

# Naoki Kawachi

## List of Publications by Year in descending order

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Version: 2024-02-01

100  
papers

1,931  
citations

236612

25  
h-index

288905

40  
g-index

103  
all docs

103  
docs citations

103  
times ranked

1474  
citing authors

#	ARTICLE	IF	CITATIONS
1	Simulation evaluation on a compact monitor for gamma-emitting tracers in plant stems. Japanese Journal of Applied Physics, 2022, 61, 027001.	0.8	0
2	“Live-Autoradiography” Technique Reveals Genetic Variation in the Rate of Fe Uptake by Barley Cultivars. Plants, 2022, 11, 817.	1.6	2
3	Visualization of Particle Ion Beams Using Imaging Plates. Radioisotopes, 2022, 71, 109-114.	0.1	3
4	Shoot base responds to root-applied glutathione and functions as a critical region to inhibit cadmium translocation from the roots to shoots in oilseed rape (Brassica napus). Plant Science, 2021, 305, 110822.	1.7	5
5	New evidence of arsenic translocation and accumulation in Pteris vittata from real-time imaging using positron-emitting <sup>74</sup> As tracer. Scientific Reports, 2021, 11, 12149.	1.6	15
6	Non-invasive <sup>11</sup> C-Imaging Revealed the Spatiotemporal Variability in the Translocation of Photosynthates Into Strawberry Fruits in Response to Increasing Daylight Integrals at Leaf Surface. Frontiers in Plant Science, 2021, 12, 688887.	1.7	15
7	Noninvasive imaging of hollow structures and gas movement revealed the gas partial pressure gradient-driven long-distance gas movement in the aerenchyma along the leaf blade to submerged organs in rice. New Phytologist, 2021, 232, 1974-1984.	3.5	10
8	Autoradiography system with phosphor powder (ZnS:Ag) for imaging radioisotope dynamics in a living plant. Japanese Journal of Applied Physics, 2021, 60, 116501.	0.8	1
9	A novel estimation method of water-equivalent thicknesses of secondary particle tracks using secondary electron bremsstrahlung emitted from therapeutic ion beams for attenuation correction. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 954, 161607.	0.7	4
10	Fruit PET: 3-D imaging of carbon distribution in fruit using OpenPET. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 954, 161843.	0.7	11
11	A Simulation Study on Estimation of Bragg-Peak Shifts via Machine Learning Using Proton-Beam Images Obtained by Measurement of Secondary Electron Bremsstrahlung. IEEE Transactions on Radiation and Plasma Medical Sciences, 2020, 4, 253-261.	2.7	4
12	Imaging of <sup>99m</sup> Tc-DMSA and <sup>18</sup> F-FDG in humans using a Si/CdTe Compton camera. Physics in Medicine and Biology, 2020, 65, 05LT01.	1.6	41
13	Effects of enhancing endogenous and exogenous glutathione in roots on cadmium movement in Arabidopsis thaliana. Plant Science, 2020, 290, 110304.	1.7	18
14	Non-invasive imaging of radiocesium dynamics in a living animal using a positron-emitting <sup>127</sup> Cs tracer. Scientific Reports, 2020, 10, 16155.	1.6	2
15	AtFLL2, a member of the FLO2 gene family, affects the enlargement of leaves at the vegetative stage and facilitates the regulation of carbon metabolism and flow. Bioscience, Biotechnology and Biochemistry, 2020, 84, 2466-2475.	0.6	1
16	Crosstalk Reduction Using a Dual Energy Window Scatter Correction in Compton Imaging. Sensors, 2020, 20, 2453.	2.1	8
17	Visualising spatio-temporal distributions of assimilated carbon translocation and release in root systems of leguminous plants. Scientific Reports, 2020, 10, 8446.	1.6	14
18	Sensitivity improvement of YAP(Ce) cameras for imaging of secondary electron bremsstrahlung x-rays emitted during carbon-ion irradiation: problem and solution. Physics in Medicine and Biology, 2020, 65, 105008.	1.6	16

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19	Dose image prediction for range and width verifications from carbon ion-induced secondary electron bremsstrahlung x-rays using deep learning workflow. <i>Medical Physics</i> , 2020, 47, 3520-3532.	1.6	15
20	Estimation of shifts of therapeutic carbon-ion beams owing to cavities in a polyethylene target by measuring prompt X-ray images. <i>Japanese Journal of Applied Physics</i> , 2020, 59, 087001.	0.8	12
21	Development of a YAP(Ce) camera for the imaging of secondary electron bremsstrahlung x-ray emitted during carbon-ion irradiation toward the use of clinical conditions. <i>Physics in Medicine and Biology</i> , 2019, 64, 135019.	1.6	28
22	Recent Advances in Radioisotope Imaging Technology for Plant Science Research in Japan. <i>Quantum Beam Science</i> , 2019, 3, 18.	0.6	7
23	On-line rapid purification of [ <sup>13</sup> N]N <sub>2</sub> gas for visualization of nitrogen fixation and translocation in nodulated soybean. <i>Applied Radiation and Isotopes</i> , 2019, 151, 7-12.	0.7	7
24	A simulation study on reduction of the background component using veto counters for imaging of therapeutic proton beams by measuring secondary electron bremsstrahlung using a parallel-hole collimator. <i>Japanese Journal of Applied Physics</i> , 2019, 58, 021005.	0.8	6
25	Assessment of gamma radiation from a limited area of forest floor using a cumulative personal dosimeter. <i>Journal of Environmental Radioactivity</i> , 2019, 204, 95-103.	0.9	6
26	Towards a deeper integrated multi-omics approach in the root system to develop climate-resilient rice. <i>Molecular Breeding</i> , 2019, 39, 1.	1.0	15
27	Elevated glutathione synthesis in leaves contributes to zinc transport from roots to shoots in <i>Arabidopsis</i> . <i>Plant Science</i> , 2019, 283, 416-423.	1.7	13
28	Radiation Imaging in Plant Science. <i>Radioisotopes</i> , 2019, 68, 643-657.	0.1	2
29	Estimation and correction of produced light from prompt gamma photons on luminescence imaging of water for proton therapy dosimetry. <i>Physics in Medicine and Biology</i> , 2018, 63, 04NT02.	1.6	29
30	Imaging of monochromatic beams by measuring secondary electron bremsstrahlung for carbon-ion therapy using a pinhole x-ray camera. <i>Physics in Medicine and Biology</i> , 2018, 63, 045016.	1.6	37
31	Ultracompact Compton camera for innovative gamma-ray imaging. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2018, 912, 1-5.	0.7	13
32	Development of a cost-effective Compton camera using a positron emission tomography data acquisition system. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2018, 912, 20-23.	0.7	8
33	Source of luminescence of water lower energy than the Cerenkov-light threshold during irradiation of carbon-ion. <i>Journal of Physics Communications</i> , 2018, 2, 065010.	0.5	30
34	Development of an Easy and Simple Method to Measure the Environmental Radioactivity in Trees with Efficient Personal Dosimeters. <i>Radioisotopes</i> , 2018, 67, 427-434.	0.1	3
35	Effect of number of views on cross-sectional Compton imaging: A fundamental study with backprojection. <i>Physica Medica</i> , 2018, 56, 1-9.	0.4	14
36	<i>In vivo</i> simultaneous imaging with <sup>99m</sup> Tc and <sup>18</sup> F using a Compton camera. <i>Physics in Medicine and Biology</i> , 2018, 63, 205006.	1.6	40

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37	Sensitivity improvement in <sup>44</sup> Sc whole gamma imaging: simulation study. , 2018, , .		1
38	Astatine-211 imaging by a Compton camera for targeted radiotherapy. Applied Radiation and Isotopes, 2018, 139, 238-243.	0.7	19
39	Dynamic Analysis of Photosynthate Translocation Into Strawberry Fruits Using Non-invasive <sup>11</sup> C-Labeling Supported With Conventional Destructive Measurements Using <sup>13</sup> C-Labeling. Frontiers in Plant Science, 2018, 9, 1946.	1.7	30
40	Development of a Cherenkov light imaging system for studying the dynamics of radiocesium in plants. Journal of Nuclear Science and Technology, 2017, 54, 662-667.	0.7	8
41	Monte Carlo simulation of photon emission below a few hundred kiloelectronvolts for beam monitoring in carbon ion therapy. Review of Scientific Instruments, 2017, 88, 014301.	0.6	8
42	Arabidopsis thaliana FLO2 is Involved in Efficiency of Photoassimilate Translocation, Which is Associated with Leaf Growth and Aging, Yield of Seeds and Seed Quality. Plant and Cell Physiology, 2017, 58, 440-450.	1.5	6
43	Development of a low-energy high resolution X-ray camera for high-energy gamma photon background environments. Journal of Nuclear Science and Technology, 2017, 54, 933-939.	0.7	1
44	First demonstration of multi-color 3-D in vivo imaging using ultra-compact Compton camera. Scientific Reports, 2017, 7, 2110.	1.6	66
45	Optimization and verification of image reconstruction for a Compton camera towards application as an on-line monitor for particle therapy. Journal of Instrumentation, 2017, 12, P07015-P07015.	0.5	19
46	Development of a low-energy x-ray camera for the imaging of secondary electron bremsstrahlung x-ray emitted during proton irradiation for range estimation. Physics in Medicine and Biology, 2017, 62, 5006-5020.	1.6	37
47	Visualization of zinc dynamics in intact plants using positron imaging of commercially available <sup>65</sup> Zn. Plant Methods, 2017, 13, 40.	1.9	22
48	Concrete realization of the whole gamma imaging concept. , 2017, , .		3
49	Application of glutathione and dithiothreitol to oil seed rape ( <i>Brassica napus</i> L.) roots affects cadmium distribution in roots and inhibits Cd translocation to shoots. Soil Science and Plant Nutrition, 2016, 62, 379-385.	0.8	7
50	Kinetic Analysis of Zinc/Cadmium Reciprocal Competitions Suggests a Possible Zn-Insensitive Pathway for Root-to-Shoot Cadmium Translocation in Rice. Rice, 2016, 9, 16.	1.7	70
51	Secondary-electron-bremsstrahlung imaging for proton therapy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 833, 199-207.	0.7	37
52	Detection of a gas region in a human body across a therapeutic carbon beam by measuring low-energy photons. International Journal of PIXE, 2016, 26, 61-72.	0.4	7
53	Imaging of radiocesium uptake dynamics in a plant body by using a newly developed high-resolution gamma camera. Journal of Environmental Radioactivity, 2016, 151, 461-467.	0.9	17
54	Live-imaging evaluation of the efficacy of elevated CO <sub>2</sub> concentration in a closed cultivation system for the improvement of bioproduction in tomato fruits. Plant Biotechnology, 2015, 32, 31-37.	0.5	18

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55	Base to Tip and Long-Distance Transport of Sodium in the Root of Common Reed [ <i>Phragmites australis</i> (Cav.) Trin. ex Steud.] at Steady State Under Constant High-Salt Conditions. <i>Plant and Cell Physiology</i> , 2015, 56, 943-950.	1.5	29
56	Monitoring of positron using high-energy gamma camera for proton therapy. <i>Annals of Nuclear Medicine</i> , 2015, 29, 268-275.	1.2	20
57	Ultra-high resolution of radiocesium distribution detection based on Cherenkov light imaging. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2015, 777, 102-109.	0.7	3
58	Effects of Glutathione Concentration in the Root Zone and Glutathione Treatment Period on Cadmium Partitioning in Oilseed Rape Plants. <i>Proceedings of the International Plant Sulfur Workshop</i> , 2015, , 253-259.	0.1	1
59	From Laboratory to Field: OsNRAMP5-Knockdown Rice Is a Promising Candidate for Cd Phytoremediation in Paddy Fields. <i>PLoS ONE</i> , 2014, 9, e98816.	1.1	70
60	A kinetic analysis of cadmium accumulation in a <i>Cd</i> hyperaccumulator fern, <i>Athyrium yokoscense</i> and tobacco plants. <i>Plant, Cell and Environment</i> , 2014, 37, 1086-1096.	2.8	26
61	Three-layer GSO depth-of-interaction detector for high-energy gamma camera. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2014, 743, 124-129.	0.7	10
62	Recent Developments in Plant Science Involving Use of Gamma-ray Imaging Technology. <i>Journal of the Vacuum Society of Japan</i> , 2014, 57, 37-44.	0.3	0
63	Nitrate facilitates cadmium uptake, transport and accumulation in the hyperaccumulator <i>Sedum plumbizincicola</i> . <i>Environmental Science and Pollution Research</i> , 2013, 20, 6306-6316.	2.7	54
64	Application of glutathione to roots selectively inhibits cadmium transport from roots to shoots in oilseed rape. <i>Journal of Experimental Botany</i> , 2013, 64, 1073-1081.	2.4	76
65	An evaluation of three-dimensional imaging by use of Si/CdTe Compton cameras. , 2013, , .		2
66	Three-dimensional and Multienergy Gamma-ray Simultaneous Imaging by Using a Si/CdTe Compton Camera. <i>Radiology</i> , 2013, 267, 941-947.	3.6	23
67	A new method for monitoring beam range by measuring low energy photons. , 2013, , .		0
68	Beam range estimation by measuring bremsstrahlung. <i>Physics in Medicine and Biology</i> , 2012, 57, 2843-2856.	1.6	48
69	Real-time whole-plant imaging of <sup>11</sup> C translocation using positron-emitting tracer imaging system. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2011, 648, S317-S320.	0.7	20
70	Development of head module for multi-head Si/CdTe Compton camera for medical applications. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2011, 648, S2-S7.	0.7	2
71	Imaging of Carbon Translocation to Fruit Using Carbon-11-Labeled Carbon Dioxide and Positron Emission Tomography. <i>IEEE Transactions on Nuclear Science</i> , 2011, 58, 395-399.	1.2	23
72	Real-time imaging and analysis of differences in cadmium dynamics in rice cultivars ( <i>Oryza sativa</i> ) using positron-emitting <sup>107</sup> Cd tracer. <i>BMC Plant Biology</i> , 2011, 11, 172.	1.6	76

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73	Real-time Analysis of Translocation of Photosynthates to Nodules in Soybean Plants Using $^{11}\text{C}$ with a Positron-emitting Tracer Imaging System (PETIS). <i>Radioisotopes</i> , 2010, 59, 145-154.	0.1	2
74	Estimation of energy range measurements with newly developed Si/CdTe Compton camera for nuclear medicine imaging. , 2010, , .		2
75	Counting rate performance measurement of newly developed Si/CdTe Compton camera for biological and medical applications. , 2010, , .		0
76	Tracing Cadmium from Culture to Spikelet: Noninvasive Imaging and Quantitative Characterization of Absorption, Transport, and Accumulation of Cadmium in an Intact Rice Plant $\hat{\hat{A}}$ . <i>Plant Physiology</i> , 2010, 152, 1796-1806.	2.3	217
77	Simulation study of 3-D gamma-ray imager with Si/CdTe semiconductor Compton camera. , 2010, , .		1
78	Spatial resolution of multi-head Si/CdTe Compton camera for medical application. , 2009, , .		1
79	Molecular imaging for plant physiology: Imaging of carbon translocation to sink organs. , 2009, , .		0
80	A monitoring system of radioactive tracers in hydroponic solution for research on plant physiology. , 2009, , .		2
81	Imaging for carbon translocation to a fruit of tomato with carbon-11-labeled carbon dioxide and positron emission tomography. , 2009, , .		0
82	Production of no-carrier-added $^{64}\text{Cu}$ and applications to molecular imaging by PET and PETIS as a biomedical tracer. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 2009, 280, 199-205.	0.7	30
83	Real-time imaging of nitrogen fixation in an intact soybean plant with nodules using $^{13}\text{N}$ -labeled nitrogen gas. <i>Soil Science and Plant Nutrition</i> , 2009, 55, 660-666.	0.8	21
84	Experimental Results of the Gamma-Ray Imaging Capability With a Si/CdTe Semiconductor Compton Camera. <i>IEEE Transactions on Nuclear Science</i> , 2009, 56, 783-790.	1.2	57
85	Analysis of $\text{NO}_3$ interception of the parasitic angiosperm <i>Orobanch</i> spp. using a positron-emitting tracer imaging system and $^{13}\text{NO}_3$ : A new method for the visualization and quantitative analysis of the $\text{NO}_3$ interception ratio. <i>Soil Science and Plant Nutrition</i> , 2008, 54, 408-416.	0.8	13
86	Use of positron-emitting tracer imaging system for measuring the effect of salinity on temporal and spatial distribution of $^{11}\text{C}$ tracer and coupling between source and sink organs. <i>Plant Science</i> , 2008, 175, 210-216.	1.7	31
87	Monte Carlo simulation of multi-head Si/CdTe Compton camera for medical imaging. , 2008, , .		0
88	Basic characteristics of a newly developed Si/CdTe Compton camera for medical imaging. , 2008, , .		4
89	Application of double-sided silicon strip detectors to Compton cameras. , 2008, , .		0
90	Real-time Analysis of Photoassimilate Translocation in Intact Eggplant Fruit using $^{11}\text{C}$ and a Positron-emitting Tracer Imaging System. <i>Japanese Society for Horticultural Science</i> , 2008, 77, 199-205.	0.8	24

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91	Kinetic Analysis of Carbon-11-Labeled Carbon Dioxide for Studying Photosynthesis in a Leaf Using Positron Emitting Tracer Imaging System. IEEE Transactions on Nuclear Science, 2006, 53, 2991-2997.	1.2	44
92	A New Method for Parametric Imaging of Photosynthesis with C-11 Carbon Dioxide and Positron Emitting Tracer Imaging System (PETIS). , 2006, . .		3
93	Rapid Quantitative Measurement of CMRO2 and CBF by Dual Administration of 15O-Labeled Oxygen and Water During a Single PET Scan—a Validation Study and Error Analysis in Anesthetized Monkeys. Journal of Cerebral Blood Flow and Metabolism, 2005, 25, 1209-1224.	2.4	76
94	Quantitative Modeling of Photoassimilate Flow in an Intact Plant Using the Positron Emitting Tracer Imaging System (PETIS). Soil Science and Plant Nutrition, 2005, 51, 417-423.	0.8	30
95	Parametric imaging of myocardial blood flow with 15O-water and PET using the basis function method. Journal of Nuclear Medicine, 2005, 46, 1219-24.	2.8	45
96	Adenosine-induced myocardial flow reactivity in pig as assessed with O-15 water PET. International Congress Series, 2004, 1264, 117-125.	0.2	0
97	Dynamic spectroscopy of hyperpolarized Xe-129 in rat lung. International Congress Series, 2004, 1265, 131-138.	0.2	0
98	Effects of motion correction on quantification of myocardial blood flow with 15O-H2O PET. International Congress Series, 2004, 1265, 106-110.	0.2	0
99	Development of a Hyperpolarized 129Xe System on 3T for the Rat Lungs. Magnetic Resonance in Medical Sciences, 2004, 3, 1-9.	1.1	0
100	Macroscopic migration of implanted deuterium along a gas-bubble network in silicon. Journal of Applied Physics, 1999, 86, 3030-3035.	1.1	3