

Dennis R Schaart

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

118 papers	5,060 citations	33 h-index	69 g-index
130 ext. papers	5,996 ext. citations	2.8 avg, IF	5.48 L-index

#	Paper	IF	Citations
118	Physics and technology of time-of-flight PET detectors. <i>Physics in Medicine and Biology</i> , 2021 , 66,	3.8	14
117	Silicon photomultiplier-based scintillation detectors for photon-counting CT: A feasibility study. <i>Medical Physics</i> , 2021 , 48, 6324-6338	4.4	1
116	Time of Flight in Perspective: Instrumental and Computational Aspects of Time Resolution in Positron Emission Tomography. <i>IEEE Transactions on Radiation and Plasma Medical Sciences</i> , 2021 , 5, 598-618	4.2	4
115	Efficient Single-Photon Detection with 7.7 ps Time Resolution for Photon-Correlation Measurements. <i>ACS Photonics</i> , 2020 , 7, 1780-1787	6.3	30
114	Achieving 10 ps coincidence time resolution in TOF-PET is an impossible dream. <i>Medical Physics</i> , 2020 , 47, 2721-2724	4.4	12
113	Introduction to Silicon Photomultipliers for Time-of-Flight PET 2020 , 27-40		3
112	A High Count-Rate and Depth-of-Interaction Resolving Single-Layered One-Side Readout Pixelated Scintillator Crystal Array for PET Applications. <i>IEEE Transactions on Radiation and Plasma Medical Sciences</i> , 2020 , 4, 361-370	4.2	6
111	An Approach for Optimizing Prompt Gamma Photon-Based Range Estimation in Proton Therapy Using Cram�r Rao Theory. <i>IEEE Transactions on Radiation and Plasma Medical Sciences</i> , 2020 , 4, 161-169	4.2	2
110	Correlations between the shifts in prompt gamma emission profiles and the changes in daily target coverage during simulated pencil beam scanning proton therapy. <i>Physics in Medicine and Biology</i> , 2019 , 64, 085009	3.8	5
109	Toward a Full-Flexible and Fast-Prototyping TOF-PET Block Detector Based on TDC-on-FPGA. <i>IEEE Transactions on Radiation and Plasma Medical Sciences</i> , 2019 , 3, 538-548	4.2	13
108	Fast automated multi-criteria planning for HDR brachytherapy explored for prostate cancer. <i>Physics in Medicine and Biology</i> , 2019 , 64, 205002	3.8	11
107	Reconstructing 3D proton dose distribution using ionoacoustics. <i>Physics in Medicine and Biology</i> , 2019 , 64, 225005	3.8	3
106	Sub-3 mm, near-200 ps TOF/DOI-PET imaging with monolithic scintillator detectors in a 70 cm diameter tomographic setup. <i>Physics in Medicine and Biology</i> , 2018 , 63, 155006	3.8	29
105	Optimization of the Signal-to-Background Ratio in Prompt Gamma Imaging Using Energy and Shifting Time-of-Flight Discrimination: Experiments With a Scanning Parallel-Slit Collimator. <i>IEEE Transactions on Radiation and Plasma Medical Sciences</i> , 2018 , 2, 510-519	4.2	9
104	Simulation of proton range monitoring in an anthropomorphic phantom using multi-slat collimators and time-of-flight detection of prompt-gamma quanta. <i>Physica Medica</i> , 2018 , 54, 1-14	2.7	6
103	Improved image quality using monolithic scintillator detectors with dual-sided readout in a whole-body TOF-PET ring: a simulation study. <i>Physics in Medicine and Biology</i> , 2017 , 62, 2018-2032	3.8	7
102	BGO as a hybrid scintillator / Cherenkov radiator for cost-effective time-of-flight PET. <i>Physics in Medicine and Biology</i> , 2017 , 62, 4421-4439	3.8	75

101	Development of a Compton camera for prompt-gamma medical imaging. <i>Radiation Physics and Chemistry</i> , 2017 , 140, 190-197	2.5	29
100	Optimization of an ultralow-dose high-resolution pediatric PET scanner design based on monolithic scintillators with dual-sided digital SiPM readout: a simulation study. <i>Physics in Medicine and Biology</i> , 2017 , 62, 8402-8418	3.8	12
99	Sub-3mm spatial resolution from a large monolithic LaBr3 (Ce) scintillator. <i>Current Directions in Biomedical Engineering</i> , 2017 , 3, 655-659	0.5	5
98	A comprehensive characterization of the time resolution of the Philips Digital Photon Counter. <i>Journal of Instrumentation</i> , 2016 , 11, P11004-P11004	1	15
97	An order-statistics-inspired, fully-digital readout approach for analog SiPM arrays 2016 ,		5
96	Towards monolithic scintillator based TOF-PET systems: practical methods for detector calibration and operation. <i>Physics in Medicine and Biology</i> , 2016 , 61, 4904-28	3.8	42
95	A 32 mm \times 32 mm \times 22 mm monolithic LYSO:Ce detector with dual-sided digital photon counter readout for ultrahigh-performance TOF-PET and TOF-PET/MRI. <i>Physics in Medicine and Biology</i> , 2016 , 61, 4929-49	3.8	44
94	Advances in digital SiPMs and their application in biomedical imaging. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016 , 809, 31-52	1.2	66
93	A Compton camera prototype for prompt gamma medical imaging. <i>EPJ Web of Conferences</i> , 2016 , 117, 05005	0.3	16
92	First in situ TOF-PET study using digital photon counters for proton range verification. <i>Physics in Medicine and Biology</i> , 2016 , 61, 6203-30	3.8	27
91	Potential applications of electron emission membranes in medicine. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016 , 809, 171-174	1.2	8
90	The price of robustness; impact of worst-case optimization on organ-at-risk dose and complication probability in intensity-modulated proton therapy for oropharyngeal cancer patients. <i>Radiotherapy and Oncology</i> , 2016 , 120, 56-62	5.3	32
89	Experimental Validation of an Efficient Fan-Beam Calibration Procedure for $\$k\$$ -Nearest Neighbor Position Estimation in Monolithic Scintillator Detectors. <i>IEEE Transactions on Nuclear Science</i> , 2015 , 62, 57-67	1.7	25
88	Comparative Study of Co-Doped and Non Co-Doped LSO:Ce and LYSO:Ce Scintillators for TOF-PET. <i>IEEE Transactions on Nuclear Science</i> , 2015 , 62, 727-731	1.7	13
87	Time estimation with multichannel digital silicon photomultipliers. <i>Physics in Medicine and Biology</i> , 2015 , 60, 2435-52	3.8	20
86	11.4 A 67,392-SPAD PVTB-compensated multi-channel digital SiPM with 432 column-parallel 48ps 17b TDCs for endoscopic time-of-flight PET 2015 ,		21
85	Time-based position estimation in monolithic scintillator detectors. <i>Physics in Medicine and Biology</i> , 2015 , 60, 5513-25	3.8	10
84	Geometric optimization of an ultralow-dose high-resolution pediatric PET scanner based on monolithic scintillators with dSiPM readout. <i>EJNMMI Physics</i> , 2015 , 2, A23	4.4	

83	Comparative Characterization Study of a LaBr ₃ (Ce) Scintillation Crystal in Two Surface Wrapping Scenarios: Absorptive and Reflective. <i>Frontiers in Oncology</i> , 2015 , 5, 270	5.3	7
82	. <i>IEEE Transactions on Nuclear Science</i> , 2015 , 62, 3-11	1.7	34
81	Picosecond Time Resolved Studies of Photon Transport Inside Scintillators. <i>IEEE Transactions on Nuclear Science</i> , 2015 , 62, 1961-1971	1.7	9
80	Time-resolved imaging of prompt-gamma rays for proton range verification using a knife-edge slit camera based on digital photon counters. <i>Physics in Medicine and Biology</i> , 2015 , 60, 6063-85	3.8	22
79	. <i>IEEE Transactions on Nuclear Science</i> , 2015 , 62, 1972-1980	1.7	7
78	The Effect of Self-Absorption on the Scintillation Properties of Ce^{3+} Activated LaBr_3 and CeBr_3 . <i>IEEE Transactions on Nuclear Science</i> , 2014 , 61, 683-688	1.7	13
77	First performance tests of a digital photon counter (DPC) array coupled to a CsI(Tl) crystal matrix for potential use in SPECT. <i>Physics in Medicine and Biology</i> , 2014 , 59, 2415-30	3.8	14
76	A review of the use and potential of the GATE Monte Carlo simulation code for radiation therapy and dosimetry applications. <i>Medical Physics</i> , 2014 , 41, 064301	4.4	219
75	Intrinsic scintillation pulse shape measurements by means of picosecond x-ray excitation for fast timing applications. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2014 , 767, 206-211	1.2	20
74	Scintillation properties of Ca co-doped L(Y)SO:Ce between 193 K and 373 K for TOF-PET/MRI. <i>EJNMMI Physics</i> , 2014 , 1, A10	4.4	0
73	Development of a Compton Camera for Online Range Monitoring of Laser-Accelerated Proton Beams via Prompt-Gamma Detection. <i>EPJ Web of Conferences</i> , 2014 , 66, 11036	0.3	10
72	Probabilities of triggering and validation in a digital silicon photomultiplier. <i>Journal of Instrumentation</i> , 2014 , 9, P06016-P06016	1	33
71	Factors influencing the accuracy of beam range estimation in proton therapy using prompt gamma emission. <i>Physics in Medicine and Biology</i> , 2014 , 59, 4427-41	3.8	30
70	First characterization of a digital SiPM based time-of-flight PET detector with 1 mm spatial resolution. <i>Physics in Medicine and Biology</i> , 2013 , 58, 3061-74	3.8	78
69	Adaptive liver stereotactic body radiation therapy: automated daily plan reoptimization prevents dose delivery degradation caused by anatomy deformations. <i>International Journal of Radiation Oncology Biology Physics</i> , 2013 , 87, 1016-21	4	17
68	Sub-200 ps CRT in monolithic scintillator PET detectors using digital SiPM arrays and maximum likelihood interaction time estimation. <i>Physics in Medicine and Biology</i> , 2013 , 58, 3243-57	3.8	95
67	The Topsy single soft photon detector and the Trixy ultrafast tracking detector. <i>Journal of Instrumentation</i> , 2013 , 8, C01036-C01036	1	2
66	Experimental and computational simulation of beta-dose heterogeneity in sediment. <i>Radiation Measurements</i> , 2012 , 47, 1060-1067	1.5	32

65	Accurate measurement of the rise and decay times of fast scintillators with solid state photon counters. <i>Journal of Instrumentation</i> , 2012 , 7, P09004-P09004	1	43
64	The lower bound on the timing resolution of scintillation detectors. <i>Physics in Medicine and Biology</i> , 2012 , 57, 1797-814	3.8	119
63	Improved EMCCD gamma camera performance by SiPM pre-localization. <i>Physics in Medicine and Biology</i> , 2012 , 57, 7709-24	3.8	3
62	Limits on the spatial resolution of monolithic scintillators read out by APD arrays. <i>Physics in Medicine and Biology</i> , 2012 , 57, 6479-96	3.8	8
61	Optical Absorption Length, Scattering Length, and Refractive Index of LaBr_3Ce . <i>IEEE Transactions on Nuclear Science</i> , 2012 , 59, 656-664	1.7	20
60	A Comprehensive Model to Predict the Timing Resolution of SiPM-Based Scintillation Detectors: Theory and Experimental Validation. <i>IEEE Transactions on Nuclear Science</i> , 2012 , 59, 190-204	1.7	88
59	Monte Carlo calculations of positron emitter yields in proton radiotherapy. <i>Physics in Medicine and Biology</i> , 2012 , 57, 1659-73	3.8	51
58	The statistical distribution of the number of counted scintillation photons in digital silicon photomultipliers: model and validation. <i>Physics in Medicine and Biology</i> , 2012 , 57, 4885-903	3.8	24
57	Time-of-flight neutron rejection to improve prompt gamma imaging for proton range verification: a simulation study. <i>Physics in Medicine and Biology</i> , 2012 , 57, 6429-44	3.8	61
56	Monolithic LaBr_3Ce crystals on silicon photomultiplier arrays for time-of-flight positron emission tomography. <i>Physics in Medicine and Biology</i> , 2012 , 57, 2219-33	3.8	44
55	The Topsy single soft photon detector and the Trixy ultrafast tracking detector 2012 ,		2
54	Optimization of collimator designs for real-time proton range verification by measuring prompt gamma rays 2012 ,		8
53	Polymersomes as nano-carriers to retain harmful recoil nuclides in alpha radionuclide therapy: a feasibility study. <i>Radiochimica Acta</i> , 2012 , 100, 473-482	1.9	20
52	GATE V6: a major enhancement of the GATE simulation platform enabling modelling of CT and radiotherapy. <i>Physics in Medicine and Biology</i> , 2011 , 56, 881-901	3.8	488
51	Comparison of GATE/GEANT4 with EGSnrc and MCNP for electron dose calculations at energies between 15 keV and 20 MeV. <i>Physics in Medicine and Biology</i> , 2011 , 56, 811-27	3.8	52
50	Variable circular collimator in robotic radiosurgery: a time-efficient alternative to a mini-multileaf collimator?. <i>International Journal of Radiation Oncology Biology Physics</i> , 2011 , 81, 863-70	4	25
49	Improved Nearest Neighbor Methods for Gamma Photon Interaction Position Determination in Monolithic Scintillator PET Detectors. <i>IEEE Transactions on Nuclear Science</i> , 2011 , 58, 2139-2147	1.7	65
48	First measurement of scintillation photon arrival statistics using a high-granularity solid-state photosensor enabling time-stamping of up to 20,480 single photons 2011 ,		2

47	Range and density variations monitoring during proton therapy based on time-of-flight detection of prompt gamma radiation 2011 ,		1
46	Extracting storm-surge data from coastal dunes for improved assessment of flood risk. <i>Geology</i> , 2011 , 39, 1063-1066	5	43
45	A practical method for depth of interaction determination in monolithic scintillator PET detectors. <i>Physics in Medicine and Biology</i> , 2011 , 56, 4135-45	3.8	69
44	An improved nearest neighbor method for the estimation of the gamma photon entry point in monolithic scintillator detectors for PET 2010 ,		1
43	Thick monolithic scintillation crystals for TOF-PET with depth-of-interaction measurement 2010 ,		3
42	Optical simulation of monolithic scintillator detectors using GATE/GEANT4. <i>Physics in Medicine and Biology</i> , 2010 , 55, 1659-75	3.8	75
41	An enhanced high-resolution EMCCD-based gamma camera using SiPM side detection. <i>Physics in Medicine and Biology</i> , 2010 , 55, 6773-84	3.8	9
40	LaBr(3):Ce and SiPMs for time-of-flight PET: achieving 100 ps coincidence resolving time. <i>Physics in Medicine and Biology</i> , 2010 , 55, N179-89	3.8	179
39	Accurate measurements of the rise and decay times of fast scintillators with solid state photon counters 2010 ,		6
38	A Comprehensive Model of the Response of Silicon Photomultipliers. <i>IEEE Transactions on Nuclear Science</i> , 2010 , 57, 2254-2266	1.7	83
37	Model of the point spread function of monolithic scintillator PET detectors for perpendicular incidence. <i>Medical Physics</i> , 2010 , 37, 1904-13	4.4	11
36	Ultra precise timing with SiPM-based TOF PET scintillation detectors 2009 ,		35
35	Optimization of digital time pickoff methods for LaBr3-SiPM TOF-PET detectors 2009 ,		13
34	Silicon Photomultiplier response model 2009 ,		2
33	Simulation of Silicon Photomultiplier Signals. <i>IEEE Transactions on Nuclear Science</i> , 2009 , 56, 3726-3733	1.7	77
32	A novel, SiPM-array-based, monolithic scintillator detector for PET. <i>Physics in Medicine and Biology</i> , 2009 , 54, 3501-12	3.8	233
31	Monolithic scintillator PET detectors with intrinsic depth-of-interaction correction. <i>Physics in Medicine and Biology</i> , 2009 , 54, 1893-908	3.8	107
30	Signal to Noise Ratio of APD-Based Monolithic Scintillator Detectors for High Resolution PET. <i>IEEE Transactions on Nuclear Science</i> , 2008 , 55, 842-852	1.7	16

29	Optimizing timing resolution for TOF PET detectors based on monolithic scintillation crystals using fast photosensor arrays 2008 ,		2
28	Monolithic scintillator blocks in PET and SPECT 2008 ,		1
27	Evaluation of Machine Learning Algorithms for Localization of Photons in Undivided Scintillator Blocks for PET Detectors. <i>IEEE Transactions on Nuclear Science</i> , 2008 , 55, 918-924	1.7	39
26	SiPM-array based PET detectors with depth-of-interaction correction 2008 ,		11
25	A high bandwidth preamplifier for SiPM-based TOF PET scintillation detectors 2008 ,		10
24	Investigation of an in situ position calibration method for continuous crystal-based PET detectors. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2007 , 571, 304-307	1.2	13
23	Towards a continuous crystal APD-based PET detector design. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2007 , 571, 182-186	1.2	49
22	Dose calculation formalisms and consensus dosimetry parameters for intravascular brachytherapy dosimetry: recommendations of the AAPM Therapy Physics Committee Task Group No. 149. <i>Medical Physics</i> , 2007 , 34, 4126-57	4.4	43
21	Impact of instrumentation parameters on the performance of neural network based positioning algorithms for monolithic scintillator blocks 2007 ,		6
20	Comparison of Nonlinear Position Estimators For Continuous Scintillator Detectors In PET 2006 ,		5
19	Using Cramer-Rao theory combined with Monte Carlo simulations for the optimization of monolithic scintillator PET detectors. <i>IEEE Transactions on Nuclear Science</i> , 2006 , 53, 1063-1070	1.7	30
18	Experimental characterization of monolithic-crystal small animal PET detectors read out by APD arrays. <i>IEEE Transactions on Nuclear Science</i> , 2006 , 53, 1071-1077	1.7	63
17	Initial Characterization of a Nonpixelated Scintillator Detector in a PET Prototype Demonstrator. <i>IEEE Transactions on Nuclear Science</i> , 2006 , 53, 2543-2548	1.7	11
16	Recommendations on detectors and quality control procedures for brachytherapy beta sources. <i>Radiotherapy and Oncology</i> , 2006 , 78, 223-9	5.3	4
15	Signal to Noise Ratio of Monolithic Scintillator Detectors for High Resolution PET 2006 ,		3
14	Spatial Resolution in Position-Sensitive Monolithic Scintillation Detectors 2006 ,		1
13	Accurate calibration of a laboratory beta particle dose rate for dating purposes. <i>Radiation Measurements</i> , 2006 , 41, 1020-1025	1.5	20
12	GATE: a simulation toolkit for PET and SPECT. <i>Physics in Medicine and Biology</i> , 2004 , 49, 4543-61	3.8	1239

11	A comparison of intravascular source designs based on the beta particle emitter $^{114m}\text{In}/^{114}\text{In}$. Line source versus stepping source. <i>Cardiovascular Radiation Medicine</i> , 2002 , 3, 31-43		7
10	The scaling method applied to beta particle line sources with a finite diameter. <i>Medical Physics</i> , 2002 , 29, 2682-6	4.4	8
9	A comparison of MCNP4C electron transport with ITS 3.0 and experiment at incident energies between 100 keV and 20 MeV: influence of voxel size, substeps and energy indexing algorithm. <i>Physics in Medicine and Biology</i> , 2002 , 47, 1459-84	3.8	64
8	The radial depth-dose distribution of a $^{188}\text{W}/^{188}\text{Re}$ beta line source measured with novel, ultra-thin TLDs in a PMMA phantom: comparison with Monte Carlo simulations. <i>Physics in Medicine and Biology</i> , 2002 , 47, 3605-27	3.8	11
7	On the applicability of the AAPM TG-60/TG-43 dose calculation formalism to intravascular line sources: proposal for an adapted formalism. <i>Medical Physics</i> , 2001 , 28, 638-53	4.4	20
6	Variation in interpretation of the AAPM TG-43 geometry factor leads to unclearness in brachytherapy dosimetry. <i>Medical Physics</i> , 2001 , 28, 1965-6	4.4	11
5	Modelling of a $^{188}\text{W}/^{188}\text{Re}$ beta line source for coronary brachytherapy by means of EGS4 Monte Carlo simulations. <i>Physics in Medicine and Biology</i> , 2000 , 45, 1319-34	3.8	4
4	Properties and mechanisms of scintillation in $\text{CsGd}_2\text{F}_7:\text{Ce}^{3+}$ and $\text{CsY}_2\text{F}_7:\text{Ce}^{3+}$ crystals. <i>Journal of Physics Condensed Matter</i> , 1995 , 7, 3063-3088	1.8	21
3	Scintillation mechanism in $\text{CsGd}_2\text{F}_7:\text{Ce}^{3+}$ and $\text{CsY}_2\text{F}_7:\text{Ce}^{3+}$ crystals. <i>Radiation Effects and Defects in Solids</i> , 1995 , 135, 329-331	0.9	2
2	Performance of APD-based monolithic-crystal detectors for small animal PET		9
1	Experimental characterization of novel small animal PET detector modules based on scintillation crystal blocks read out by APD arrays		5