

Zheng-Tian Lu

List of Publications by Year in descending order

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97
papers

3,164
citations

201674

27
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155660

55
g-index

99
all docs

99
docs citations

99
times ranked

2458
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Frequency-stabilized diode laser with the Zeeman shift in an atomic vapor. Applied Optics, 1998, 37, 3295. | 2.1 | 294 |
| 2 | Nuclear Charge Radius of ${}^8\text{He}$. Physical Review Letters, 2007, 99, 252501. | 7.8 | 209 |
| 3 | One million year old groundwater in the Sahara revealed by krypton-81 and chlorine-36. Geophysical Research Letters, 2004, 31, n/a-n/a. | 4.0 | 208 |
| 4 | Laser Spectroscopic Determination of the ${}^6\text{He}$ Nuclear Charge Radius. Physical Review Letters, 2004, 93, 142501. | 7.8 | 198 |
| 5 | Ultrasensitive Isotope Trace Analyses with a Magneto-Optical Trap. Science, 1999, 286, 1139-1141. | 12.6 | 167 |
| 6 | Tracer applications of noble gas radionuclides in the geosciences. Earth-Science Reviews, 2014, 138, 196-214. | 9.1 | 119 |
| 7 | First Measurement of the Atomic Electric Dipole Moment of ${}^{\text{Ra}}$. Physical Review Letters, 2015, 114, 233002. | 7.8 | 118 |
| 8 | An atom counter for measuring ${}^{81}\text{Kr}$ and ${}^{85}\text{Kr}$ in environmental samples. Geochimica Et Cosmochimica Acta, 2012, 91, 1-6. | 3.9 | 89 |
| 9 | Colloquium: Laser probing of neutron-rich nuclei in light atoms. Reviews of Modern Physics, 2013, 85, 1383-1400. | 45.6 | 86 |
| 10 | Efficient Collection of ${}^{221}\text{Fr}$ into a Vapor Cell Magneto-optical Trap. Physical Review Letters, 1997, 79, 994-997. | 7.8 | 84 |
| 11 | Laser Trapping of ${}^{\text{Ra}225}$ and ${}^{\text{Ra}226}$ with Repumping by Room-Temperature Blackbody Radiation. Physical Review Letters, 2007, 98, 093001. | 7.8 | 79 |
| 12 | TRACING NOBLE GAS RADIONUCLIDES IN THE ENVIRONMENT. Annual Review of Nuclear and Particle Science, 2004, 54, 39-67. | 10.2 | 78 |
| 13 | Improved limit on the ${}^{\text{Ra}}$ electric dipole moment. Physical Review C, 2016, 94, . | 2.9 | 78 |
| 14 | Laser-based methods for ultrasensitive trace-isotope analyses. Review of Scientific Instruments, 2003, 74, 1169-1179. | 1.3 | 65 |
| 15 | Laser trapping of short-lived radioactive isotopes. Physical Review Letters, 1994, 72, 3791-3794. | 7.8 | 64 |
| 16 | Using ${}^{81}\text{Kr}$ and noble gases to characterize and date groundwater and brines in the Baltic Artesian Basin on the one-million-year timescale. Geochimica Et Cosmochimica Acta, 2017, 205, 187-210. | 3.9 | 59 |
| 17 | Cosmogenic, radiogenic, and stable isotopic constraints on groundwater residence time in the Nubian Aquifer, Western Desert of Egypt. Geochemistry, Geophysics, Geosystems, 2005, 6, n/a-n/a. | 2.5 | 58 |
| 18 | Radiometric ${}^{81}\text{Kr}$ dating identifies 120,000-year-old ice at Taylor Glacier, Antarctica. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 6876-6881. | 7.1 | 57 |

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 19 | Continental degassing of 4He by surficial discharge of deep groundwater. <i>Nature Geoscience</i> , 2015, 8, 35-39. | 12.9 | 56 |
| 20 | A Critical Review of State-of-the-Art and Emerging Approaches to Identify Fracking-Derived Gases and Associated Contaminants in Aquifers. <i>Environmental Science & Technology</i> , 2019, 53, 1063-1077. http://www.w3.org/1998/Math/MathML | 10.0 | 56 |
| 21 | Detection at the 10^{-16} Abundance Level with Atom Trap Trace Analysis. <i>Physical Review Letters</i> , 2011, 106, 103001. | 7.8 | 50 |
| 22 | A new method of measuring 81 Kr and 85 Kr abundances in environmental samples. <i>Geophysical Research Letters</i> , 2003, 30, . | 4.0 | 48 |
| 23 | Search for topological defect dark matter with a global network of optical magnetometers. <i>Nature Physics</i> , 2021, 17, 1396-1401. | 16.7 | 42 |
| 24 | Beam of metastable krypton atoms extracted from a rf-driven discharge. <i>Review of Scientific Instruments</i> , 2001, 72, 271-272. | 1.3 | 35 |
| 25 | Measurement of the lifetimes of the lowest P _{1/2} state of neutral Ba and Ra. <i>Physical Review A</i> , 2006, 73, . | 2.5 | 35 |
| 26 | Recent seawater intrusion into deep aquifer determined by the radioactive noble-gas isotopes 81Kr and 39Ar. <i>Earth and Planetary Science Letters</i> , 2019, 507, 21-29. | 4.4 | 33 |
| 27 | Radiokrypton unveils dual moisture sources of a deep desert aquifer. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 16222-16227. | 7.1 | 31 |
| 28 | Counting Individual Ca ⁴¹ Atoms with a Magneto-Optical Trap. <i>Physical Review Letters</i> , 2004, 92, 153002. | 7.8 | 28 |
| 29 | Comparison of the cold-collision losses for laser-trapped sodium in different ground-state hyperfine sublevels. <i>Physical Review A</i> , 1994, 50, R4449-R4452. | 2.5 | 25 |
| 30 | Search for Anomalously Heavy Isotopes of Helium in the Earth's Atmosphere. <i>Physical Review Letters</i> , 2004, 92, 022501. | 7.8 | 25 |
| 31 | Cosmogenic nuclide techniques. <i>Nature Reviews Methods Primers</i> , 2022, 2, . | 21.2 | 25 |
| 32 | Krypton-81 in groundwater of the Culebra Dolomite near the Waste Isolation Pilot Plant, New Mexico. <i>Journal of Contaminant Hydrology</i> , 2014, 160, 12-20. | 3.3 | 24 |
| 33 | Latest development of radiokrypton dating ⁸¹ Ar: A tool to find and study paleogroundwater. <i>Quaternary International</i> , 2020, 547, 166-171. | 1.5 | 24 |
| 34 | Analysis of 85Kr: a comparison at the 10-14 level using micro-liter samples. <i>Scientific Reports</i> , 2013, 3, 1596. | 3.3 | 23 |
| 35 | ⁸¹ Kr Dating at the Guliya Ice Cap, Tibetan Plateau. <i>Geophysical Research Letters</i> , 2019, 46, 6636-6643. | 4.0 | 23 |
| 36 | An atom trap system for practical 81Kr dating. <i>Review of Scientific Instruments</i> , 2004, 75, 3224-3232. | 1.3 | 21 |

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|----|--|-----|-----------|
| 37 | ATTA – A new method of ultrasensitive isotope trace analysis. Nuclear Instruments & Methods in Physics Research B, 2000, 172, 224-227. | 1.4 | 20 |
| 38 | Noble gas radionuclides in Yellowstone geothermal gas emissions: A reconnaissance. Chemical Geology, 2013, 339, 43-51. | 3.3 | 20 |
| 39 | Planar-Integrated Magneto-Optical Trap. Physical Review Applied, 2022, 17, . | 3.8 | 20 |
| 40 | Thermal beam of metastable krypton atoms produced by optical excitation. Review of Scientific Instruments, 2007, 78, 023103. | 1.3 | 19 |
| 41 | Progress toward an EDM measurement in ^{225}Ra . Nuclear Physics A, 2010, 844, 53c-56c. | 1.5 | 19 |
| 42 | Krypton-81 dating of the deep Continental Intercalaire aquifer with implications for chlorine-36 dating. Earth and Planetary Science Letters, 2020, 535, 116120. | 4.4 | 18 |
| 43 | Fine Structure of the $1s3p^2$ Level in Atomic He4: Theory and Experiment. Physical Review Letters, 2005, 94, 133001. | 7.8 | 17 |
| 44 | Efficient, tightly-confined trapping of ^{226}Ra . Physical Review C, 2012, 86, . | 2.9 | 17 |
| 45 | Optical Excitation and Decay Dynamics of Ytterbium Atoms Embedded in a Solid Neon Matrix. Physical Review Letters, 2011, 107, 093001. | 7.8 | 16 |
| 46 | Field Degassing as a New Sampling Method for ^{14}C Analyses in Old Groundwater. Radiocarbon, 2018, 60, 349-366. | 1.8 | 15 |
| 47 | Atmospheric ^{81}Kr as an Integrator of Cosmic Ray Flux on the Hundred Thousand Year Time Scale. Geophysical Research Letters, 2020, 47, e2019GL086381. | 4.0 | 15 |
| 48 | Underground production of ^{81}Kr detected in subsurface fluids. Geochimica Et Cosmochimica Acta, 2021, 295, 65-79. | 3.9 | 15 |
| 49 | Lifetime of the ^{81}Kr ground state. Physical Review Letters, 2019, 123, 023001. | 2.5 | 13 |
| 50 | Dual Separation of Krypton and Argon from Environmental Samples for Radioisotope Dating. Analytical Chemistry, 2019, 91, 13576-13581. | 6.5 | 12 |
| 51 | Electric quadrupole shifts of the precession frequencies of ^{131}Xe atoms in rectangular cells. Physical Review A, 2020, 102, . | 2.5 | 11 |
| 52 | Identifying recharge processes into a vast fossil aquifer based on dynamic groundwater ^{81}Kr age evolution. Journal of Hydrology, 2020, 587, 124946. | 5.4 | 11 |
| 53 | Beam of metastable krypton atoms extracted from a microwave-driven discharge. Review of Scientific Instruments, 2006, 77, 126105. | 1.3 | 10 |
| 54 | An atom trap system for ^{39}Ar dating with improved precision. Review of Scientific Instruments, 2021, 92, 063204. | 1.3 | 10 |

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|----|---|-----|-----------|
| 55 | Inflection Points on Groundwater Age and Geochemical Profiles Along Wellbores Light up Hierarchically Nested Flow Systems. <i>Geophysical Research Letters</i> , 2021, 48, e2020GL092337. | 4.0 | 10 |
| 56 | An extension of the TALDICE ice core age scale reaching back to MIS 10.1. <i>Quaternary Science Reviews</i> , 2021, 266, 107078. | 3.0 | 10 |
| 57 | Searches for stable strangelets in ordinary matter: overview and a recent example. <i>Nuclear Physics A</i> , 2005, 754, 361-368. | 1.5 | 9 |
| 58 | Spectroscopic study of the cycling transition $s_{43}^{43}\text{Ca}$ [3] 2_{33}^{43}Ca | 2.5 | 9 |
| 59 | Laser spectroscopic measurement of helium isotope ratios. <i>Geophysical Research Letters</i> , 2003, 30, . | 4.0 | 8 |
| 60 | Measurement of the Hyperfine Quenching Rate of the Clock Transition in ^{87}Sr | 7.8 | 8 |
| 61 | Controls on the $^{36}\text{Cl}/\text{Cl}$ input ratio of paleo-groundwater in arid environments: New evidence from $^{81}\text{Kr}/\text{Kr}$ data. <i>Science of the Total Environment</i> , 2021, 762, 144106. | 8.0 | 8 |
| 62 | Optical Excitation and Trapping of ^{81}Kr | 7.8 | 8 |
| 63 | Hyperfine suppression of ^{129}Xe | 7.8 | 8 |
| 64 | Towards measuring the charge radius of ^6He and ^8He . <i>Nuclear Instruments & Methods in Physics Research B</i> , 2003, 204, 536-539. | 1.4 | 7 |
| 65 | Enhancement of the ^{81}Kr count rates by optical pumping. | 2.5 | 7 |
| 66 | High-resolution spectroscopy of neutral Yb atoms in a solid Ne matrix. <i>Physical Review A</i> , 2021, 104, . | 2.5 | 7 |
| 67 | Towards ultrahigh sensitivity analysis of ^{41}Ca . <i>Nuclear Instruments & Methods in Physics Research B</i> , 2003, 204, 701-704. | 1.4 | 6 |
| 69 | neutron capture cross sections on ^{81}Kr | 2.9 | 6 |
| 70 | Reconstruction of the atmospheric $^{39}\text{Ar}/\text{Ar}$ history. <i>Chemical Geology</i> , 2021, 583, 120480. | 3.3 | 6 |
| 71 | The role of carrier gases in the production of metastable argon atoms in a rf discharge. <i>Review of Scientific Instruments</i> , 2009, 80, 036105. | 1.3 | 5 |
| 72 | Atom Trap Trace Analysis of Rare Noble Gas Isotopes. <i>Advances in Atomic, Molecular and Optical Physics</i> , 2010, , 173-205. | 2.3 | 5 |

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|----|---|-----|-----------|
| 73 | Ion current as a precise measure of the loading rate of a magneto-optical trap. Optics Letters, 2014, 39, 409. | 3.3 | 5 |
| 74 | Radiokrypton dating coming of age. National Science Review, 2016, 3, 172-173. | 9.5 | 5 |
| 75 | Precision spectroscopy of the helium atom. Frontiers of Physics in China, 2009, 4, 165-169. | 1.0 | 4 |
| 76 | Magic wavelengths of the Yb ($6s^2 S_{01} \rightarrow 6s6p P_{13}$) intercombination transition. Physical Review A, 2020, 102, . | 2.5 | 4 |
| 77 | What trapped atoms reveal about global groundwater. Physics Today, 2013, 66, 74-75. | 0.3 | 3 |
| 78 | Monitoring atmospheric ^{85}Kr by atom counting. Journal of Environmental Radioactivity, 2021, 233, 106604. | 1.7 | 3 |
| 79 | Radiokrypton Dating with Atom Trap Trace Analysis. Procedia Earth and Planetary Science, 2017, 17, 41-44. | 0.6 | 2 |
| 80 | An electromagnetic separation system for the enrichment of ^{39}Ar . Review of Scientific Instruments, 2020, 91, 033309. | 1.3 | 2 |
| 81 | Generation of metastable krypton using a 124-nm laser. Physical Review A, 2022, 105, . | 2.5 | 2 |
| 82 | ^{81}Kr reveals one-million-year-old groundwater at the Atlantic coast of Argentina as a record of Mid-Pleistocene climate. Journal of Hydrology, 2022, 610, 127846. | 5.4 | 2 |
| 83 | Large-scale paleo water-table rise in a deep desert aquifer recorded by dissolved noble gases. Journal of Hydrology, 2022, 612, 128114. | 5.4 | 2 |
| 84 | Note: Efficient generation of optical sidebands at GHz with a high-power tapered amplifier. Review of Scientific Instruments, 2014, 85, 046104. | 1.3 | 1 |
| 85 | Fast atom-trap analysis of ^{39}Ar with isotope pre-enrichment. Review of Scientific Instruments, 2022, 93, 023203. | 1.3 | 1 |
| 86 | Chronostratigraphy of the Larsen blue-ice area in northern Victoria Land, East Antarctica, and its implications for paleoclimate. Cryosphere, 2022, 16, 2301-2324. | 3.9 | 1 |
| 87 | Optically enhanced discharge excitation and trapping of ^{39}Ar . Physical Review A, 2022, 105, . | | 1 |
| 88 | Performance of the laser driven polarized hydrogen source at IUCF. , 1998, , . | | 0 |
| 89 | From helium-6 to krypton-81. AIP Conference Proceedings, 2001, , . | 0.4 | 0 |
| 90 | Atom trap trace analysis. AIP Conference Proceedings, 2001, , . | 0.4 | 0 |

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|----|---|-----|-----------|
| 91 | Atom Trap, Krypton-81, and Saharan Water. Nuclear Physics News, 2008, 18, 24-27. | 0.4 | 0 |
| 92 | Simple Atom, Extreme Nucleus-Laser Trapping and Probing of ^6He and ^8He . Nuclear Physics News, 2009, 19, 28-32. | 0.4 | 0 |
| 93 | ^{81}Kr dating – A tool for finding and studying paleogroundwater. E3S Web of Conferences, 2019, 98, 11002. | 0.5 | 0 |
| 94 | SEARCH FOR THE ELECTRIC DIPOLE MOMENT OF RADIUM-225. , 2010, , . | | 0 |
| 95 | Search For a Permanent Electric Dipole Moment (EDM) of ^{225}Ra Atom. , 2015, , . | | 0 |
| 96 | New determination of the gravitational constant G . National Science Review, 2020, 7, 1796-1797. | 9.5 | 0 |
| 97 | Halo Nuclei in Laser Light. Lecture Notes in Physics, 2008, , 131-153. | 0.7 | 0 |