

# Xi Liu

## List of Publications by Year in descending order

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84  
papers

1,543  
citations

279798

23  
h-index

361022

35  
g-index

85  
all docs

85  
docs citations

85  
times ranked

1763  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Coupled substitution of type A and B carbonate in sodium-bearing apatite. <i>Biomaterials</i> , 2007, 28, 916-926.   | 11.4 | 198       |
| 2  | High- <i>P</i> behavior of anorthite composition and some phase relations of the CaO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> system to the lower mantle of the Earth, and their geophysical implications. <i>Journal of Geophysical Research</i> , 2012, 117, .   | 3.3  | 84        |
| 3  | Formation of abiotic hydrocarbon from reduction of carbonate in subduction zones: Constraints from petrological observation and experimental simulation. <i>Geochimica Et Cosmochimica Acta</i> , 2018, 239, 390-408.  | 3.9  | 70        |
| 4  | The Effects of Small Amounts of H <sub>2</sub> O, CO <sub>2</sub> and Na <sub>2</sub> O on the Partial Melting of Spinel Lherzolite in the System CaO-MgO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> ± H <sub>2</sub> O ± CO <sub>2</sub> ± Na <sub>2</sub> O at 1-1.5 GPa. <i>Journal of Petrology</i> , 2006, 47, 409-434. | 2.8  | 52        |
| 5  | Phase relations in the system KAlSi <sub>3</sub> O <sub>8</sub> -NaAlSi <sub>3</sub> O <sub>8</sub> at high pressure-high temperature conditions and their implication for the petrogenesis of lingunite. <i>Earth and Planetary Science Letters</i> , 2006, 246, 317-325.   | 4.4  | 46        |
| 6  | X-ray absorption spectroscopy of ultramarine pigments: A new analytical method for the polysulfide radical anion S <sub>3</sub> <sup>•-</sup> chromophore. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2010, 65, 75-79.  | 2.9  | 45        |
| 7  | The Effect of Cr <sub>2</sub> O <sub>3</sub> on the Partial Melting of Spinel Lherzolite in the System CaO-MgO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> -Cr <sub>2</sub> O <sub>3</sub> at 1 {middle dot} 1 GPa. <i>Journal of Petrology</i> , 2004, 45, 2261-2286.  | 2.8  | 42        |
| 8  | Accommodation of the carbonate ion in fluorapatite synthesized at high pressure. <i>American Mineralogist</i> , 2008, 93, 1460-1469.   | 1.9  | 41        |
| 9  | Orientation of channel carbonate ions in apatite: Effect of pressure and composition. <i>American Mineralogist</i> , 2011, 96, 1148-1157.  | 1.9  | 35        |
| 10 | Recovery of an oxidized majorite inclusion from Earth's deep asthenosphere. <i>Science Advances</i> , 2017, 3, e1601589.   | 10.3 | 33        |
| 11 | Stability and Reactions of CaCO <sub>3</sub> Polymorphs in the Earth's Deep Mantle. <i>Journal of Geophysical Research: Solid Earth</i> , 2018, 123, 6491-6500.  | 3.4  | 32        |
| 12 | Note: An anvil-preformed gasket system to extend the pressure range for large volume cubic presses. <i>Review of Scientific Instruments</i> , 2010, 81, 116102.  | 1.3  | 31        |
| 13 | Effect of carbon, sulfur and silicon on iron melting at high pressure: Implications for composition and evolution of the planetary terrestrial cores. <i>Geochimica Et Cosmochimica Acta</i> , 2013, 114, 220-233.   | 3.9  | 31        |
| 14 | Equation of state of carbonated hydroxylapatite at ambient temperature up to 10 GPa: Significance of carbonate. <i>American Mineralogist</i> , 2011, 96, 74-80.  | 1.9  | 28        |
| 15 | Raman and infrared spectroscopic quantification of the carbonate concentration in K <sub>2</sub> CO <sub>3</sub> aqueous solutions with water as an internal standard. <i>Geoscience Frontiers</i> , 2021, 12, 1018-1030.  | 8.4  | 28        |
| 16 | Partial Melting of Spinel Lherzolite in the System CaO-MgO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> ± K <sub>2</sub> O at 1 {middle dot} 1 GPa. <i>Journal of Petrology</i> , 2004, 45, 1339-1368.   | 2.8  | 27        |
| 17 | High-pressure study on lead fluorapatite. <i>American Mineralogist</i> , 2008, 93, 1581-1584.  | 1.9  | 27        |
| 18 | Compressibility of a natural kyanite to 17.5 GPa. <i>Progress in Natural Science: Materials International</i> , 2009, 19, 1281-1286.   | 4.4  | 25        |

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|----|--|-----|-----------|
| 19 | Kinetics and Thermodynamics of Mg-Al Disorder in MgAl <sub>2</sub> O <sub>4</sub> -Spinel: A Review. <i>Molecules</i> , 2019, 24, 1704.  | 3.8 | 25        |
| 20 | Decomposition of kyanite and solubility of Al <sub>2</sub> O <sub>3</sub> in stishovite at high pressure and high temperature conditions. <i>Physics and Chemistry of Minerals</i> , 2006, 33, 711-721.  | 0.8 | 24        |
| 21 | Thermal expansion of andalusite and sillimanite at ambient pressure: a powder X-ray diffraction study up to 1000°C. <i>Mineralogical Magazine</i> , 2011, 75, 363-374.   | 1.4 | 24        |
| 22 | Equation of state of tricalcium phosphate, Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub> , to lower mantle pressures. <i>American Mineralogist</i> , 2009, 94, 1388-1391.  | 1.9 | 23        |
| 23 | Structural change in lead fluorapatite at high pressure. <i>Physics and Chemistry of Minerals</i> , 2010, 37, 1-9.   | 0.8 | 23        |
| 24 | Type A-B carbonate chlorapatite synthesized at high pressure. <i>Journal of Solid State Chemistry</i> , 2008, 181, 2494-2500.  | 2.9 | 22        |
| 25 | Solid solution between lead fluorapatite and lead fluorovanadate apatite: mixing behavior, Raman feature and thermal expansivity. <i>Physics and Chemistry of Minerals</i> , 2011, 38, 741-752.  | 0.8 | 22        |
| 26 | Fundamental infrared absorption features of quartz: An unpolarized single-crystal absorption infrared spectroscopic study. <i>Vibrational Spectroscopy</i> , 2019, 101, 52-63.   | 2.2 | 21        |
| 27 | Carbonated mantle domains at the base of the Earth's transition zone. <i>Chemical Geology</i> , 2018, 478, 69-75.  | 3.3 | 20        |
| 28 | Phase relations of nahcolite and trona at high P-T conditions. <i>Journal of Mineralogical and Petrological Sciences</i> , 2009, 104, 25-36.   | 0.9 | 18        |
| 29 | Thermal expansion of kyanite at ambient pressure: An X-ray powder diffraction study up to 1000°C. <i>Geoscience Frontiers</i> , 2010, 1, 91-97.  | 8.4 | 18        |
| 30 | High-pressure phase relations in the composition of albite NaAlSi <sub>3</sub> O <sub>8</sub> constrained by an ab initio and quasi-harmonic Debye model, and their implications. <i>Earth and Planetary Science Letters</i> , 2010, 298, 427-433. | 4.4 | 18        |
| 31 | Hydrogen-carbonate ion in synthetic high-pressure apatite. <i>American Mineralogist</i> , 2007, 92, 1764-1767.   | 1.9 | 17        |
| 32 | A large volume cubic press with a pressure-generating capability up to about 10 GPa. <i>High Pressure Research</i> , 2012, , 1-16.   | 1.2 | 17        |
| 33 | Solid solutions between lead fluorapatite and lead fluorovanadate apatite: compressibility determined by using a diamond-anvil cell coupled with synchrotron X-ray diffraction. <i>Physics and Chemistry of Minerals</i> , 2012, 39, 219-226.      | 0.8 | 16        |
| 34 | Some thermodynamic properties of larnite (Ca <sub>2</sub> SiO <sub>4</sub> ) constrained by high T/P experiment and/or theoretical simulation. <i>American Mineralogist</i> , 2016, 101, 277-288.  | 1.9 | 16        |
| 35 | In situ high-temperature powder X-ray diffraction study on the spinel solid solutions (Mg <sub>1-x</sub> Mn <sub>x</sub> )Tl <sub>2</sub> ETQq1 1 0.784314 rgBT/Overl  | 0.8 | 15        |
| 36 | Anhydrous ringwoodites in the mantle transition zone: Their bulk modulus, solid solution behavior, compositional variation, and sound velocity feature. <i>Solid Earth Sciences</i> , 2016, 1, 28-47.  | 1.7 | 15        |

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|----|---|-----|-----------|
| 37 | A first-principles study of the phase transition from Holl-I to Holl-II in the composition $KAlSi_3O_8$ . <i>American Mineralogist</i> , 2011, 96, 974-982.   | 1.9 | 14        |
| 38 | Compressional behavior of $MgCr_2O_4$ spinel from first-principles simulation. <i>Science China Earth Sciences</i> , 2016, 59, 989-996.   | 5.2 | 14        |
| 39 | Si-Disordering in $MgAl_2O_4$ -Spinel under High P-T Conditions, with Implications for Si-Mg Disorder in $Mg_2SiO_4$ -Ringwoodite. <i>Minerals (Basel, Switzerland)</i> , 2018, 8, 210.   | 2.0 | 14        |
| 40 | The phase boundary between $CaSiO_3$ perovskite and $Ca_2SiO_4 + CaSi_2O_5$ determined by in situ X-ray observations. <i>Geophysical Research Letters</i> , 2006, 33, n/a-n/a.  | 4.0 | 13        |
| 41 | Expansivity and compressibility of strontium fluorapatite and barium fluorapatite determined by in situ X-ray diffraction at high-T/P conditions: significance of the M-site cations. <i>Physics and Chemistry of Minerals</i> , 2013, 40, 349-360. | 0.8 | 13        |
| 42 | Pressure-induced phase transition in $BaCrO_4$ . <i>Physical Review B</i> , 2010, 81, .   | 3.2 | 11        |
| 43 | Synthetic lead bromapatite: X-ray structure at ambient pressure and compressibility up to about 20 ÅGPa. <i>Physics and Chemistry of Minerals</i> , 2011, 38, 397-406.  | 0.8 | 11        |
| 44 | Some IR features of $SiO_4$ and OH in coesite, and its amorphization and dehydration at ambient pressure. <i>Journal of Asian Earth Sciences</i> , 2017, 148, 315-323.  | 2.3 | 11        |
| 45 | Isotropic Thermal Expansivity and Anisotropic Compressibility of $ReB_2$ . <i>Chinese Physics Letters</i> , 2011, 28, 036401.   | 3.3 | 10        |
| 46 | Expansivity and compressibility of wadeite-type $K_2Si_4O_9$ determined by in situ high T/P experiments, and their implication. <i>Physics and Chemistry of Minerals</i> , 2013, 40, 29-40.   | 0.8 | 10        |
| 47 | High-pressure experimental verification of rutile-ilmenite oxybarometer: Implications for the redox state of the subduction zone. <i>Science China Earth Sciences</i> , 2017, 60, 1817-1825.  | 5.2 | 10        |
| 48 | Jianite: Massive Dunite Solely Made of Virtually Pure Forsterite from Jiâ€™an County, Jilin Province, Northeast China. <i>Minerals (Basel, Switzerland)</i> , 2020, 10, 220.  | 2.0 | 10        |
| 49 | Thermal elastic behavior of $CaSiO_3$ -walstromite: A powder X-ray diffraction study up to 900 ÅC. <i>American Mineralogist</i> , 2012, 97, 262-267.  | 1.9 | 9         |
| 50 | Equation of state of a synthetic ulvâ€™spinel, $(Fe_{1.94}Ti_{0.03})Ti_{1.00}O_{4.00}$ , at ambient temperature. <i>Physics and Chemistry of Minerals</i> , 2015, 42, 171-177.  | 0.8 | 9         |
| 51 | Spinel and post-spinel phase assemblages in $Zn_2TiO_4$ : an experimental and theoretical study. <i>Physics and Chemistry of Minerals</i> , 2017, 44, 109-123.  | 0.8 | 9         |
| 52 | Vibrational mode analysis and heat capacity calculation of $K_2Si_3O_9$ -wadeite. <i>Physics and Chemistry of Minerals</i> , 2013, 40, 563-574.   | 0.8 | 8         |
| 53 | Non-monotonic compositional dependence of isothermal bulk modulus of the $(Mg_{1-x}Mn_x)Cr_2O_4$ spinel solid solutions, and its origin and implication. <i>Solid Earth Sciences</i> , 2016, 1, 89-100.   | 1.7 | 8         |
| 54 | Raman spectroscopic study of synthetic pyropeâ€™grossular garnets: structural implications. <i>Physics and Chemistry of Minerals</i> , 2018, 45, 197-209.   | 0.8 | 8         |

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|----|---|-----|-----------|
| 55 | Trace element partitioning between MgAl <sub>2</sub> O <sub>4</sub> -spinel and carbonatitic silicate melt from 3 to 6 GPa, with emphasis on the role of cation order-disorder. <i>Solid Earth Sciences</i> , 2019, 4, 43-65.   | 1.7 | 8         |
| 56 | High sulfur solubility in subducted sediment melt under both reduced and oxidized conditions: With implications for S recycling in subduction zone settings. <i>Geochimica Et Cosmochimica Acta</i> , 2021, 304, 305-326.   | 3.9 | 8         |
| 57 | Full and ideal mixing behavior between Zr <sup>4+</sup> -Wd (K <sub>2</sub> ZrSi <sub>3</sub> O <sub>9</sub> ) and Ti <sup>4+</sup> -Wd (K <sub>2</sub> TiSi <sub>3</sub> O <sub>9</sub> ): evidences from mineral chemistry, X-ray diffraction pattern and Raman spectrum. <i>Physics and Chemistry of Minerals</i> , 2015, 42, 223-234. | 0.8 | 7         |
| 58 | Thermal equation of state of a natural kyanite up to 8.55 GPa and 1273 K. <i>Matter and Radiation at Extremes</i> , 2016, 1, 269-276.   | 3.9 | 7         |
| 59 | A new Ca <sub>3</sub> MgSi <sub>2</sub> O <sub>8</sub> compound and some of its thermodynamic properties. <i>Journal of Solid State Chemistry</i> , 2017, 255, 145-149.   | 2.9 | 7         |
| 60 | IR Features of Hydrrous Mg <sub>2</sub> SiO <sub>4</sub> -Ringwoodite, Unannealed and Annealed at 200–600 °C and 1 atm, with Implications to Hydrogen Defects and Water-Coupled Cation Disorder. <i>Minerals (Basel, Switzerland)</i> , 2020, 10, 499.  | 2.0 | 7         |
| 61 | Equation of state of synthetic qandilite Mg <sub>2</sub> TiO <sub>4</sub> at ambient temperature. <i>Physics and Chemistry of Minerals</i> , 2016, 43, 301-306.   | 0.8 | 6         |
| 62 | Equation of State of a Natural Chromian Spinel at Ambient Temperature. <i>Minerals (Basel, Switzerland)</i> , 2018, 8, 591.   | 2.0 | 6         |
| 63 | The Study of Crystal Structure on Grossular–Andradite Solid Solution. <i>Minerals (Basel)</i> , 2018, 8, 591.   | 2.0 | 6         |
| 64 | Phase relations and formation of K-bearing Al <sub>10</sub> Å... phase in the MORB+H <sub>2</sub> O system: Implications for H <sub>2</sub> O- and K-cycles in subduction zones. <i>American Mineralogist</i> , 2017, 102, 1922-1933.   | 1.9 | 5         |
| 65 | Water in coesite: Incorporation mechanism and operation condition, solubility and P-T dependence, and contribution to water transport and coesite preservation. <i>Geoscience Frontiers</i> , 2021, 12, 313-326.  | 8.4 | 5         |
| 66 | Thermodynamics of Mg–Al Order-Disorder Reaction in MgAl <sub>2</sub> O <sub>4</sub> -Spinel: Constrained by Prolonged Annealing Experiments at 773–1123 K. <i>Molecules</i> , 2021, 26, 872.  | 3.8 | 5         |
| 67 | EFFECTS OF P <sub>2</sub> O <sub>5</sub> AND TiO <sub>2</sub> ON THE PARTIAL MELTING OF SPINEL LHERZOLITE IN THE SYSTEM CaO-MgO-Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> AT 1.1 GPa. <i>Canadian Mineralogist</i> , 2007, 45, 649-655.  | 1.0 | 4         |
| 68 | MgO partition between olivine and K <sub>2</sub> O-rich silicate melt: Geothermometers applicable to high potassium magmas. <i>Journal of Asian Earth Sciences</i> , 2018, 166, 181-194.  | 2.3 | 4         |
| 69 | Equations of state of Co <sub>2</sub> TiO <sub>4</sub> -Sp, Co <sub>2</sub> TiO <sub>4</sub> -CM, and Co <sub>2</sub> TiO <sub>4</sub> -CT, and their phase transitions: an experimental and theoretical study. <i>Physics and Chemistry of Minerals</i> , 2019, 46, 571-582.   | 0.8 | 4         |
| 70 | Experimental evidence for a protracted enrichment of tungsten in evolving granitic melts: implications for scheelite mineralization. <i>Mineralium Deposita</i> , 2020, 55, 1299-1306.  | 4.1 | 4         |
| 71 | Compositional characteristics of ringwoodite in the lower part of the mantle transition zone. <i>Solid Earth Sciences</i> , 2020, 5, 223-225.   | 1.7 | 4         |
| 72 | Crystal Structure and Some Thermodynamic Properties of Ca <sub>7</sub> MgSi <sub>4</sub> O <sub>16</sub> -Bredigite. <i>Crystals</i> , 2021, 11, 14.  | 2.2 | 4         |

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|----|---|-----|-----------|
| 73 | Quantifying Mg-Al cation distribution in MgAl <sub>2</sub> O <sub>4</sub> -spinel using Raman spectroscopy: An experimental calibration. <i>Solid Earth Sciences</i> , 2022, 7, 60-71.  | 1.7 | 4         |
| 74 | High-pressure synthesis, crystal structure and photoluminescence properties of a new terbium silicate: Na <sub>2</sub> Tb <sub>1.08</sub> Ca <sub>2.92</sub> Si <sub>6</sub> O <sub>18</sub> H <sub>0.8</sub> . <i>RSC Advances</i> , 2017, 7, 50195-50199. | 3.6 | 3         |
| 75 | Effect of second Si-O vibrational overtones/combinations on quantifying water in silicate and silica minerals using infrared spectroscopy, and an experimental method for its removal. <i>Physics and Chemistry of Minerals</i> , 2022, 49, 1.              | 0.8 | 3         |
| 76 | Equation of state of CAS phase to pressure of the uppermost lower mantle at ambient temperature. <i>Science China Earth Sciences</i> , 2011, 54, 1394-1399.   | 5.2 | 2         |
| 77 | A Metastable Fo-III Wedge in Cold Slabs Subducted to the Lower Part of the Mantle Transition Zone: A Hypothesis Based on First-Principles Simulations. <i>Minerals (Basel, Switzerland)</i> , 2019, 9, 186.   | 2.0 | 2         |
| 78 | Raman and X-ray diffraction study of pressure-induced phase transition in synthetic Mg <sub>2</sub> TiO <sub>4</sub> . <i>Scientific Reports</i> , 2020, 10, 6278.  | 3.3 | 2         |
| 79 | Experimental constraints on trace element partitioning between coesite and hydrous silicate melt at 5 GPa and 1500-1750°C. <i>Science China Earth Sciences</i> , 2021, 64, 1171-1183.   | 5.2 | 2         |
| 80 | Sodium hydrogencarbonate (NaHCO <sub>3</sub> ): coincidence-site lattice twinning and structure refinement. <i>Zeitschrift für Kristallographie</i> , 2009, 224, .  | 1.1 | 1         |
| 81 | Extremely Stable, Highly Conductive Boron-Hydrogen Complexes in Forsterite and Olivine. <i>Journal of Geophysical Research: Solid Earth</i> , 2022, 127, .  | 3.4 | 1         |
| 82 | 3D-FEM modeling of the microscopic stress field of forsterite aggregate under hydrostatic pressure: Significance of the crystal orientation. <i>Science China Earth Sciences</i> , 2014, 57, 1192-1198.   | 5.2 | 0         |
| 83 | An experimental study of trace element mobility during dehydration of lawsonite blueschist along different P-T paths: Implications for geochemical heterogeneity of Earth's mantle. <i>Journal of Asian Earth Sciences</i> , 2020, 197, 104389.             | 2.3 | 0         |
| 84 | Equation of state of a new calcium magnesium silicate compound with the composition Ca <sub>3</sub> MgSi <sub>2</sub> O <sub>8</sub> at pressures up to 23 GPa and ambient T. <i>Physics and Chemistry of Minerals</i> , 2022, 49, 1.                       | 0.8 | 0         |