JosÃ© M FernÃ¡ndez-Varea

List of Publications by Year
in descending order

98 papers	3,653 citations	218677 26 h-index	133252 59 g-index
99 all docs	99 docs citations	99 times ranked	2399 citing authors

#	Article	IF	Citations
1	PENELOPE: An algorithm for Monte Carlo simulation of the penetration and energy loss of electrons and positrons in matter. Nuclear Instruments & Methods in Physics Research B, 1995, 100, 31-46.	1.4	721
2	An algorithm for Monte Carlo simulation of coupled electron-photon transport. Nuclear Instruments & Methods in Physics Research B, 1997, 132, 377-390.	1.4	320
3	Experimental benchmarks of the Monte Carlo code penelope. Nuclear Instruments & Methods in Physics Research B, 2003, 207, 107-123.	1.4	274
4	Accurate numerical solution of the radial SchrÃ¶dinger and Dirac wave equations. Computer Physics Communications, 1995, 90, 151-168.	7.5	207
5	Monte Carlo simulation of electron beams from an accelerator head using PENELOPE. Physics in Medicine and Biology, 2001, 46, 1163-1186.	3.0	189
6	Overview of physical interaction models for photon and electron transport used in Monte Carlo codes. Metrologia, 2009, 46, S112-S138.	1.2	160
7	On the theory and simulation of multiple elastic scattering of electrons. Nuclear Instruments & Methods in Physics Research B, 1993, 73, 447-473.	1.4	111
8	Inelastic scattering of electrons in solids from a generalized oscillator strength model using optical and photoelectric data. Journal of Physics Condensed Matter, 1993, 5, 3593-3610.	1.8	91
9	Calculated energy loss of swift He, Li, B, and N ions inSiO2,Al2O3, andZrO2. Physical Review A, 2005, 72, .	2.5	91
10	Fast sampling algorithm for the simulation of photon Compton scattering. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1996, 379, 167-175.	1.6	82
11	A relativistic optical-data model for inelastic scattering of electrons and positrons in condensed matter. Nuclear Instruments & Methods in Physics Research B, 2005, 229, 187-218.	1.4	81
12	Monte Carlo simulation of 0.1â€“100 keV electron and positron transport in solids using optical data and partial wave methods. Nuclear Instruments & Methods in Physics Research B, 1996, 108, 35-50.	1.4	80
13	Monte Carlo Evaluation of Auger Electronâ€“Emitting Theranostic Radionuclides. Journal of Nuclear Medicine, 2015, 56, 1441-1446.	5.0	61
14	Monte Carlo simulation of bremsstrahlung emission by electrons. Radiation Physics and Chemistry, 2006, 75, 1201-1219.	2.8	58
15	Limitations (and merits) of PENELOPE as a track-structure code. International Journal of Radiation Biology, 2012, 88, 66-70.	1.8	52
16	Hamaker Constants of Systems Involving Water Obtained from a Dielectric Function That Fulfills the f Sum Rule. Journal of Colloid and Interface Science, 2000, 231, 394-397.	9.4	49
17	Monte Carlo dosimetry for forthcoming clinical trials in x-ray microbeam radiation therapy. Physics in Medicine and Biology, 2010, 55, 4375-4388.	3.0	46
18	Semiempirical cross sections for the simulation of the energy loss of electrons and positrons in matter. Nuclear Instruments & Methods in Physics Research B, 1992, 63, 255-269.	1.4	44

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19	Monte Carlo simulation of X-ray emission using the general-purpose codePENELOPE. Surface and Interface Analysis, 2005, 37, 1054-1058.	1.8	39
20	AbsoluteK-shell ionization cross sections andLÎ±andLÎ²1x-ray production cross sections of Ga and As by1.5â€“39â^'keVelectrons. Physical Review A, 2006, 73, .	2.5	37
21	radial: A Fortran subroutine package for the solution of the radial SchrÃ¶dinger and Dirac wave equations. Computer Physics Communications, 2019, 240, 165-177.	7.5	36
22	Dosimetry characterization of a 32P source wire used for intravascular brachytherapy with automated stepping. Medical Physics, 2003, 30, 959-971.	3.0	35
23	Simplified Monte Carlo simulation of elastic electron scattering in limited media. Nuclear Instruments & Methods in Physics Research B, 1994, 84, 465-483.	1.4	34
24	Detour factors in water and plastic phantoms and their use for range and depth scaling in electron-beam dosimetry. Physics in Medicine and Biology, 1996, 41, 1119-1139.	3.0	34
25	A Monte Carlo program for the analysis of low-energy electron tracks in liquid water. Physics in Medicine and Biology, 2011, 56, 1985-2003.	3.0	28
26	Monte Carlo simulation of the inelastic scattering of electrons and positrons using optical-data models. Radiation Physics and Chemistry, 1998, 53, 235-245.	2.8	27
27	Monte Carlo Simulation in Electron Probe Microanalysis. Comparison of Different Simulation Algorithms. Mikrochimica Acta, 2006, 155, 67-74.	5.0	27
28	Monte Carlo based water/medium stopping-power ratios for various ICRP and ICRU tissues. Physics in Medicine and Biology, 2007, 52, 6475-6483.	3.0	26
29	Track structure of protons and other light ions in liquid water: Applications of the LIonTrack code at the nanometer scale. Medical Physics, 2013, 40, 064101.	3.0	26
30	Cross sections for electron interactions in condensed matter. Surface and Interface Analysis, 2005, 37, 824-832.	1.8	25
31	Practical aspects of Monte Carlo simulation of charged particle transport: Mixed algorithms and variance reduction techniques. Radiation and Environmental Biophysics, 1999, 38, 15-22.	1.4	24
32	PET imaging of DNA damage using 89Zr-labelled anti-Î³H2AX-TAT immunoconjugates. European Journal of Nuclear Medicine and Molecular Imaging, 2015, 42, 1707-1717.	6.4	24
33	Absorbed dose evaluation of Auger electron-emitting radionuclides: impact of input decay spectra on dose point kernels and S-values. Physics in Medicine and Biology, 2017, 62, 2239-2253.	3.0	24
34	Characterization of a high-dose-rate90Srâ€“90Y source for intravascular brachytherapy by using the Monte Carlo code PENELOPE. Physics in Medicine and Biology, 2002, 47, 697-711.	3.0	23
35	Mixed simulation of the multiple elastic scattering of electrons and positrons using partial-wave differential cross-sections. Nuclear Instruments & Methods in Physics Research B, 2001, 174, 91-110.	1.4	21
36	Comparison of Monte Carlo calculated electron slowing-down spectra generated by60Co Î³-rays, electrons, protons and light ions. Physics in Medicine and Biology, 2002, 47, 1303-1319.	3.0	21

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37	Relative Cross Sections for L- and M-Shell Ionization by Electron Impact. Mikrochimica Acta, 2000, 132, 163-171.	5.0	19
38	A comparison of inelastic electron scattering models based on delta -function representations of the Bethe surface. Journal of Physics Condensed Matter, 1992, 4, 2879-2890.	1.8	18
39	Calculations of electron fluence correction factors using the Monte Carlo code PENELOPE. Physics in Medicine and Biology, 2003, 48, 1263-1275.	3.0	18
40	The structure of the Bethe ridge. Relativistic Born and impulse approximations. Journal of Physics B: Atomic, Molecular and Optical Physics, 2002, 35, 33-53.	1.5	17
41	Ionization cross sections of the L subshells of Au by 50 to 100 keV electron impact. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 175201.	1.5	17
42	Cross sections for elastic scattering of fast electrons and positrons by atoms. Nuclear Instruments & Methods in Physics Research B, 1993, 82, 39-45.	1.4	15
43	Influence of electrodes on the photon energy deposition in CVD-diamond dosimeters studied with the Monte Carlo code PENELOPE. Physics in Medicine and Biology, 2006, 51, 3607-3623.	3.0	15
44	Evaluation and Simulation of a New Ionization Chamber Design for use in Computed Tomography Beams. IEEE Transactions on Nuclear Science, 2013, 60, 768-773.	2.0	15
45	Efficiency calibration of x-ray HPGe detectors for photons with energies above the Ge K binding energy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 729, 371-380.	1.6	14
46	Analytical formula for the stopping power of low-energy ions in a free-electron gas. Radiation Physics and Chemistry, 2014, 96, 88-91.	2.8	14
47	Determination of LaBr 3 (Ce) internal background using a HPGe detector and Monte Carlo simulations. Applied Radiation and Isotopes, 2016, 109, 512-517.	1.5	14
48	Optimization of a tissue-equivalent CVD-diamond dosimeter for radiotherapy using the Monte Carlo code PENELOPE. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2008, 593, 578-587.	1.6	13
49	Cross sections of K-shell ionization by electron impact, measured from threshold to 100 keV, for Au and Bi. Journal of Physics B: Atomic, Molecular and Optical Physics, 2014, 47, 155201.	1.5	13
50	LÎ±,LÎ², andLÎ³x-ray production cross sections of Hf, Ta, W, Re, Os, Au, Pb, and Bi by electron impact: Comparison of distorted-wave calculations with experiment. Physical Review A, 2011, 83, .	2.5	12
51	Radial Energy Distributions in LiF by Alpha Particle Irradiation Using Monte Carlo Simulation. Radiation Protection Dosimetry, 1996, 65, 37-40.	0.8	10
52	Stopping cross sections of TiO2 for H and He ions. European Physical Journal D, 2014, 68, 1.	1.3	10
53	Full-energy peak efficiency of SiÂdrift and Si(Li) detectors for photons with energies above the SiÂK binding energy. X-Ray Spectrometry, 2017, 46, 34-43.	1.4	10
54	Electronâ€“atom bremsstrahlung cross sections in the 20â€“100 keV energy region: absolute measurements for $6leqslant Zleqslant 79$ and comparison with theoretical databases. Journal of Physics B: Atomic, Molecular and Optical Physics, 2018, 51, 225003.	1.5	10

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55	Distorted-wave ionization and x-ray production cross sections of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>K</mml:mi></mml:math>shell of Cu and the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>L</mml:mi></mml:math>shells of Ag, In, and Sn by positron impact. Physical Review A, 2008, 77, .	2.5	10
56	Monte Carlo simulation of correction factors for IAEA TLD holders. Physics in Medicine and Biology, 2010, 55, N161-N166.	2.5	9
57	A new parallel-plate graphite ionization chamber as a 60Co gamma radiation reference instrument. Radiation Physics and Chemistry, 2014, 95, 106-108.	3.0	9
58	A microfocus x-ray source based on a nonmetal liquid-jet anode. Applied Physics Letters, 2008, 92, 233509.	2.8	9
59	Application of a Pencil Ionization Chamber (0.34 cm^{3} Volume) for ^{60}Co Beams: Experimental and Monte Carlo Results. IEEE Transactions on Nuclear Science, 2013, 60, 746-750.	3.3	8
60	Dynamic screening of an ion in a degenerate electron gas within the second-order Born approximation. Nuclear Instruments & Methods in Physics Research B, 2015, 354, 167-171.	2.0	8
61	Ag K-shell ionization by electron impact: New cross-section measurements between 50 and 100keV and review of previous experimental data. Radiation Physics and Chemistry, 2016, 119, 14-23.	1.4	8
62	Calculation of the energy loss of swift H and He ions in Ag using the dielectric formalism: The role of inner-shell ionization. Nuclear Instruments & Methods in Physics Research B, 2007, 256, 172-176.	2.8	8
63	Ionization cross sections of the Au L subshells by electron impact from the L₃threshold to 100 keV. Journal of Physics B: Atomic, Molecular and Optical Physics, 2018, 51, 025201.	1.4	7
64	On the relativistic impulse approximation for the calculation of Compton scattering cross sections and photon interaction coefficients used in kV dosimetry. Physics in Medicine and Biology, 2020, 65, 125010.	1.5	7
65	A comprehensive Monte Carlo study of CT dose metrics proposed by the AAPM Reports 111 and 200. Medical Physics, 2022, 49, 201-218.	2.5	7
66	Monte Carlo simulation and analysis of proton energy-deposition patterns in the Bragg peak. Physics in Medicine and Biology, 2008, 53, 2857-2875.	3.0	7
67	Monte Carlo Simulation of Pileup Effects in the Electron-Positron Annihilation Peak. , 2011, , .	3.0	6
68	First Experiments with the IFUSP Microtron Injector. AIP Conference Proceedings, 2011, , .	0.4	5
69	L-shell X-ray production cross-sections for Mo by proton impact. Journal of Analytical Atomic Spectrometry, 2019, 34, 214-221.	3.0	5
70	Monte Carlo Simulation of Electron Transport and X-Ray Generation. I. Electron Elastic and Inelastic Scattering. Mikrochimica Acta, 2004, 145, 193-202.	5.0	4
71	Experimental and theoretical cross sections for <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>K</mml:mi></mml:math> -shell ionization of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mrow /><mml:mn>52</mml:mn></mml:msub><mml:mi>Te</mml:mi></mml:mrow></mml:math> , <mml:math	2.5	7
72	On the relativistic impulse approximation for the calculation of Compton scattering cross sections and photon interaction coefficients used in kV dosimetry. Physics in Medicine and Biology, 2020, 65, 125010.	3.0	7

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73	Analytical response function for planar Ge detectors. Radiation Physics and Chemistry, 2016, 121, 23-34.	2.8	4
74	Triple- and quadruple-escape peaks in HPGe detectors: Experimental observation and Monte Carlo simulation. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 615, 285-294.	1.6	3
75	Second-order Born approximation for the scattering phase shifts: Application to the Friedel sum rule. Nuclear Instruments & Methods in Physics Research B, 2013, 311, 121-130.	1.4	3
76	Electronic stopping power of diamond for electrons and positrons. Physics in Medicine and Biology, 2021, 66, 165003.	3.0	3
77	Experimental and theoretical <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>L</mml:mi></mml:math> -subshell ionization cross sectionsÂfor <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mrow /><mml:mn>83</mml:mn></mml:msub><mml:mi>Bi</mml:mi></mml:mrow></mml:math> by electron impact from the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>	2.5	3
78	A simplified method for the detailed Monte Carlo simulation of electron transport. Journal Physics D: Applied Physics, 1991, 24, 814-826.	2.8	2
79	Radial dose function of a 90Sr-90Y seed in water and A150: Comment on â€œCalibration and characterization of beta-particle sources for intravascular brachytherapyâ€•[Med. Phys.25, 339-346 (1998)]. Medical Physics, 2002, 29, 2737-2738.	3.0	2
80	Monte Carlo Simulation of Electron Transport and X-Ray Generation. II. Radiative Processes and Examples in Electron Probe Microanalysis. Mikrochimica Acta, 2004, 145, 111-120.	5.0	2
81	RBED cross sections for the ionization of atomic inner shells by electron-impact. Journal of Physics B: Atomic, Molecular and Optical Physics, 2018, 51, 145201.	1.5	2
82	Impact of the I-value of diamond on the energy deposition in different beam qualities. Physics in Medicine and Biology, 2021, 66, .	3.0	2
83	Impact of photoelectric cross section data on systematic uncertainties for Monte Carlo breast dosimetry in mammography. Physics in Medicine and Biology, 2021, 66, 115015.	3.0	2
84	Measurement of doubly differential electron bremsstrahlung cross sections at the end point (tip) for C, Al, Te, Ta and Au. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 155003.	1.5	2
85	Observation of double electron-positron pair production by<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Î³</mml:mi></mml:mrow></mml:math>rays reexamined. Physical Review C, 2009, 79, .	2.9	1
86	Intrinsic efficiency of semiconductor spectrometers for divergent photon beams. Nuclear Instruments & Methods in Physics Research B, 2020, 477, 39-42.	1.4	1
87	Simulation of X-ray Spectra Generated by Kilovolt-Electron Bombardment. , 2001, , 105-110.		1
88	Evaluation of beta-particle emitter spectra in liquid scintillation counting systems. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1992, 312, 136-140.	1.6	0
89	333 Monte Carlo based sw,med values for different ICRU tissues. Radiotherapy and Oncology, 2005, 76, S151-S152.	0.6	0
90	472 Monte Carlo study of the fluence perturbation in CVD diamond detectors due to electric contacts. Radiotherapy and Oncology, 2005, 76, S204.	0.6	0

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91	LÎ±, LÎ², andLÎ³ x-ray production cross sections for heavy elements by electron impact. Journal of Physics: Conference Series, 2009, 194, 042001.	0.4	0
92	Dosimetric application of a special pencil ionization chamber in radiotherapy X-ray beams. Radiation Physics and Chemistry, 2014, 95, 98-100.	2.8	0
93	Preliminary measurements of the Bremsstrahlung doubly differential cross section for electrons between 20 and 100 keV in Au. Journal of Physics: Conference Series, 2015, 635, 052084.	0.4	0
94	Abstract ID: 165 Assessment of RBED electron-impact ionization cross sections for Monte Carlo electron transport. Physica Medica, 2017, 42, 35.	0.7	0
95	Calculation of secondary electron bremsstrahlung in the binary encounter approximation using Diracâ€“Hartreeâ€“Fockâ€“Slater velocity distributions. Nuclear Instruments & Methods in Physics Research B, 2020, 478, 70-79.	1.4	0
96	Status of PENELOPE. , 2001, , 147-152.		0
97	Modelling the Generalized Oscillator Strength for Low-Energy Electron or Positron Inelastic Scattering. , 2001, , 33-38.		0
98	Analog Electron Physics. Interaction Cross-Sections. , 2001, , 27-32.		0