Petr Bruza

List of Publications by Year in descending order

109 papers	1,485 citations	361045 20 h-index	395343 33 g-index
112 all docs	112 docs citations	112 times ranked	1577 citing authors

#	Article	IF	Citations
1	Quantification of Oxygen Depletion During FLASH Irradiation In Vitro and In Vivo. International Journal of Radiation Oncology Biology Physics, 2021, 111, 240-248.	0.4	93
2	Dosimetry for FLASH Radiotherapy: A Review of Tools and the Role of Radioluminescence and Cherenkov Emission. Frontiers in Physics, 2020, 8, .	1.0	76
3	Generation and characterization of ultrathin free-flowing liquid sheets. Nature Communications, 2018, 9, 1353.	5.8	68
4	Femtosecond X-ray Fourier holography imaging of free-flying nanoparticles. Nature Photonics, 2018, 12, 150-153.	15.6	58
5	Maps of in vivo oxygen pressure with submillimetre resolution and nanomolar sensitivity enabled by Cherenkov-excited luminescence scanned imaging. Nature Biomedical Engineering, 2018, 2, 254-264.	11.6	55
6	Correcting Cherenkov light attenuation in tissue using spatial frequency domain imaging for quantitative surface dosimetry during whole breast radiation therapy. Journal of Biomedical Optics, 2018, 24, 1.	1.4	54
7	Electron FLASH Delivery at Treatment Room Isocenter for Efficient Reversible Conversion of a Clinical LINAC. International Journal of Radiation Oncology Biology Physics, 2021, 110, 872-882.	0.4	46
8	Tissue pO2 distributions in xenograft tumors dynamically imaged by Cherenkov-excited phosphorescence during fractionated radiation therapy. Nature Communications, 2020, 11, 573.	5.8	45
9	Considerations for three-dimensional image reconstruction from experimental data in coherent diffractive imaging. IUCrJ, 2018, 5, 531-541.	1.0	40
10	Imaging radiation dose in breast radiotherapy by X-ray CT calibration of Cherenkov light. Nature Communications, 2020, 11, 2298.	5.8	40
11	The Stable Center: A New Tool to Optimize Ce-Doped Oxide Scintillators. IEEE Transactions on Nuclear Science, 2016, 63, 433-438.	1.2	37
12	InGaN/GaN multiple quantum well for fast scintillation application: radioluminescence and photoluminescence study. Nanotechnology, 2014, 25, 455501.	1.3	33
13	Volume reconstruction of large tissue specimens from serial physical sections using confocal microscopy and correction of cutting deformations by elastic registration. Microscopy Research and Technique, 2009, 72, 110-119.	1.2	32
14	Optical and scintillation properties of Ce 3+ -doped YGd 2 Al 5â˜'x Ga x O 12 (x =2,3,4) single crystal scintillators. Journal of Luminescence, 2016, 169, 43-50.	1.5	31
15	Experimentally Observed Cherenkov Light Generation in the Eye During Radiation Therapy. International Journal of Radiation Oncology Biology Physics, 2020, 106, 422-429.	0.4	31
16	Light sheet luminescence imaging with Cherenkov excitation in thick scattering media. Optics Letters, 2016, 41, 2986.	1.7	26
17	Luminescence properties and scintillation response in Ce3+-doped Y2Gd1Al5-xGaxO12 (x = 2, 3, 4) single crystals. Journal of Applied Physics, 2014, 116, .	1.1	25
18	Initial Clinical Experience of Cherenkov Imaging in External Beam Radiation Therapy Identifies Opportunities to Improve Treatment Delivery. International Journal of Radiation Oncology Biology Physics, 2021, 109, 1627-1637.	0.4	25

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19	Cherenkov imaging for total skin electron therapy (TSET). Medical Physics, 2020, 47, 201-212.	1.6	22
20	Cherenkov imaging for linac beam shape analysis as a remote electronic quality assessment verification tool. Medical Physics, 2019, 46, 811-821.	1.6	21
21	Technical Note: Timeâ€gating to medical linear accelerator pulses: Stray radiation detector. Medical Physics, 2019, 46, 1044-1048.	1.6	21
22	Online Combination of EPID & Cherenkov Imaging for 3-D Dosimetry in a Liquid Phantom. IEEE Transactions on Medical Imaging, 2017, 36, 2099-2103.	5.4	20
23	Remote Cherenkov imagingâ€based quality assurance of a magnetic resonance imageâ€guided radiotherapy system. Medical Physics, 2018, 45, 2647-2659.	1.6	20
24	Garnet Scintillators of Superior Timing Characteristics: Material, Engineering by Liquid Phase Epitaxy. Advanced Optical Materials, 2017, 5, 1600875.	3.6	19
25	Table-top instrumentation for time-resolved luminescence spectroscopy of solids excited by nanosecond pulse of soft X-ray source and/or UV laser. Journal of Instrumentation, 2011, 6, P09007-P09007.	0.5	17
26	Time-gated scintillator imaging for real-time optical surface dosimetry in total skin electron therapy. Physics in Medicine and Biology, 2018, 63, 095009.	1.6	17
27	Tailoring and Optimization of LuAG:Ce Epitaxial Film Scintillation Properties by Mg Co-Doping. Crystal Growth and Design, 2018, 18, 4998-5007.	1.4	17
28	Observation of short wavelength infrared (SWIR) Cherenkov emission. Optics Letters, 2018, 43, 3854.	1.7	17
29	Assessment of imaging Cherenkov and scintillation signals in head and neck radiotherapy. Physics in Medicine and Biology, 2019, 64, 145021.	1.6	17
30	Rapid Multisite Remote Surface Dosimetry for Total Skin Electron Therapy: Scintillator Target Imaging. International Journal of Radiation Oncology Biology Physics, 2019, 103, 767-774.	0.4	17
31	pO2-weighted imaging in vivo by delayed fluorescence of intracellular Protoporphyrin IX. Optics Letters, 2020, 45, 284.	1.7	17
32	Scintillation characteristics of LiCaAlF6-based single crystals under X-ray excitation. Applied Physics Letters, 2013, 102, .	1.5	15
33	Characterization of a new scintillation imaging system for proton pencil beam dose rate measurements. Physics in Medicine and Biology, 2020, 65, 165014.	1.6	14
34	Optical imaging provides rapid verification of static small beams, radiosurgery, and VMAT plans with millimeter resolution. Medical Physics, 2019, 46, 5227-5237.	1.6	12
35	Cherenkovâ€excited luminescence scanned imaging using scanned beam differencing and iterative deconvolution in dynamic plan radiation delivery in a human breast phantom geometry. Medical Physics, 2019, 46, 3067-3077.	1.6	12
36	Scintillation imaging as a highâ€resolution, remote, versatile 2D detection system for MRâ€linac quality assurance. Medical Physics, 2020, 47, 3861-3869.	1.6	12

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37	Technical Note: Singleâ€pulse beam characterization for FLASHâ€RT using optical imaging in a water tank. Medical Physics, 2021, 48, 2673-2681.	1.6	12
38	Improving treatment geometries in total skin electron therapy: Experimental investigation of linac angles and floor scatter dose contributions using Cherenkov imaging. Medical Physics, 2018, 45, 2639-2646.	1.6	11
39	Producing a Beam Model of the Varian ProBeam Proton Therapy System using TOPAS Monte Carlo Toolkit. Medical Physics, 2020, 47, 6500-6508.	1.6	11
40	Review of in vivo optical molecular imaging and sensing from x-ray excitation. Journal of Biomedical Optics, 2021, 26, .	1.4	11
41	Cherenkov excited short-wavelength infrared fluorescence imaging in vivo with external beam radiation. Journal of Biomedical Optics, 2018, 24, 1.	1.4	11
42	Multi-beam scan analysis with a clinical LINAC for high resolution Cherenkov-excited molecular luminescence imaging in tissue. Biomedical Optics Express, 2018, 9, 4217.	1.5	11
43	Color Cherenkov imaging of clinical radiation therapy. Light: Science and Applications, 2021, 10, 226.	7.7	11
44	Cherenkov imaging in the potential roles of radiotherapy QA and delivery. Journal of Physics: Conference Series, 2017, 847, 012046.	0.3	10
45	Characterization of a non-contact imaging scintillator-based dosimetry system for total skin electron therapy. Physics in Medicine and Biology, 2019, 64, 125025.	1.6	10
46	Spatial and temporal dosimetry of individual electron FLASH beam pulses using radioluminescence imaging. Physics in Medicine and Biology, 2021, 66, 135009.	1.6	10
47	Individual pulse monitoring and dose control system for pre-clinical implementation of FLASH-RT. Physics in Medicine and Biology, 2022, 67, 095003.	1.6	10
48	Imaging of nanostructures with sub-100Ânm spatial resolution using a desktop EUV microscope. Applied Physics B: Lasers and Optics, 2012, 109, 105-111.	1.1	9
49	High-Resolution pO2 Imaging Improves Quantification of the Hypoxic Fraction in Tumors During Radiation Therapy. International Journal of Radiation Oncology Biology Physics, 2021, 109, 603-613.	0.4	9
50	Algorithm development for intrafraction radiotherapy beam edge verification from Cherenkov imaging. Journal of Medical Imaging, 2018, 5, 1.	0.8	9
51	XUV radiation from gaseous nitrogen and argon target laser plasmas. Journal of Physics: Conference Series, 2012, 370, 012049.	0.3	8
52	Applications of a Table-Top Time-Resolved Luminescence Spectrometer With Nanosecond Soft X-ray Pulse Excitation. IEEE Transactions on Nuclear Science, 2014, 61, 448-451.	1.2	8
53	Single-photon avalanche diode imaging sensor for subsurface fluorescence LiDAR. Optica, 2021, 8, 1126.	4.8	8
54	Detective quantum efficiency of intensified CMOS cameras for Cherenkov imaging in radiotherapy. Physics in Medicine and Biology, 2020, 65, 225013.	1.6	8

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55	Characterizing short-wave infrared fluorescence of conventional near-infrared fluorophores. Journal of Biomedical Optics, 2019, 24, 1.	1.4	8
56	Improvements to an optical scintillator imaging-based tissue dosimetry system. Journal of Biomedical Optics, 2019, 24, 1.	1.4	8
57	Tomographic Cherenkov-excited luminescence scanned imaging with multiple pinhole beams recovered via back-projection reconstruction. Optics Letters, 2019, 44, 1552.	1.7	8
58	Targeted neural differentiation of murine mesenchymal stem cells by a protocol simulating the inflammatory site of neural injury. Journal of Tissue Engineering and Regenerative Medicine, 2017, 11, 1588-1597.	1.3	7
59	Radiotherapy-induced Cherenkov luminescence imaging in a human body phantom. Journal of Biomedical Optics, 2018, 23, 1.	1.4	7
60	Treatment Planning System for Electron FLASH Radiotherapy: Open-source for Clinical Implementation. International Journal of Radiation Oncology Biology Physics, 2021, , .	0.4	7
61	Scintillating ceramics based on non-stoichiometric strontium hafnate. Optical Materials, 2018, 77, 246-252.	1.7	6
62	Optical imaging method to quantify spatial dose variation due to the electron return effect in an MRâ€linac. Medical Physics, 2020, 47, 1258-1267.	1.6	6
63	Visual Isocenter Position Enhanced Review (VIPER): a Cherenkov imagingâ€based solution for MRâ€linac daily QA. Medical Physics, 2021, 48, 2750-2759.	1.6	6
64	Comparison of phosphorescent agents for noninvasive sensing of tumor oxygenation via Cherenkov-excited luminescence imaging. Journal of Biomedical Optics, 2019, 24, 1.	1.4	6
65	Implantable sensor for local Cherenkov-excited luminescence imaging of tumor pO2 during radiotherapy. Journal of Biomedical Optics, 2020, 25, .	1.4	6
66	Single pixel hyperspectral Cherenkov-excited fluorescence imaging with LINAC X-ray sheet scanning and spectral unmixing. Optics Letters, 2020, 45, 6130.	1.7	6
67	Study of crystalline thin films and nanofibers by means of the laserâ€“plasma EUV-source based microscopy. Radiation Physics and Chemistry, 2013, 93, 54-58.	1.4	5
68	Cherenkoscopy for Treatment Verification: Correlation of Radiation Dose to Cherenkov Emission Intenisty in Whole Breast Radiation Therapy. International Journal of Radiation Oncology Biology Physics, 2017, 99, E673.	0.4	5
69	Estimation of diffuse Cherenkov optical emission from external beam radiation build-up in tissue. Journal of Biomedical Optics, 2021, 26, .	1.4	5
70	Cherenkov imaging for Total Skin Electron Therapy (TSET). , 2018, , .		5
71	Remote dose imaging from Cherenkov light using spatially resolved CT calibration in breast radiotherapy. Medical Physics, 2022, 49, 4018-4025.	1.6	5
72	Technical Note: A novel dosimeter improves total skin electron therapy surface dosimetry workflow. Journal of Applied Clinical Medical Physics, 2020, 21, 158-162.	0.8	4

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73	Verification of field match lines in whole breast radiation therapy using Cherenkov imaging. Radiotherapy and Oncology, 2021, 160, 90-96.	0.3	4
74	TU-AB-BRA-12: Quality Assurance of An Integrated Magnetic Resonance Image Guided Adaptive Radiotherapy Machine Using Cherenkov Imaging. Medical Physics, 2016, 43, 3736-3736.	1.6	4
75	Computer animation body surface analysis of total skin electron radiation therapy dose homogeneity via Cherenkov imaging. Journal of Medical Imaging, 2020, 7, 1.	0.8	4
76	Time-gated luminescence imaging for background free in vivo tracking of single circulating tumor cells. Optics Letters, 2020, 45, 3761.	1.7	4
77	Cherenkov Video Imaging During Breast Radiation Therapy Verifies Stable Beam Shapes Across Treatment Days. International Journal of Radiation Oncology Biology Physics, 2017, 99, S230.	0.4	3
78	Real-time 3D dose imaging in water phantoms: reconstruction from simultaneous EPID-Cherenkov 3D imaging (EC3D). Journal of Physics: Conference Series, 2017, 847, 012034.	0.3	3
79	Using Cherenkov Imaging to Assess Field Overlap in Cranial-Spinal Irradiation (CSI). International Journal of Radiation Oncology Biology Physics, 2019, 105, E729-E730.	0.4	3
80	Scintillator Target Imaging: A Novel Surface Dosimetry Method. International Journal of Radiation Oncology Biology Physics, 2019, 105, E697-E698.	0.4	3
81	Visualization and quantification of pancreatic tumor stroma in fresh tissue via ultraviolet surface excitation. Journal of Biomedical Optics, 2021, 26, .	1.4	3
82	pO2-weighted imaging in vivo by delayed fluorescence of intracellular protoporphyrin IX: publisherâ€™s note. Optics Letters, 2020, 45, 664.	1.7	3
83	Optimization of in vivo Cherenkov imaging dosimetry via spectral choices for ambient background lights and filtering. Journal of Biomedical Optics, 2021, 26, .	1.4	3
84	Performance comparison of quantitative metrics for analysis of in vivo Cherenkov imaging incident detection during radiotherapy. British Journal of Radiology, 2022, 95, .	1.0	3
85	Cherenkov-excited luminescence sheet imaging (CELSI) tomographic reconstruction. , 2017, , .		2
86	Technical Note: Quality assurance and relative dosimetry testing of a 60 Co total body irradiator using optical imaging. Medical Physics, 2019, 46, 3674-3678.	1.6	2
87	Cherenkov imaging for total skin electron therapy: an evaluation of dose uniformity. , 2021, 11628, .		2
88	Survey of X-ray induced Cherenkov excited fluorophores with potential for human use. Journal of Radiation Research, 2021, 62, 833-840.	0.8	2
89	Optical emissionâ€based phantom to verify coincidence of radiotherapy and imaging isocenters on an MRâ€linac. Journal of Applied Clinical Medical Physics, 2021, 22, 252-261.	0.8	2
90	Imaging Cherenkov photon emissions in radiotherapy with a Geiger-mode gated quanta image sensor. Optics Letters, 2019, 44, 4546.	1.7	2

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91	Treatment Planning System for Clinical Translation of Electron FLASH Radiotherapy. International Journal of Radiation Oncology Biology Physics, 2021, 111, S31.	0.4	2
92	Detection of soft X-rays with the pixel detector Timepix operated as a highly sensitive dark-current free CCD-like camera. , 2011, , .		1
93	Pixel detector Timepix operated in pile-up mode for pulsed imaging with ultra-soft X-rays. Journal of Instrumentation, 2012, 7, C12013-C12013.	0.5	1
94	Spatial frequency heterodyne imaging in the soft x-ray water window. Applied Physics Letters, 2014, 104, 254101.	1.5	1
95	Real time radiotherapy verification with Cherenkov imaging: development of a system for beamlet verification. Journal of Physics: Conference Series, 2017, 847, 012042.	0.3	1
96	4D scintillation dosimetry for the MRI-linac: proof of concept. Journal of Physics: Conference Series, 2019, 1305, 012015.	0.3	1
97	Imaging in Nanoscale Using Laser-Plasma Sources of Extreme Ultraviolet (EUV). Springer Proceedings in Physics, 2014, , 269-276.	0.1	1
98	Correcting Cherenkov images for large-scale tissue-optical property attenuation using SFDI and patterned light reflectance for quantitative dosimetry. , 2019, , .		1
99	Cherenkov emission from external beam irradiation: proportional to the dose buildup gradient and inversely affected by tissue optical attenuation. , 2020, , .		1
100	Cherenkov Imaging to Compare Positional Accuracy of Right Breast Irradiation Setup Using Optical Surface Imaging vs. Traditional Laser Alignment. International Journal of Radiation Oncology Biology Physics, 2021, 111, e532.	0.4	1
101	Devices based on InGaN/GaN multiple quantum well for scintillator and detector applications. Proceedings of SPIE, 2016, , .	0.8	0
102	In Reply to Newell et al. International Journal of Radiation Oncology Biology Physics, 2021, 110, 909-910.	0.4	0
103	Imaging Radiotherapy-Induced Cherenkov Emission in Color. International Journal of Radiation Oncology Biology Physics, 2021, 111, S46.	0.4	0
104	TH-AB-209-04: 3D Light Sheet Luminescence Imaging with Cherenkov Radiation. Medical Physics, 2016, 43, 3864-3864.	1.6	0
105	Analysis of cumulative surface dose based on Cherenkov imaging of Total Skin Electron Therapy (TSET). , 2019, , .		0
106	Tomographic Cherenkov-excited luminescence scanned imaging based on back-projection reconstruction demonstrates 0.3mm spatial resolution for molecular reporter through 2-3cm of tissue. , 2019, , .		0
107	Generation of ultrathin free-flowing liquid sheets for FEL sample delivery. , 2019, , .		0
108	3D dose delivery QA using couch and gantry mounted cameras. Journal of Physics: Conference Series, 2022, 2167, 012027.	0.3	0

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109	Utilizing Pencil Beam Scan Dynamics and a Scintillation Screen to produce 3D Dose Distribution of Proton Beams. Journal of Physics: Conference Series, 2022, 2167, 012034.	0.3	0