

Olle G Heinonen

List of Publications by Year in descending order

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165
papers

6,901
citations

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168
all docs

168
docs citations

168
times ranked

6971
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| 1 | Blowing magnetic skyrmion bubbles. <i>Science</i> , 2015, 349, 283-286. | 12.6 | 1,177 |
| 2 | Direct observation of the skyrmion Hall effect. <i>Nature Physics</i> , 2017, 13, 162-169. | 16.7 | 858 |
| 3 | Giant Magnetic Anisotropy in Tetragonal FeCo Alloys. <i>Physical Review Letters</i> , 2004, 93, 027203. | 7.8 | 331 |
| 4 | Recording on Bit-Patterned Media at Densities of 1 Tb/in ² and Beyond. <i>IEEE Transactions on Magnetics</i> , 2006, 42, 2255-2260. | 2.1 | 255 |
| 5 | QMCPACK: an open source <i>ab initio</i> quantum Monte Carlo package for the electronic structure of atoms, molecules and solids. <i>Journal of Physics Condensed Matter</i> , 2018, 30, 195901. | 1.8 | 187 |
| 6 | Recording potential of bit-patterned media. <i>Applied Physics Letters</i> , 2006, 88, 222512. | 3.3 | 137 |
| 7 | Spectral Analysis of Topological Defects in an Artificial Spin-Ice Lattice. <i>Physical Review Letters</i> , 2013, 110, 117205. | 7.8 | 127 |
| 8 | A review of high magnetic moment thin films for microscale and nanotechnology applications. <i>Applied Physics Reviews</i> , 2016, 3, 011301. | 11.3 | 121 |
| 9 | Electron-phonon interactions and the breakdown of the dissipationless quantum Hall effect. <i>Physical Review B</i> , 1984, 30, 3016-3019. | 3.2 | 120 |
| 10 | Universal scaling laws of keyhole stability and porosity in 3D printing of metals. <i>Nature Communications</i> , 2021, 12, 2379. | 12.8 | 105 |
| 11 | Spin-Wave-Mode Coexistence on the Nanoscale: A Consequence of the Oersted-Field-Induced Asymmetric Energy Landscape. <i>Physical Review Letters</i> , 2013, 110, 257202. | 7.8 | 98 |
| 12 | Nanoscale structure of the magnetic induction at monopole defects in artificial spin-ice lattices. <i>Physical Review B</i> , 2011, 83, . | 3.2 | 96 |
| 13 | Nanoscale Skyrmions in a Nonchiral Metallic Multiferroic: Ni ₂ MnGa. <i>Nano Letters</i> , 2016, 16, 4141-4148. | 9.1 | 79 |
| 14 | Recording on bit-patterned media at densities of 1Tb/in ² and beyond. , 2006, , . | | 73 |
| 15 | Dynamic response of an artificial square spin ice. <i>Physical Review B</i> , 2016, 93, . | 3.2 | 71 |
| 16 | Benchmarks and Reliable DFT Results for Spin Gaps of Small Ligand Fe(II) Complexes. <i>Journal of Chemical Theory and Computation</i> , 2018, 14, 2304-2311. | 5.3 | 71 |
| 17 | Predicting the morphologies of $\hat{\Gamma}^1$ precipitates in cobalt-based superalloys. <i>Acta Materialia</i> , 2017, 141, 273-284. | 7.9 | 70 |
| 18 | Giant Anisotropy of Gilbert Damping in Epitaxial CoFe Films. <i>Physical Review Letters</i> , 2019, 122, 117203. | 7.8 | 70 |

| # | ARTICLE | IF | CITATIONS |
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| 19 | Atomic and electronic structure of the CoFeB/MgO interface from first principles. Applied Physics Letters, 2006, 89, 142507. | 3.3 | 68 |
| 20 | Nonlinear Planar Hall Effect. Physical Review Letters, 2019, 123, 016801. | 7.8 | 67 |
| 21 | Direct Observation of Unconventional Topological Spin Structure in Coupled Magnetic Discs. Physical Review Letters, 2012, 108, 067205. | 7.8 | 65 |
| 22 | Magnetization switching using topological surface states. Science Advances, 2019, 5, eaaw3415. | 10.3 | 65 |
| 23 | Reconfigurable wave band structure of an artificial square ice. Physical Review B, 2016, 93, . | 3.2 | 64 |
| 24 | Current distributions in the quantum Hall effect. Physical Review B, 1985, 32, 633-639. | 3.2 | 60 |
| 25 | Phase stability of TiO ₂ polymorphs from diffusion Quantum Monte Carlo. New Journal of Physics, 2016, 18, 113049. | 2.9 | 59 |
| 26 | Benchmark problems for numerical implementations of phase field models. Computational Materials Science, 2017, 126, 139-151. | 3.0 | 57 |
| 27 | Observation of Out-of-Plane Spin Texture in a Single-Domain SrTiO_3 Miscibility Letters, 2018, 130, 27-6803 | 5.3 | 53 |
| 28 | Miscibility Gap Closure, Interface Morphology, and Phase Microstructure of 3D Li _x FePO ₄ Nanoparticles from Surface Wetting and Coherency Strain. ACS Nano, 2015, 9, 9757-9771. | 14.6 | 52 |
| 29 | Dynamics of reconfigurable artificial spin ice: Toward magnonic functional materials. APL Materials, 2020, 8, . | 5.1 | 52 |
| 30 | Decoherence and Mode Hopping in a Magnetic Tunnel Junction Based Spin Torque Oscillator. Physical Review Letters, 2012, 108, 207203. | 7.8 | 51 |
| 31 | Topological phase transformations and intrinsic size effects in ferroelectric nanoparticles. Nanoscale, 2017, 9, 1616-1624. | 5.6 | 49 |
| 32 | Sequential Infiltration Synthesis of Electronic Materials: Group 13 Oxides via Metal Alkyl Precursors. Chemistry of Materials, 2019, 31, 5274-5285. | 6.7 | 48 |
| 33 | Generation of magnetic skyrmion bubbles by inhomogeneous spin Hall currents. Physical Review B, 2016, 93, . | 3.2 | 45 |
| 34 | Bias dependence of perpendicular spin torque and of free- and fixed-layer eigenmodes in MgO-based nanopillars. Physical Review B, 2011, 83, . | 3.2 | 43 |
| 35 | Critical behavior of a frustrated Ising system. Physical Review B, 1989, 40, 9052-9055. | 3.2 | 41 |
| 36 | Nanoscale Control of Oxygen Defects and Metal-Insulator Transition in Epitaxial Vanadium Dioxides. ACS Nano, 2018, 12, 7159-7166. | 14.6 | 41 |

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|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------|
| 37 | Accuracy of <i>ab initio</i> electron correlation and electron densities in vanadium dioxide. <i>Physical Review Materials</i> , 2017, 1, . | 2.4 | 41 |
| 38 | Dynamics of magnetization coupled to a thermal bath of elastic modes. <i>Physical Review B</i> , 2005, 72, . | 3.2 | 40 |
| 39 | Dielectric breakdown of MgO magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2009, 94, . | 3.3 | 38 |
| 40 | Broken vertex symmetry and finite zero-point entropy in the artificial square ice ground state. <i>Physical Review B</i> , 2015, 92, . | 3.2 | 38 |
| 41 | Mobile Néel skyrmions at room temperature: status and future. <i>AIP Advances</i> , 2016, 6, . | 1.3 | 38 |
| 42 | Electronic properties of doped and defective NiO: A quantum Monte Carlo study. <i>Physical Review Materials</i> , 2017, 1, . | 2.4 | 36 |
| 43 | Ensemble Density Functional Theory of the Fractional Quantum Hall Effect. <i>Physical Review Letters</i> , 1995, 75, 4110-4113. | 7.8 | 35 |
| 44 | Read and write processes, and head technology for perpendicular recording. <i>Journal of Magnetism and Magnetic Materials</i> , 2009, 321, 495-507. | 2.3 | 34 |
| 45 | Tailoring Spin-Wave Channels in a Reconfigurable Artificial Spin Ice. <i>Physical Review Applied</i> , 2020, 13, . | 3.8 | 34 |
| 46 | Perpendicular Spin Torque in Magnetic Tunnel Junctions. <i>Physical Review Letters</i> , 2010, 105, 066602. | 7.8 | 33 |
| 47 | Polymer piezoelectric energy harvesters for low wind speed. <i>Applied Physics Letters</i> , 2014, 104, . | 3.3 | 33 |
| 48 | Thermal Magnetic Noise in Tunneling Readers. <i>IEEE Transactions on Magnetics</i> , 2004, 40, 2227-2232. | 2.1 | 32 |
| 49 | Magnetization reversal in circularly exchange-biased ferromagnetic disks. <i>Physical Review B</i> , 2009, 79, . | 3.2 | 32 |
| 50 | The effect of a Ta oxygen scavenger layer on HfO ₂ -based resistive switching behavior: thermodynamic stability, electronic structure, and low-bias transport. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 7502-7510. | 2.8 | 31 |
| 51 | Tunneling Magnetoresistive Heads Beyond 150 Gbit/in ² . <i>IEEE Transactions on Magnetics</i> , 2004, 40, 307-312. | 2.1 | 30 |
| 52 | Oscillatory Noncollinear Magnetism Induced by Interfacial Charge Transfer in Superlattices Composed of Metallic Oxides. <i>Physical Review X</i> , 2016, 6, . | 8.9 | 30 |
| 53 | Intrinsic frequency doubling in a magnetic tunnel junction-based spin torque oscillator. <i>Journal of Applied Physics</i> , 2011, 110, . | 2.5 | 28 |
| 54 | Generation linewidth of mode-hopping spin torque oscillators. <i>Physical Review B</i> , 2014, 89, . | 3.2 | 28 |

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| 55 | Topological Hall Effect in a Topological Insulator Interfaced with a Magnetic Insulator. Nano Letters, 2021, 21, 84-90. | 9.1 | 28 |
| 56 | Quantum Monte Carlo analysis of a charge ordered insulating antiferromagnet: the Ti_4O_7 Magnéli phase. Physical Chemistry Chemical Physics, 2016, 18, 18323-18335. | 2.8 | 27 |
| 57 | Nature of Interlayer Binding and Stacking of sp^2 Hybridized Carbon Layers: A Quantum Monte Carlo Study. Journal of Chemical Theory and Computation, 2017, 13, 5639-5646. | 5.3 | 27 |
| 58 | Conductance plateaus in the quantized Hall effect. Physical Review B, 1983, 28, 6119-6122. | 3.2 | 26 |
| 59 | Controllable skyrmion chirality in ferroelectrics. Scientific Reports, 2020, 10, 8657. | 3.3 | 26 |
| 60 | Nonlinear Hall effect in Weyl semimetals induced by chiral anomaly. Physical Review B, 2021, 103, . | 3.2 | 26 |
| 61 | Phase field benchmark problems for dendritic growth and linear elasticity. Computational Materials Science, 2018, 149, 336-347. | 3.0 | 25 |
| 62 | Temperature dependence of linewidth in nanocontact based spin torque oscillators: Effect of multiple oscillatory modes. Physical Review B, 2012, 86, . | 3.2 | 24 |
| 63 | Topologically Nontrivial Magnon Bands in Artificial Square Spin Ices with Dzyaloshinskii-Moriya Interaction. Physical Review Applied, 2017, 8, . | 3.8 | 24 |
| 64 | Metal-insulator transition tuned by oxygen vacancy migration across TiO_2/VO_2 interface. Scientific Reports, 2020, 10, 18554. | 3.3 | 24 |
| 65 | Spin-ensemble density-functional theory for inhomogeneous quantum Hall systems. Physical Review B, 1997, 56, 10373-10382. | 3.2 | 22 |
| 66 | Remanent magnetic states and interactions in nano-pillars. Nanotechnology, 2006, 17, 4367-4373. | 2.6 | 22 |
| 67 | Strongly localized magnetization modes in permalloy antidot lattices. Applied Physics Letters, 2013, 102, . | 3.3 | 22 |
| 68 | Spin-to-Charge Conversion in Magnetic Weyl Semimetals. Physical Review Letters, 2019, 123, 187201. | 7.8 | 22 |
| 69 | Micromagnetic modeling of spin-wave dynamics in exchange-biased permalloy disks. Physical Review B, 2007, 76, . | 3.2 | 21 |
| 70 | Switching-current reduction in perpendicular-anisotropy spin torque magnetic tunnel junctions. Journal of Applied Physics, 2010, 108, 014305. | 2.5 | 21 |
| 71 | Mode-coupling mechanisms in nanocontact spin-torque oscillators. Physical Review B, 2015, 91, . | 3.2 | 21 |
| 72 | Doping a bad metal: Origin of suppression of the metal-insulator transition in nonstoichiometric VO_2 . Physical Review B, 2020, 101, . | 3.2 | 21 |

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| 91 | Optimized structure and electronic band gap of monolayer GeSe from quantum Monte Carlo methods. <i>Physical Review Materials</i> , 2021, 5, . | 2.4 | 16 |
| 92 | Zirconia and hafnia polymorphs: Ground-state structural properties from diffusion Monte Carlo. <i>Physical Review Materials</i> , 2018, 2, . | 2.4 | 16 |
| 93 | Extensions of perpendicular recording. <i>Journal of Magnetism and Magnetic Materials</i> , 2008, 320, 2885-2888. | 2.3 | 15 |
| 94 | Review of the Physics of Magnetoresistive Readers. <i>IEEE Transactions on Magnetics</i> , 2008, 44, 2465-2471. | 2.1 | 15 |
| 95 | Topological response of the anomalous Hall effect in MnBi ₂ Te ₄ due to magnetic canting. <i>Npj Quantum Materials</i> , 2022, 7, . | 5.2 | 15 |
| 96 | Relative chirality of octupolar columns in a triangular array. <i>Physical Review B</i> , 1993, 47, 8479-8485. | 3.2 | 14 |
| 97 | Ensemble density-functional approach to charge-spin textures in inhomogeneous quantum Hall systems. <i>Physical Review B</i> , 1999, 59, 8073-8083. | 3.2 | 14 |
| 98 | Electronic transport through Fe/MgO/Fe(100) tunnel junctions. <i>Journal of Magnetism and Magnetic Materials</i> , 2007, 316, 481-483. | 2.3 | 14 |
| 99 | Parallel <i>O</i> (<i>N</i>) Stokes TM solver towards scalable Brownian dynamics of hydrodynamically interacting objects in general geometries. <i>Journal of Chemical Physics</i> , 2017, 146, 244114. | 3.0 | 14 |
| 100 | Quantum Monte Carlo benchmarking of large noncovalent complexes in the L7 benchmark set. <i>Journal of Chemical Physics</i> , 2020, 153, 194113. | 3.0 | 14 |
| 101 | An <i>O</i> (<i>N</i>) and parallel approach to integral problems by a kernel-independent fast multipole method: Application to polarization and magnetization of interacting particles. <i>Journal of Chemical Physics</i> , 2016, 145, . | 3.0 | 13 |
| 102 | Origin of metal-insulator transitions in correlated perovskite metals. <i>Physical Review Research</i> , 2022, 4, . | 3.6 | 13 |
| 103 | Moving toward an atomistic reader model. <i>IEEE Transactions on Magnetics</i> , 2005, 41, 936-940. | 2.1 | 12 |
| 104 | Bragg Coherent Diffractive Imaging of Zinc Oxide Acoustic Phonons at Picosecond Timescales. <i>Scientific Reports</i> , 2017, 7, 9823. | 3.3 | 12 |
| 105 | https://arxiv.org/abs/2205.12345 First-principles study on magnetic states and the anomalous Hall conductivity of $M_{6-x}Nb_xS_6$ ($M = \text{Mn, Ni, Co, Fe}$). <i>Physical Review B</i> , 2022, 105, 114407. | 3.0 | 12 |

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| 109 | Metamagnetism of few-layer topological antiferromagnets. <i>Physical Review Materials</i> , 2021, 5, . | 2.4 | 11 |
| 110 | Internal structure of a Landau quasiparticle wave packet. <i>Physical Review B</i> , 1987, 36, 3565-3576. | 3.2 | 10 |
| 111 | Micromagnetic modeling of the magnetization dynamics in a circularly exchange-biased and exchange-coupled ferromagnetic multilayer. <i>Physical Review B</i> , 2009, 80, . | 3.2 | 10 |
| 112 | A model of the exchange bias setting process in magnetic read sensors. <i>Applied Physics Letters</i> , 2009, 95, 022504. | 3.3 | 10 |
| 113 | Broad-band FMR study of ferromagnetic thin films patterned with antidot lattices. <i>Physica C: Superconductivity and Its Applications</i> , 2012, 479, 83-87. | 1.2 | 10 |
| 114 | Topological surface states in strained Dirac semimetal thin films. <i>Physical Review B</i> , 2020, 102, . | 3.2 | 10 |
| 115 | Electron-phonon interactions and charge-density-wave formations in strong magnetic fields. <i>Physical Review B</i> , 1986, 33, 5461-5464. | 3.2 | 9 |
| 116 | Commensurate and incommensurate conformations in a simple model of crystalline helical polymers. <i>Polymer</i> , 1991, 32, 2155-2160. | 3.8 | 8 |
| 117 | Effect of Interlayer on Read Write Processes in Perpendicular Recording. <i>IEEE Transactions on Magnetics</i> , 2008, 44, 3400-3403. | 2.1 | 8 |
| 118 | Tailoring magnetic skyrmions by geometric confinement of magnetic structures. <i>Applied Physics Letters</i> , 2017, 111, 242405. | 3.3 | 8 |
| 119 | Influence of MgO barrier quality on spin-transfer torque in magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2018, 112, . | 3.3 | 8 |
| 120 | Structure and dynamics of hydrodynamically interacting finite-size Brownian particles in a spherical cavity: Spheres and cylinders. <i>Journal of Chemical Physics</i> , 2020, 152, 204109. | 3.0 | 8 |
| 121 | Dynamic helicity-reversal defects in polytetrafluoroethylene chains. <i>Polymer</i> , 1989, 30, 585-589. | 3.8 | 7 |
| 122 | Surface effects on bulk plasmons. <i>Physical Review B</i> , 1993, 48, 12240-12244. | 3.2 | 7 |
| 123 | Tunable Mode Coupling in Nanocontact Spin-Torque Oscillators. <i>Physical Review Applied</i> , 2017, 8, . | 3.8 | 7 |
| 124 | Compton profile of $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle \text{VO} \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:msub} \rangle$ across the metal-insulator transition: Evidence of a non-Fermi liquid metal. <i>Physical Review B</i> , 2019, 99, . | 3.2 | 7 |
| 125 | Nonlinear steady-state mesoscopic transport: Formalism. <i>Physical Review B</i> , 1995, 51, 14421-14436. | 3.2 | 6 |
| 126 | Transport properties of MgO magnetic tunnel junctions. <i>Journal of Applied Physics</i> , 2009, 105, 113905. | 2.5 | 6 |

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| 127 | Publisher's Note: Direct Observation of Unconventional Topological Spin Structure in Coupled Magnetic Discs [Phys. Rev. Lett.108, 067205 (2012)]. Physical Review Letters, 2012, 108, . | 7.8 | 6 |
| 128 | Influence of Elastic and Surface Strains on the Optical Properties of Semiconducting Core-Shell Nanoparticles. Physical Review Applied, 2015, 4, . | 3.8 | 6 |
| 129 | Ferromagnetic resonance in a topographically modulated permalloy film. Physical Review B, 2015, 91, . | 3.2 | 6 |
| 130 | Quantum Monte Carlo Calculations of Catalytic Energy Barriers in a Metallorganic Framework with Transition-Metal-Functionalized Nodes. Journal of Physical Chemistry C, 2018, 122, 16683-16691. | 3.1 | 6 |
| 131 | Local structure of potassium doped nickel oxide: A combined experimental-theoretical study. Physical Review Materials, 2019, 3, . | 2.4 | 6 |
| 132 | Magnetism and magnetotransport in the kagome antiferromagnet Mn_3Ge . Physical Review B, 2022, 105, . | 3.2 | 6 |
| 133 | Monte Carlo simulations of ferromagnetic-antiferromagnetic grains. Journal of Applied Physics, 2001, 89, 7552-7554. | 2.5 | 5 |
| 134 | Dynamics of laminated write elements. Journal of Applied Physics, 2006, 99, 08S302. | 2.5 | 5 |
| 135 | Mode coupling in spin torque oscillators. Journal of Magnetism and Magnetic Materials, 2016, 414, 227-242. | 2.3 | 5 |
| 136 | Controlling the symmetry of cadmium arsenide films by epitaxial strain. APL Materials, 2021, 9, . | 5.1 | 5 |
| 137 | Observation of Defect-Assisted Magnetic Vortex Core Reversal at Ultralow Critical Velocity. Physical Review Applied, 2021, 16, . | 3.8 | 5 |
| 138 | Defect energetics of cubic hafnia from quantum Monte Carlo simulations. Physical Review Materials, 2019, 3, . | 2.4 | 5 |
| 139 | Deviations from perfect integer quantum Hall effect. Physical Review B, 1992, 46, 1901-1904. | 3.2 | 4 |
| 140 | Crystal-field symmetry and ordered phases in arrays of helical XY spin chains. Physical Review B, 1993, 47, 2661-2670. | 3.2 | 4 |
| 141 | Failure of the integer quantum Hall effect without dissipation. Physical Review B, 1994, 49, 11230-11237. | 3.2 | 4 |
| 142 | Vortex jump behavior in coupled nanomagnetic heterostructures. Applied Physics Letters, 2014, 105, 212409. | 3.3 | 4 |
| 143 | Evolutionary strategy for inverse charge measurements of dielectric particles. Journal of Chemical Physics, 2018, 148, 234302. | 3.0 | 4 |
| 144 | Microwave Oscillators and Detectors Based on Magnetic Tunnel Junctions. , 2021, , 3-44. | | 4 |

| # | ARTICLE | IF | CITATIONS |
|-----|---------------------------------------------------------------------------------------------------------------------------|----|-----------|
| 145 | <p> Magnetic ground states of a model for $M \times \text{Nb} \times S_6$ </p> | | |

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| 163 | Imaging Magnetic Domains in Functional Nanoscale Heterostructures using Lorentz microscopy. Microscopy and Microanalysis, 2018, 24, 910-911. | 0.4 | 0 |
| 164 | Ensemble Density Functional Approach to Inhomogeneous Quantum Hall Systems. , 2002, , 277-280. | | 0 |
| 165 | Ensemble Density Functional Theory for Inhomogeneous Fractional Quantum Hall Systems. , 1998, , 311-325. | | 0 |