

Richard C Thompson

List of Publications by Year in descending order

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87
papers

1,712
citations

257450

24
h-index

315739

38
g-index

88
all docs

88
docs citations

88
times ranked

1048
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Chapter 7 HITRAP: A Facility at GSI for Highly Charged Ions. <i>Advances in Quantum Chemistry</i> , 2008, 53, 83-98. | 0.8 | 109 |
| 2 | High-resolution measurements of isotope shifts and hyperfine structure in stable and radioactive lead isotopes. <i>Journal of Physics G: Nuclear Physics</i> , 1983, 9, 443-458. | 0.8 | 85 |
| 3 | Double Well Potentials and Quantum Phase Transitions in Ion Traps. <i>Physical Review Letters</i> , 2008, 101, 260504. | 7.8 | 83 |
| 4 | High precision hyperfine measurements in Bismuth challenge bound-state strong-field QED. <i>Nature Communications</i> , 2017, 8, 15484. | 12.8 | 82 |
| 5 | Isotope shifts and hyperfine structure of the $4s^2S_{01} \rightarrow 4s4pP_{11}$ transition in calcium isotopes. <i>Physical Review C</i> , 1982, 26, 2194-2202. | 2.9 | 59 |
| 6 | Ion Coulomb crystals. <i>Contemporary Physics</i> , 2015, 56, 63-79. | 1.8 | 57 |
| 7 | Controlled photoionization loading of 88Sr^+ for precision ion-trap experiments. <i>Applied Physics B: Lasers and Optics</i> , 2007, 87, 411-415. | 2.2 | 47 |
| 8 | Axialization of Laser Cooled Magnesium Ions in a Penning Trap. <i>Physical Review Letters</i> , 2002, 89, 093003. | 7.8 | 46 |
| 9 | Observation of the hyperfine transition in lithium-like bismuth. $\text{Bi} \left(\frac{209}{80} \right)^{+}$ Towards a test of QED in strong magnetic fields. <i>Physical Review A</i> , 2014, 90, . | 2.5 | 45 |
| 10 | Resolved-Sideband Laser Cooling in a Penning Trap. <i>Physical Review Letters</i> , 2016, 116, 143002. | 7.8 | 45 |
| 11 | Interferometric frequency measurements of $^{130}\text{Te}^2$ transitions at 486 nm. <i>Optics Communications</i> , 1985, 54, 217-221. | 2.1 | 44 |
| 12 | Fundamental physics with trapped ions. <i>Contemporary Physics</i> , 1997, 38, 25-48. | 1.8 | 44 |
| 13 | Control of the conformations of ion Coulomb crystals in a Penning trap. <i>Nature Communications</i> , 2013, 4, 2571. | 12.8 | 44 |
| 14 | Laser cooling of externally produced Mg ions in a Penning trap for sympathetic cooling of highly charged ions. <i>Physical Review A</i> , 2013, 87, . | 2.5 | 41 |
| 15 | Sympathetic cooling and detection of molecular ions in a Penning trap. <i>Physical Review A</i> , 1999, 60, 3903-3910. | 2.5 | 39 |
| 16 | Precision measurement aspects of ion traps. <i>Measurement Science and Technology</i> , 1990, 1, 93-105. | 2.6 | 38 |
| 17 | Proposed precision laser spectrometer for trapped, highly charged ions. <i>Review of Scientific Instruments</i> , 2005, 76, 103102. | 1.3 | 37 |
| 18 | Monolithic microfabricated ion trap chip design for scaleable quantum processors. <i>New Journal of Physics</i> , 2006, 8, 232-232. | 2.9 | 32 |

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|----|--|------|-----------|
| 19 | Photon-correlation detection of ion-oscillation frequencies in quadrupole ion traps. <i>Physical Review A</i> , 1993, 47, 441-448. | 2.5 | 30 |
| 20 | High resolution laser spectroscopy of atomic systems. <i>Reports on Progress in Physics</i> , 1985, 48, 531-578. | 20.1 | 29 |
| 21 | Electronic detection of charged particle effects in a Penning trap. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2006, 39, 3131-3143. | 1.5 | 27 |
| 22 | Dynamics of laser-cooled Ca ⁺ ions in a Penning trap with a rotating wall. <i>Applied Physics B: Lasers and Optics</i> , 2012, 107, 1105-1115. | 2.2 | 25 |
| 23 | High resolution measurements of isotope shifts in lead. <i>Zeitschrift für Physik A</i> , 1982, 305, 89-90. | 1.4 | 24 |
| 24 | Ion dynamics in perturbed quadrupole ion traps. <i>Physical Review A</i> , 1998, 57, 1944-1956. | 2.5 | 24 |
| 25 | An improved value for the hyperfine splitting of hydrogen-like ²⁰⁹ Bi ⁸²⁺ . <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2015, 48, 144022. | 1.5 | 24 |
| 26 | Proposal for a planar Penning ion trap. <i>Physical Review A</i> , 2005, 72, . | 2.5 | 23 |
| 27 | First observation of the ground-state hyperfine transition in ²⁰⁹ Bi ⁸⁰⁺ . <i>Physica Scripta</i> , 2013, T156, 014016. | 2.5 | 23 |
| 28 | Doppler cooling of Ca ⁺ ions in a Penning trap. <i>Physical Review A</i> , 2004, 69, . | 2.5 | 22 |
| 29 | Progress towards an optical frequency standard based on ion traps. <i>Applied Physics B, Photophysics and Laser Chemistry</i> , 1988, 46, 87-93. | 1.5 | 21 |
| 30 | Novel designs for Penning ion traps. <i>Journal of Modern Optics</i> , 2007, 54, 1581-1594. | 1.3 | 21 |
| 31 | Optical sideband spectroscopy of a single ion in a Penning trap. <i>Physical Review A</i> , 2014, 89, . | 2.5 | 21 |
| 32 | Two-ion Coulomb crystals of Ca ⁺ in a Penning trap. <i>Optics Express</i> , 2008, 16, 2351. | 3.4 | 20 |
| 33 | Simple model for the laser cooling of an ion in a Penning trap. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2000, 33, 3393-3405. | 1.5 | 18 |
| 34 | Applications of laser cooled ions in a Penning trap. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2009, 42, 154003. | 1.5 | 18 |
| 35 | Self-broadening at low densities in the spectrum of neon. <i>Journal of Physics B: Atomic and Molecular Physics</i> , 1983, 16, 537-551. | 1.6 | 16 |
| 36 | Laser spectroscopy of hyperfine structure in highly charged ions: a test of QED at high fields. <i>Canadian Journal of Physics</i> , 2007, 85, 403-408. | 1.1 | 16 |

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|----|---|-----|-----------|
| 37 | Laser spectroscopy measurement of the $2s$ -hyperfine splitting in lithium-like bismuth. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 085004. | 1.5 | 16 |
| 38 | Sideband cooling of small ion Coulomb crystals in a Penning trap. Journal of Modern Optics, 2018, 65, 549-559. | 1.3 | 16 |
| 39 | Absorption and Faraday spectroscopy of the 876 nm line in Bi I. Journal of Physics B: Atomic and Molecular Physics, 1986, 19, 1143-1152. | 1.6 | 15 |
| 40 | Magnetically induced electron shelving in a trapped Ca^{+} ion. Physical Review A, 2010, 81, . | 2.5 | 15 |
| 41 | Rapid crystallization of externally produced ions in a Penning trap. Physical Review A, 2016, 94, . | 2.5 | 15 |
| 42 | Nuclear radii of thorium isotopes from laser spectroscopy of stored ions. Zeitschrift für Physik A, Atomic Nuclei, 1989, 334, 103-108. | 0.3 | 14 |
| 43 | The motion of small numbers of ions in a Penning trap. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1997, 42, 271-277. | 1.0 | 14 |
| 44 | Quantum jumps in singly ionized magnesium. Journal of Physics B: Atomic, Molecular and Optical Physics, 2002, 35, 205-216. | 1.5 | 13 |
| 45 | Fast shuttling of ions in a scalable Penning trap array. Review of Scientific Instruments, 2010, 81, 013111. | 1.3 | 13 |
| 46 | Sideband cooling of the radial modes of motion of a single ion in a Penning trap. Physical Review A, 2019, 100, . | 2.5 | 13 |
| 47 | Trapped Ion Optical Frequency Standards. Physica Scripta, 2004, T112, 63. | 2.5 | 12 |
| 48 | Dynamics of axialized laser-cooled ions in a Penning trap. Physical Review A, 2008, 78, . | 2.5 | 12 |
| 49 | Resonance broadening in neon at low densities. Journal of Physics B: Atomic and Molecular Physics, 1979, 12, L143-L146. | 1.6 | 11 |
| 50 | Quantum optics with trapped and laser cooled magnesium ions. Physica Scripta, 1992, 46, 285-288. | 2.5 | 11 |
| 51 | Theory and simulation of ion Coulomb crystal formation in a Penning trap. Applied Physics B: Lasers and Optics, 2014, 114, 157-166. | 2.2 | 11 |
| 52 | Laser cooling in the Penning trap: an analytical model for cooling rates in the presence of an axializing field. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 035301. | 1.5 | 10 |
| 53 | Plans for laser spectroscopy of trapped cold hydrogen-like HCl. Nuclear Instruments & Methods in Physics Research B, 2005, 235, 201-205. | 1.4 | 9 |
| 54 | Sympathetic cooling in two-species ion crystals in a Penning trap. Journal of Modern Optics, 2018, 65, 538-548. | 1.3 | 9 |

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|----|--|------|-----------|
| 55 | Hyperfine transition in $^{209}\text{Bi}^{80+}$ "one step forward. <i>Physica Scripta</i> , 2015, T166, 014021. | 2.5 | 8 |
| 56 | Population dynamics in sideband cooling of trapped ions outside the Lamb-Dicke regime. <i>Physical Review A</i> , 2019, 99, . | 2.5 | 8 |
| 57 | Physics with Trapped Charged Particles. , 2014, , . | | 8 |
| 58 | Simulations of Laser Cooling in a Penning Ion Trap. <i>Physica Scripta</i> , 1988, T22, 318-320. | 2.5 | 7 |
| 59 | Trapped-ion quantum error-correcting protocols using only global operations. <i>Physical Review A</i> , 2015, 92, . | 2.5 | 7 |
| 60 | Laser cooling of ions stored in a Penning trap: A phase-space picture. <i>Physical Review A</i> , 1999, 59, 4530-4546. | 2.5 | 6 |
| 61 | Improvement of laser cooling of ions in a Penning trap by use of the axialization technique. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2003, 36, 961-970. | 1.5 | 6 |
| 62 | Laser spectroscopy of the ground-state hyperfine structure in H-like and Li-like bismuth. <i>Journal of Physics: Conference Series</i> , 2015, 583, 012002. | 0.4 | 6 |
| 63 | Ions that fit into place. <i>Nature</i> , 1988, 334, 293-294. | 27.8 | 5 |
| 64 | Investigation of ion dynamics in a Penning trap using a pulse-probe technique. <i>Applied Physics B: Lasers and Optics</i> , 1995, 60, 375-382. | 2.2 | 5 |
| 65 | The hyperfine puzzle of strong-field bound-state QED. <i>Hyperfine Interactions</i> , 2019, 240, 1. | 0.5 | 5 |
| 66 | SpecTrap: precision spectroscopy of highly charged ions "status and prospects. <i>Physica Scripta</i> , 2013, T156, 014096. | 2.5 | 4 |
| 67 | Coherence properties of highly-excited motional states of a trapped ion. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2021, 54, 015501. | 1.5 | 4 |
| 68 | Is quantum mechanics linear ?. <i>Nature</i> , 1989, 341, 571-572. | 27.8 | 3 |
| 69 | Spectroscopy and quantum optics with ion traps. <i>Physica Scripta</i> , 1997, T72, 24-33. | 2.5 | 3 |
| 70 | HITRAP " a facility for experiments on heavy highly charged ions and on antiprotons. <i>Journal of Physics: Conference Series</i> , 2009, 194, 142007. | 0.4 | 3 |
| 71 | PENNING TRAPS. <i>Advanced Textbooks in Physics</i> , 2016, , 1-33. | 0.1 | 3 |
| 72 | Hot favourites for atom cooling. <i>Nature</i> , 1988, 335, 588-589. | 27.8 | 2 |

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|----|---|------|-----------|
| 73 | Limits to improvements?. Nature, 1993, 362, 789-790. | 27.8 | 2 |
| 74 | Penning-trap experiments for spectroscopy of highly-charged ions at HITRAP. Physica Scripta, 2015, T166, 014066. | 2.5 | 2 |
| 75 | Lifetimes and $\langle i \rangle g \langle /i \rangle$ -factors of the HFS states in H-like and Li-like bismuth. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 085003. | 1.5 | 2 |
| 76 | Certifying Multilevel Coherence in the Motional State of a Trapped Ion. PRX Quantum, 2021, 2, . | 9.2 | 2 |
| 77 | No need for nonlinearity?. Nature, 1990, 346, 13-14. | 27.8 | 1 |
| 78 | Coherent manipulation of two dipole- \leftrightarrow dipole interacting ions. Journal of Modern Optics, 2000, 47, 401-414. | 1.3 | 1 |
| 79 | Chapter 1: Physics with Trapped Charged Particles. , 2014, , 1-24. | | 1 |
| 80 | Clarity in ion traps. Nature, 1992, 357, 280-281. | 27.8 | 0 |
| 81 | A study of trapped ion dynamics by photon-correlation and pulse-probe techniques. AIP Conference Proceedings, 1995, , . | 0.4 | 0 |
| 82 | The quantum Zeno effect in trapped ions. , 1999, , . | | 0 |
| 83 | â€˜Measuring the quantum mechanical wave functionâ€™ by M.G. Raymer (1997). Contemporary Physics, 2009, 50, 321-321. | 1.8 | 0 |
| 84 | â€˜The Rydberg constantâ€™ (1974) by G.W. Series. Contemporary Physics, 2009, 50, 129-129. | 1.8 | 0 |
| 85 | Ion trapping. Applied Physics B: Lasers and Optics, 2012, 107, 881-881. | 2.2 | 0 |
| 86 | Special issue in memory of Prof Danny Segal (1960â€“2015). Journal of Modern Optics, 2018, 65, 481-481. | 1.3 | 0 |
| 87 | Optical Sideband Cooling of Ions in a Penning Trap. , 2016, , . | | 0 |