ₃) ₃ SO ₄ burbankite. European Journal of Mineralogy, 2022, 34, 351-358.		