# Eugene Tkalya

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 79 papers | 1,196 citations | 471509 17 h-index | 414414 32 g-index |
| 81 all docs | 81 docs citations | 81 times ranked | 465 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Proposal for a Nuclear Gamma-Ray Laser of Optical Range. Physical Review Letters, 2011, 106, 162501. | 7.8 | 110 |
| 2 | Decay of the low-energy nuclear isomer229Thm(3/2+,3.5Â±1.0â€‚eV)in solids (dielectrics and metals): A new scheme of experimental research. Physical Review C, 2000, 61, . | 2.9 | 88 |
| 3 | Results of a Direct Search Using Synchrotron Radiation for the Low-Energy<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Th</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>229</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>Nuclear | 7.8 | 87 |
| 4 | Radiative lifetime and energy of the low-energy isomeric level in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mmultiscripts><mml:mi mathvariant="normal">Th</mml:mi><mml:mprescripts /><mml:none /><mml:mn>229</mml:mn></mml:mmultiscripts></mml:mrow></mml:math>. Physical Review C, 2015, 92, . | 2.9 | 77 |
| 5 | Nuclear excitation in atomic transitions (NEET process analysis). Nuclear Physics A, 1992, 539, 209-222. | 1.5 | 69 |
| 6 | Matrix element of the anomalously low-energy (3.5Â±0.5 eV) transition in 229Th and the isomer lifetime. JETP Letters, 1998, 67, 251-256. | 1.4 | 56 |
| 7 | Processes of the nuclear isomer 229mTh(3/2+, 3.5 Â± 1.0 eV) resonant excitation by optical photons. Physica Scripta, 1996, 53, 296-299. | 2.5 | 52 |
| 8 | Spontaneous emission probability for M1 transition in a dielectric medium: 229m Th(3/2+, 3.5Â±1.0 eV) decay. JETP Letters, 2000, 71, 311-313. | 1.4 | 36 |
| 9 | Excitation and decay of low-lying nuclear states in a dense plasma produced by a subpicosecond laser pulse. Journal of Experimental and Theoretical Physics, 2000, 91, 1163-1175. | 0.9 | 32 |
| 10 | 229m Th(3/2+, 3.5 eV) and a check of the exponentiality of the decay law. JETP Letters, 1998, 67, 549-552. | 1.4 | 28 |
| 11 | Properties of the optical transition in the229Th nucleus. Physics-Uspekhi, 2003, 46, 315-320. | 2.2 | 28 |
| 12 | Alpha decay of the first excited state of the Th-229 nucleus. JETP Letters, 1996, 64, 345-349. | 1.4 | 27 |
| 13 | Excitation of the low-energy Th229m isomer in the electron bridge process via the continuum. Physical Review C, 2019, 100, . | 2.9 | 27 |
| 14 | Hydrogen Storage in Aromatic Carbon Ring Based Molecular Materials Decorated with Alkali or Alkali-Earth Metals. Journal of Physical Chemistry C, 2012, 116, 25286-25292. | 3.1 | 25 |
| 15 | Creation of inverse population in the<sup>229</sup>Th ground-state doublet by means of a narrowband laser. Laser Physics Letters, 2013, 10, 105808. | 1.4 | 24 |
| 16 | Theory of the nuclear excitation by electron transition process near theKedge. Physical Review A, 2007, 75, . | 2.5 | 20 |
| 17 | Excitation of tantalum-181 nuclei in a high-temperature femtosecond laser plasma. JETP Letters, 1999, 69, 371-376. | 1.4 | 19 |
| 18 | Excitation of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Th</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>229</mml:mn><mml:mi>m</mml:mi></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math> at Inelastic Scattering of Low Energy Electrons. Physical Review Letters, 2020, 124, 242501. | 7.8 | 19 |

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|---|---|---|---|
| 19 | Bremsstrahlung inÎ±decay and â€œinterference of space regionsâ€• Physical Review C, 1999, 60, . | 2.9 | 17 |
| 20 | Electron capture<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Î²</mml:mi></mml:mrow></mml:math>decay of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="normal">Be</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>7</mml:mn></mml:mrow></mml:mmultiscripts></mml:math>encapsulated in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" | 2.9 | 17 |
| 21 | Band structure and decay channels of thoriumâ€229 lowâ€lying isomeric state for ensemble of thorium atoms adsorbed on calcium fluoride. Physica Status Solidi C: Current Topics in Solid State Physics, 2015, 12, 1333-1337. | 0.8 | 17 |
| 22 | Theoretical study of molecular electronic excitations and optical transitions ofC60. Physical Review A, 2008, 77, . | 2.5 | 16 |
| 23 | Decay Rate of the Nuclear Isomer Th229(3/2+,7.8â€‰â€‰eV) in a Dielectric Sphere, Thin Film, and Metal Cavity. Physical Review Letters, 2018, 120, 122501. | 7.8 | 16 |
| 24 | Excitation of nuclei in a hot, dense plasma: Feasibility of experiments with 201Hg. JETP Letters, 1997, 66, 331-335. | 1.4 | 15 |
| 25 | Probability ofL-shell nuclear excitation by electronic transitions inHfm2178. Physical Review C, 2003, 68, . | 2.9 | 14 |
| 26 | Nonradiative decay of the low-lying nuclear isomer 229m Th(3.5 eV) in a metal. JETP Letters, 1999, 70, 371-374. | 1.4 | 13 |
| 27 | Induced decay of the nuclear isomer178m2Hf and the 'isomeric bomb'. Physics-Uspekhi, 2005, 48, 525-531. | 2.2 | 13 |
| 28 | Thermodynamical model for hydrogen storage capacity in carbon nanostructures. International Journal of Hydrogen Energy, 2015, 40, 4184-4193. | 7.1 | 13 |
| 29 | Anomalous magnetic hyperfine structure of theTh229ground-state doublet in muonic atoms. Physical Review A, 2016, 94, . | 2.5 | 13 |
| 30 | Trapping, retention and laser cooling of Th<sup>3+</sup> ions in a multisection linear quadrupole trap. Quantum Electronics, 2017, 47, 406-411. | 1.0 | 13 |
| 31 | Experimental studies of thorium ion implantation from pulse laser plasma into thin silicon oxide layers. Laser Physics Letters, 2018, 15, 056101. | 1.4 | 13 |
| 32 | Cross sections of electron excitation of atomic nuclei in plasma. Physical Review C, 2012, 85, . | 2.9 | 10 |
| 33 | Theoretical study of the pressure effect on the electron-capture<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î²</mml:mi></mml:math>decay of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mrow /><mml:mn>7</mml:mn></mml:msup></mml:math>Be in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mrow /> | 2.9 | 10 |
| 34 | Nanocluster metal films as thermoelectric material for radioisotope mini battery unit. Chemical Physics, 2016, 478, 2-7. | 1.9 | 10 |
| 35 | Induced decay ofHf178m2: Theoretical analysis of experimental results. Physical Review C, 2005, 71, . | 2.9 | 9 |
| 36 | Electronic and transport properties of rectangular graphene macromolecules and zigzag carbon nanotubes of finite length. Physical Review B, 2009, 79, . | 3.2 | 8 |

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|---|---|---|---|
| 37 | Nuclear capture<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î²</mml:mi></mml:math>decay of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mrow /><mml:mn>7</mml:mn></mml:msup></mml:math>Be located inside and outside the C<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>36</mml:mn></mml:msub></mml:math>fullerene. Physical Review C, 2012, 86, . | 2.9 | 8 |
| 38 | Loading of mass spectrometry ion trap with Th ions by laser ablation for nuclear frequency standard application. European Journal of Mass Spectrometry, 2017, 23, 146-151. | 1.0 | 8 |
| 39 | Decay of the low-energy nuclear Th229m isomer via atomic Rydberg states. Physical Review C, 2019, 100, | 2.9 | 8 |
| 40 | Estimation of the decay rate of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Be</mml:mi><mml:mprescripts /><mml:none /><mml:mn>7</mml:mn></mml:mmultiscripts></mml:math> and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Be</mml:mi><mml:mn>2</mml:mn><mml:mprescripts /><mml:none /><mml:mn>7</mml:mn></mml:mmultiscripts></mml:math> encapsulated in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>C</mml:mi><mml:mn>60</mml:mn></mml:msub></mml:math> P | 2.9 | 8 |
| 41 | On the quark structure of the lightest nuclei. Zeitschrift FÃ¼r Physik A, 1983, 313, 357-366. | 1.4 | 7 |
| 42 | Modified carbon nanostructures as materials for hydrogen storage. Russian Physics Journal, 2009, 52, 1235-1241. | 0.4 | 7 |
| 43 | Excitation of atomic nuclei in hot plasma through resonance inverse electron bridge. Physical Review C, 2014, 90, . | 2.9 | 7 |
| 44 | Multiple locations of boron atoms in the exohedral and endohedral <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mn>60</mml:mn></mml:msub></mml:math> fullerene. Physical Review A, 2022, 105, . | 2.5 | 7 |
| 45 | Excitation of low-lying nuclear levels in a nonrelativistic hot dense laser-produced plasma. Quantum Electronics, 1999, 29, 55-58. | 1.0 | 6 |
| 46 | Magnetic hyperfine structure of the ground-state doublet in highly charged ions<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Th</mml:mi><mml:none /><mml:mrow><mml:mn>89</mml:mn><mml:mo>+</mml:mo><mml:mo>,</mml:mo><mml:mn>87</mml:mn><mml:mo>+</mml:mo></mml:mrow><mml:none /><mml:mn>229</mml:mn></mml:mmultiscripts></mml:math>and the Bohr-Weisskopf effect. Physical Review C, 2016, 94, . | 2.9 | 6 |
| 47 | Mass selective laser cooling of 229Th3+ in a multisectional linear Paul trap loaded with a mixture of thorium isotopes. European Journal of Mass Spectrometry, 2017, 23, 136-139. | 1.0 | 6 |
| 48 | A Unique System for Registering Oneâ€Photon Signals in the Ultraviolet Range from An Isomeric 229m Th Nucleus Implanted on Thin SiO 2 /Si Films. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900551. | 1.8 | 6 |
| 49 | Bremsstrahlung spectrum for Î± decay and quantum tunneling. Journal of Experimental and Theoretical Physics, 1999, 89, 208-218. | 0.9 | 5 |
| 50 | Thorium silicate compound as a solid-state target for production of isomeric thorium-229 nuclei by electron beam irradiation. AIP Advances, 2016, 6, 095304. | 1.3 | 5 |
| 51 | Internal conversion of the low-energy Th229m isomer in the thorium anion. Physical Review C, 2020, 101, . | 2.9 | 5 |
| 52 | On the possibility of controlling the decay rate of low-lying nuclear levels upon excitation in a laser plasma. Quantum Electronics, 2001, 31, 567-568. | 1.0 | 3 |
| 53 | Title is missing!. Hyperfine Interactions, 2002, 143, 23-36. | 0.5 | 3 |
| 54 | Surface physicochemical properties and decay of the low-lying isomer in the 229Th nucleus. Quantum Electronics, 2018, 48, 460-463. | 1.0 | 3 |

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| 55 | New Perspectives for Neutron Capture Radiation Therapy with <sup>7</sup>Be. The Chemistry and Biochemistry Gap. Journal of Nanoscience and Nanotechnology, 2021, 21, 2939-2942. | 0.9 | 3 |
| 56 | Spontaneous multipole radiation in a condensed medium. Journal of Experimental and Theoretical Physics, 2001, 92, 61-68. | 0.9 | 2 |
| 57 | Low-energy E0 transition between the components of the ground-state doublet in the muonic atom Th229. Physical Review A, 2017, 95, . | 2.5 | 2 |
| 58 | Method of the production and trapping of thorium ions for nuclear transition investigation. Journal of Physics: Conference Series, 2017, 941, 012107. | 0.4 | 2 |
| 59 | Chemical bonding between thorium atoms and a carbon hexagon in carbon nanomaterials. Physical Chemistry Chemical Physics, 2020, 22, 22501-22507. | 2.8 | 2 |
| 60 | Neutral and charged thorium impurity in solid argon. Physical Review A, 2021, 104, . | 2.5 | 2 |
| 61 | Spectroscopic studies of solid Ar condensed on a gold surface. Materials Letters, 2022, 306, 130930. | 2.6 | 2 |
| 62 | Cross section of the Coulomb excitation of by low energy muons *. Chinese Physics C, 2021, 45, 094102. | 3.7 | 2 |
| 63 | Features of coherent excitation of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:msup><mml:mrow /><mml:mrow><mml:mn>229</mml:mn><mml:mi>m</mml:mi></mml:mrow></mml:msup></mml:math>Th. Nuclear Physics A, 2022, 1022, 122428. | 1.5 | 2 |
| 64 | The Method of Reconstruction of Air Activities Following a Nuclear Accident. Radiation Protection Dosimetry, 1995, 62, 139-149. | 0.8 | 1 |
| 65 | A Confidence Region of Source Term Parameters from a Statistical Analysis of Environmental Measurements Following an Accidental Release to the Atmosphere. Radiation Protection Dosimetry, 1996, 67, 85-94. | 0.8 | 1 |
| 66 | Detection of the gamma decay of an isomeric low-lying181Ta level excited in a high-temperature near-surface laser plasma. Quantum Electronics, 1999, 29, 191-192. | 1.0 | 1 |
| 67 | Nuclear spin relaxation in ionic dielectrics at low temperatures via conduction electrons in metallic covering. Physical Review C, 2012, 86, . | 2.9 | 1 |
| 68 | Doppler cooling of thorium ions in a multisectional linear Paul trap. Journal of Physics: Conference Series, 2017, 941, 012111. | 0.4 | 1 |
| 69 | Cumulative loading of the ion trap by laser ablation of thorium target in buffer gas. Laser Physics Letters, 2021, 18, 015501. | 1.4 | 1 |
| 70 | Fluctuations in the surface activity and dose rate in localities in the near zone of the chernobyl nuclear power plant. Atomic Energy, 1993, 74, 375-379. | 0.4 | 0 |
| 71 | Low energy nuclear processes in hot dense femtosecond plasma. , 2000, , . | | 0 |
| 72 | <title>Internal electronic conversion decay of low-energy nuclear levels excited in hot dense femtosecond laser plasma</title>. , 2002, , . | | 0 |

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| 73 | Nuclear excitation by electron transition near the K-shell ionization threshold of an atom. Bulletin of the Russian Academy of Sciences: Physics, 2007, 71, 818-821. | 0.6 | 0 |
| 74 | Induced decay of a long-lived nuclear isomer<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="normal">Hf</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>178</mml:mn></mml:mrow></mml:mmultiscripts></mml:math><mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msup><mml:mrow /><mml:mrow><mml:mi>m</mml:mi><mml:mn>2< | 2.9 | 0 |
| 75 | On the possibility of the realization of combustion and detonation waves in a system of nuclear isomers. JETP Letters, 2014, 98, 680-683. | 1.4 | 0 |
| 76 | Reply to â€œComment on â€ Theoretical study of the pressure effect on the electron-capture<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î²</mml:mi></mml:math>decay of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msup><mml:mrow /><mml:mn>7</mml:mn></mml:msup><mml:mi mathvariant="bold">Be</mml:mi></mml:mrow></mml:math>in<mml:math xmlns:mml="http://www.w3.o | 2.9 | 0 |
| 77 | Autoelectronic emission and charge relaxation of thorium ions implanted into a thin-film silicon oxide matrix. Laser Physics Letters, 2021, 18, 025301. | 1.4 | 0 |
| 78 | Estimation of the charge state of Th implanted in SiO2 in the different atomic environment. Journal of Physics: Conference Series, 2020, 1686, 012064. | 0.4 | 0 |
| 79 | Charge Properties of Thorium Implanted in Silicon Oxide. Physics of Atomic Nuclei, 2020, 83, 1569-1574. | 0.4 | 0 |