

# Ahmet AlataÅ

## List of Publications by Year in descending order

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91  
papers

2,509  
citations

186265

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h-index

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g-index

92  
all docs

92  
docs citations

92  
times ranked

3146  
citing authors

| #  | ARTICLE   | IF   | CITATIONS |
|----|---|------|-----------|
| 1  | Giant anisotropic in-plane thermal conduction induced by Anomalous phonons in pentagonal PdSe <sub>2</sub> . Materials Today Physics, 2022, 22, 100599.                             | 6.0  | 8         |
| 2  | Kohn anomaly and elastic softening in body-centered cubic molybdenum at high pressure. Physical Review B, 2022, 105, .  | 3.2  | 1         |
| 3  | Acoustic phonon dispersion of $\text{RuCl}_3$ . Physical Review B, 2022, 106, .   | 3.2  | 7         |
| 4  | Direct Prediction of Phonon Density of States With Euclidean Neural Networks. Advanced Science, 2021, 8, e2004214.  | 11.2 | 34        |
| 5  | Short-Range Nematic Fluctuations in $\text{SrTiO}_3$ . Physical Review Letters, 2021, 126, 107001.  | 7.8  | 12        |
| 6  | Remarkably Weak Anisotropy in Thermal Conductivity of Two-Dimensional Hybrid Perovskite Butylammonium Lead Iodide Crystals. Nano Letters, 2021, 21, 3708-3714.                      | 9.1  | 26        |
| 7  | Signature of Many-Body Localization of Phonons in Strongly Disordered Superlattices. Nano Letters, 2021, 21, 7419-7425.   | 9.1  | 1         |
| 8  | The damping of terahertz acoustic modes in aqueous nanoparticle suspensions. Scientific Reports, 2021, 11, 20110.   | 3.3  | 1         |
| 9  | Anharmonicity in partially filled skutterudites $\text{YbxCo}_4\text{Sb}_{12}$ . Journal of Applied Physics, 2021, 130, 185105.   | 2.5  | 1         |
| 10 | Redox and structural controls on tin isotopic fractionations among magmas. Geochimica Et Cosmochimica Acta, 2020, 268, 42-55.   | 3.9  | 15        |
| 11 | High frequency atomic tunneling yields ultralow and glass-like thermal conductivity in chalcogenide single crystals. Nature Communications, 2020, 11, 6039.                         | 12.8 | 36        |
| 12 | Quantized thermoelectric Hall effect induces giant power factor in a topological semimetal. Nature Communications, 2020, 11, 6167.  | 12.8 | 43        |
| 13 | Onset of interfacial waves in the terahertz spectrum of a nanoparticle suspension. Physical Review E, 2020, 102, 022601.  | 2.1  | 6         |
| 14 | Topological Singularity Induced Chiral Kohn Anomaly in a Weyl Semimetal. Physical Review Letters, 2020, 124, 236401.  | 7.8  | 27        |
| 15 | The Terahertz Dynamics of an Aqueous Nanoparticle Suspension: An Inelastic X-ray Scattering Study. Nanomaterials, 2020, 10, 860.  | 4.1  | 7         |
| 16 | Shaping the terahertz sound propagation in water under highly directional confinement. Physical Review B, 2020, 101, .  | 3.2  | 8         |
| 17 | Anharmonic lattice dynamics and superionic transition in $\text{AgCrSe}_2$ . Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 3930-3937. | 7.1  | 73        |
| 18 | Nematic Correlation Length in Iron-Based Superconductors Probed by Inelastic X-Ray Scattering. Physical Review Letters, 2020, 124, 157001.  | 7.8  | 11        |

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|----|--|------|-----------|
| 19 | Anomalous Suppressed Thermal Conduction by Electron-Phonon Coupling in Charge-Density-Wave Tantalum Disulfide. <i>Advanced Science</i> , 2020, 7, 1902071.                           | 11.2 | 22        |
| 20 | High-energy-resolution inelastic X-ray scattering spectrometer at beamline 30-ID of the Advanced Photon Source. <i>Journal of Synchrotron Radiation</i> , 2020, 27, 827-835.         | 2.4  | 19        |
| 21 | Supercompliant and Soft $\text{Ca}_{1-x}\text{Sr}_x\text{TiO}_3$ <i>Physical Review Letters</i> , 2019, 123, 155901.   | 3.2  | 22        |
| 22 | Pressure effect on Kohn anomaly and electronic topological transition in single-crystal tantalum. <i>Physical Review B</i> , 2019, 100, .  | 3.2  | 13        |
| 23 | Intrinsic anharmonic localization in thermoelectric PbSe. <i>Nature Communications</i> , 2019, 10, 1928.   | 12.8 | 51        |
| 24 | Experimental observation of electron-phonon coupling enhancement in Sn nanowires caused by phonon confinement effects. <i>Physical Review B</i> , 2019, 99, .                        | 3.2  | 10        |
| 25 | Lattice dynamics of the hybrid improper ferroelectrics $\text{Ca}_{1-x}\text{Sr}_x\text{TiO}_3$ <i>Physical Review B</i> , 2019, 100, .  | 3.2  | 9         |
| 26 | Experimental Phonon Dispersion and Lifetimes of Tetragonal $\text{CH}_3\text{NH}_3\text{PbI}_3$ Perovskite Crystals. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 1-6.   | 4.6  | 15        |
| 27 | Lattice dynamics and elasticity in thermoelectric $\text{Mg}_{2-x}\text{Zn}_x\text{Sb}$ <i>Physical Review Materials</i> , 2019, 3, .  | 3.2  | 2         |
| 28 | Thermal acoustic excitations with atomic-scale wavelengths in amorphous silicon. <i>Physical Review Materials</i> , 2019, 3, .   | 2.4  | 18        |
| 29 | Competing soft phonon modes at the charge-density-wave transitions in $\text{DyTi}_2\text{O}_7$ <i>Physical Review B</i> , 2018, 98, .   | 3.2  | 25        |
| 30 | Strongly Anisotropic Magnesium $\text{MgSiO}_3$ in Earth's Lower Mantle. <i>Journal of Geophysical Research: Solid Earth</i> , 2018, 123, 4740-4750.                                 | 3.4  | 19        |
| 31 | Persistent low-energy phonon broadening near the charge-order $\text{Bi}_2\text{Te}_3$ vector in the bilayer cuprate $\text{Bi}_2\text{Te}_3$ <i>Physical Review B</i> , 2018, 98, . | 3.2  | 22        |
| 32 | Damping Off Terahertz Sound Modes of a Liquid upon Immersion of Nanoparticles. <i>ACS Nano</i> , 2018, 12, 8867-8874.  | 14.6 | 14        |
| 33 | Collective Excitations in Protein as a Measure of Balance Between its Softness and Rigidity. <i>Journal of Physical Chemistry B</i> , 2017, 121, 923-930.                            | 2.6  | 3         |
| 34 | Balance between Protein Softness and Rigidity Assessed by Inelastic X-ray Scattering. <i>Biophysical Journal</i> , 2017, 112, 201a.  | 0.5  | 0         |
| 35 | Seismic parameters of hcp-Fe alloyed with Ni and Si in the Earth's inner core. <i>Journal of Geophysical Research: Solid Earth</i> , 2016, 121, 610-623.                             | 3.4  | 16        |
| 36 | Superconductivity and hybrid soft modes in $\text{Ti}_{1-x}\text{V}_x\text{O}_2$ <i>Physical Review B</i> , 2016, 94, .  | 3.2  | 26        |

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|----|---|------|-----------|
| 37 | Boron arsenide phonon dispersion from inelastic x-ray scattering: Potential for ultrahigh thermal conductivity. <i>Physical Review B</i> , 2016, 94, .  | 3.2  | 29        |
| 38 | Direct Observation of Dynamic Symmetry Breaking above Room Temperature in Methylammonium Lead Iodide Perovskite. <i>ACS Energy Letters</i> , 2016, 1, 880-887.  | 17.4 | 221       |
| 39 | Partial glass isosymmetry transition in multiferroic hexagonal ErMnO <sub>3</sub> . <i>Physical Review B</i> , 2016, 93, .  | 3.2  | 7         |
| 40 | Elastic properties of type-I clathrate K <sub>8</sub> Zn <sub>4</sub> Sn <sub>42</sub> determined by inelastic X-ray scattering. <i>Europhysics Letters</i> , 2016, 113, 16001.   | 2.0  | 1         |
| 41 | Inelastic x-ray scattering measurements of phonon dispersion and lifetimes in PbTe <sub>1-x</sub> Se <sub>x</sub> alloys. <i>Journal of Physics Condensed Matter</i> , 2015, 27, 375403.  | 1.8  | 14        |
| 42 | One role of hydration water in proteins: key to the softening of short time intraprotein collective vibrations of a specific length scale. <i>Soft Matter</i> , 2014, 10, 4298-4303.  | 2.7  | 12        |
| 43 | Sound velocities of bcc-Fe and Fe <sub>0.85</sub> Si <sub>0.15</sub> alloy at high pressure and temperature. <i>Physics of the Earth and Planetary Interiors</i> , 2014, 233, 24-32.  | 1.9  | 21        |
| 44 | Microfocusing options for the inelastic X-ray scattering beamline at sector 3 of the Advanced Photon Source. <i>Journal of Synchrotron Radiation</i> , 2014, 21, 488-496.   | 2.4  | 0         |
| 45 | Inelastic X-ray Scattering Studies of the Short-Time Collective Vibrational Motions in Hydrated Lysozyme Powders and Their Possible Relation to Enzymatic Function. <i>Journal of Physical Chemistry B</i> , 2013, 117, 1186-1195.  | 2.6  | 21        |
| 46 | Sound velocities of Fe and Fe-Si alloy in the Earth's core. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 10239-10244.  | 7.1  | 93        |
| 47 | Phonon-like excitation in secondary and tertiary structure of hydrated protein powders. <i>Soft Matter</i> , 2011, 7, 9848.   | 2.7  | 11        |
| 48 | Bulk Modulus of a Protein Active-Site Mimic. <i>Journal of Physical Chemistry B</i> , 2011, 115, 4469-4473.   | 2.6  | 8         |
| 49 | Improved focusing capability for inelastic X-ray spectrometer at 3-ID of the APS: A combination of toroidal and Kirkpatrick-Baez (KB) mirrors. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2011, 649, 166-168. | 1.6  | 28        |
| 50 | Electron-Phonon Coupling and the Soft Phonon Mode in $\text{TiSe}_2$ . <i>Physical Review Letters</i> , 2011, 107, 266401.  | 7.8  | 104       |
| 51 | Six-reflection meV-monochromator for synchrotron radiation. <i>Journal of Synchrotron Radiation</i> , 2011, 18, 605-611.  | 2.4  | 102       |
| 52 | Phonon softening near the structural transition in BaFe <sub>2</sub> As <sub>2</sub> observed by inelastic x-ray scattering. <i>Physical Review B</i> , 2011, 84, .   | 3.2  | 39        |
| 53 | Phonon softening near the structural transition in BaFe <sub>2</sub> As <sub>2</sub> and superconducting CaC <sub>6</sub> using inelastic x-ray scattering. <i>Physical Review B</i> , 2011, 84, .  | 3.2  | 14        |
| 54 | Protein elasticity probed with two synchrotron-based techniques. <i>Journal of Chemical Physics</i> , 2010, 132, 085103.  | 3.0  | 25        |

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|----|--|-----|-----------|
| 55 | Observation of phonons with resonant inelastic x-ray scattering. Journal of Physics Condensed Matter, 2010, 22, 485601.  | 1.8 | 29        |
| 56 | Phonons in doped and undoped $\text{BaFe}_2\text{As}_2$ by inelastic x-ray scattering. Physical Review B, 2009, 80, .  | 3.2 | 157       |
| 57 | Phonon density of states of $\text{Pu}$ and $\text{Pu}$ -plutonium by inelastic x-ray scattering. Physical Review B, 2009, 79, .                                     | 3.2 | 27        |
| 58 | Influence of magnetism on phonons in $\text{CaFe}_2\text{As}_2$ seen via inelastic x-ray scattering. Physical Review B, 2009, 79, .                                  | 3.2 | 130       |
| 59 | Acoustic phonons in chrysotile asbestos probed by high-resolution inelastic x-ray scattering. Solid State Communications, 2009, 149, 589-592.                        | 1.9 | 9         |
| 60 | Liquid boron: X-ray measurements and <i>ab initio</i> molecular dynamics simulations. Physical Review B, 2009, 79, .   | 3.2 | 15        |
| 61 | Intrinsic localized modes observed in the high-temperature vibrational spectrum of NaI. Physical Review B, 2009, 79, .   | 3.2 | 103       |
| 62 | Intrinsic nature of thermally activated dynamical modes in $\text{U}$ : Nonequilibrium mode creation by x-ray and neutron scattering. Physical Review B, 2008, 77, . | 3.2 | 33        |
| 63 | Studies of Phononlike Low-Energy Excitations of Protein Molecules by Inelastic X-Ray Scattering. Physical Review Letters, 2008, 101, 135501.                         | 7.8 | 54        |
| 64 | Atomic form-factor measurements in the low-momentum transfer region for Li, Be, and Al by inelastic x-ray scattering. Physical Review B, 2008, 77, .                 | 3.2 | 18        |
| 65 | Experimental aspects of inelastic X-ray scattering studies on liquids under extreme conditions (P-T). High Pressure Research, 2008, 28, 175-183.                     | 1.2 | 4         |
| 66 | Central peak and narrow component in x-ray scattering measurements near the displacive phase transition in $\text{SrTiO}_3$ . Physical Review B, 2008, 78, .         | 3.2 | 13        |
| 67 | Observation of a Continuous Phase Transition in a Shape-Memory Alloy. Physical Review Letters, 2008, 101, 135703.  | 7.8 | 27        |
| 68 | Progress in the Development of New Optics for Very High Resolution Inelastic X-Ray Scattering Spectroscopy. AIP Conference Proceedings, 2007, , .                    | 0.4 | 8         |
| 69 | Phonons in superconducting $\text{CaC}_6$ via inelastic x-ray scattering. Physical Review B, 2007, 76, .   | 3.2 | 17        |
| 70 | X-ray scattering study of the spin-Peierls transition and soft phonon behavior in $\text{TiOCl}$ . Physical Review B, 2007, 76, .                                    | 3.2 | 28        |
| 71 | Intrinsically localized vibrations and the mechanical properties of $\text{U}$ -uranium. Journal of Alloys and Compounds, 2007, 444-445, 129-132.                    | 5.5 | 11        |
| 72 | Phonon Density of States of Metallic Sn at High Pressure. Physical Review Letters, 2007, 98, 245502.   | 7.8 | 23        |

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|----|---|------|-----------|
| 73 | Sapphire analyzers for high-resolution X-ray spectroscopy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 582, 149-151.   | 1.6  | 22        |
| 74 | Formation of a New Dynamical Mode in $\alpha$ -Uranium Observed by Inelastic X-Ray and Neutron Scattering. Physical Review Letters, 2006, 96, 125501.   | 7.8  | 107       |
| 75 | Collective excitations in an early molten transition metal. Physical Review B, 2006, 74, .  | 3.2  | 22        |
| 76 | X-Ray Bragg Diffraction in Asymmetric Backscattering Geometry. Physical Review Letters, 2006, 97, 235502.   | 7.8  | 46        |
| 77 | A cryogenically stabilized meV-monochromator for hard X-rays. Journal of Synchrotron Radiation, 2006, 13, 211-215.  | 2.4  | 31        |
| 78 | Excitations of lithium ammonia complexes studied by inelastic x-ray scattering. Journal of Chemical Physics, 2006, 124, 024720.   | 3.0  | 8         |
| 79 | Inelastic X-ray scattering studies of phonons propagating along the axial direction of a DNA molecule having different counter-ion atmosphere. Journal of Physics and Chemistry of Solids, 2005, 66, 2235-2245.   | 4.0  | 12        |
| 80 | Elastic modulus of supercooled liquid and hot solid silicon measured by inelastic X-ray scattering. Journal of Physics and Chemistry of Solids, 2005, 66, 2230-2234.  | 4.0  | 11        |
| 81 | Effects of counterion valency on the damping of phonons propagating along the axial direction of liquid-crystalline DNA. Journal of Chemical Physics, 2005, 123, 214909.  | 3.0  | 15        |
| 82 | Studies of short-wavelength collective molecular motions in lipid bilayers using high resolution inelastic X-ray scattering. Biophysical Chemistry, 2003, 105, 721-741.   | 2.8  | 22        |
| 83 | Collective excitations in metal-ammonia systems as a function of electron density. Physical Review B, 2003, 68, .   | 3.2  | 12        |
| 84 | Effect of isotopic composition on the lattice parameter of germanium measured by x-ray backscattering. Physical Review B, 2003, 67, .   | 3.2  | 62        |
| 85 | Microscopic Dynamics of Liquid Aluminum Oxide. Science, 2003, 299, 2047-2049.   | 12.6 | 71        |
| 86 | Phonon dispersion in uranium measured using inelastic x-ray scattering. Physical Review B, 2003, 67, .  | 3.2  | 43        |
| 87 | Collective dynamics of liquid Hg investigated by inelastic X-ray scattering. Journal of Non-Crystalline Solids, 2002, 312-314, 163-167.   | 3.1  | 28        |
| 88 | Short-wavelength collective excitations in liquid mercury investigated by inelastic X-ray scattering. Applied Physics A: Materials Science and Processing, 2002, 74, s1648-s1650.   | 2.3  | 7         |
| 89 | Source and optics considerations for new generation high-resolution inelastic X-ray spectrometers. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 467-468, 617-622. | 1.6  | 6         |
| 90 | An inelastic X-ray spectrometer with 2.2meV energy resolution. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 467-468, 1545-1548.                                   | 1.6  | 63        |

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|----|--|-----|-----------|
| 91 | Evidence for an Instability Near Twice the Fermi Wave Vector in the Low Electronic Density Liquid MetalLi(NH3)4. Physical Review Letters, 2001, 86, 2357-2360. | 7.8 | 20        |