

# Petr Bruza

## List of Publications by Year in descending order

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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	3D dose delivery QA using couch and gantry mounted cameras. Journal of Physics: Conference Series, 2022, 2167, 012027.	0.3	0
2	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
3	Remote dose imaging from Cherenkov light using spatially resolved CT calibration in breast radiotherapy. Medical Physics, 2022, 49, 4018-4025.	1.6	5
4	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
5	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
6	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
7	Visualization and quantification of pancreatic tumor stroma in fresh tissue via ultraviolet surface excitation. Journal of Biomedical Optics, 2021, 26, .	1.4	3
8	Review of in vivo optical molecular imaging and sensing from x-ray excitation. Journal of Biomedical Optics, 2021, 26, .	1.4	11
9	High-Resolution pO <sub>2</sub> 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
10	Technical Note: Single-pulse beam characterization for FLASH-RT using optical imaging in a water tank. Medical Physics, 2021, 48, 2673-2681.	1.6	12
11	Cherenkov imaging for total skin electron therapy: an evaluation of dose uniformity. , 2021, 11628, .		2
12	Visual Isocenter Position Enhanced Review (VIPER): a Cherenkov imaging-based solution for MR-linac daily QA. Medical Physics, 2021, 48, 2750-2759.	1.6	6
13	Spatial and temporal dosimetry of individual electron FLASH beam pulses using radioluminescence imaging. Physics in Medicine and Biology, 2021, 66, 135009.	1.6	10
14	In Reply to Newell et al. International Journal of Radiation Oncology Biology Physics, 2021, 110, 909-910.	0.4	0
15	Survey of X-ray induced Cherenkov excited fluorophores with potential for human use. Journal of Radiation Research, 2021, 62, 833-840.	0.8	2
16	Verification of field match lines in whole breast radiation therapy using Cherenkov imaging. Radiotherapy and Oncology, 2021, 160, 90-96.	0.3	4
17	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
18	Single-photon avalanche diode imaging sensor for subsurface fluorescence LiDAR. Optica, 2021, 8, 1126.	4.8	8

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19	Optical emission-based phantom to verify coincidence of radiotherapy and imaging isocenters on an MR-linac. Journal of Applied Clinical Medical Physics, 2021, 22, 252-261.	0.8	2
20	Estimation of diffuse Cherenkov optical emission from external beam radiation build-up in tissue. Journal of Biomedical Optics, 2021, 26, .	1.4	5
21	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
22	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
23	Treatment Planning System for Clinical Translation of Electron FLASH Radiotherapy. International Journal of Radiation Oncology Biology Physics, 2021, 111, S31.	0.4	2
24	Imaging Radiotherapy-Induced Cherenkov Emission in Color. International Journal of Radiation Oncology Biology Physics, 2021, 111, S46.	0.4	0
25	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
26	Color Cherenkov imaging of clinical radiation therapy. Light: Science and Applications, 2021, 10, 226.	7.7	11
27	Treatment Planning System for Electron FLASH Radiotherapy: Open-source for Clinical Implementation. International Journal of Radiation Oncology Biology Physics, 2021, , .	0.4	7
28	Cherenkov imaging for total skin electron therapy (TSET). Medical Physics, 2020, 47, 201-212.	1.6	22
29	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
30	Optical imaging method to quantify spatial dose variation due to the electron return effect in an MR-linac. Medical Physics, 2020, 47, 1258-1267.	1.6	6
31	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
32	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
33	Scintillation imaging as a high-resolution, remote, versatile 2D detection system for MR-linac quality assurance. Medical Physics, 2020, 47, 3861-3869.	1.6	12
34	Dosimetry for FLASH Radiotherapy: A Review of Tools and the Role of Radioluminescence and Cherenkov Emission. Frontiers in Physics, 2020, 8, .	1.0	76
35	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
36	Imaging radiation dose in breast radiotherapy by X-ray CT calibration of Cherenkov light. Nature Communications, 2020, 11, 2298.	5.8	40

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37	Tissue pO <sub>2</sub> distributions in xenograft tumors dynamically imaged by Cherenkov-excited phosphorescence during fractionated radiation therapy. <i>Nature Communications</i> , 2020, 11, 573.	5.8	45
38	Detective quantum efficiency of intensified CMOS cameras for Cherenkov imaging in radiotherapy. <i>Physics in Medicine and Biology</i> , 2020, 65, 225013.	1.6	8
39	Implantable sensor for local Cherenkov-excited luminescence imaging of tumor pO <sub>2</sub> during radiotherapy. <i>Journal of Biomedical Optics</i> , 2020, 25, .	1.4	6
40	Cherenkov emission from external beam irradiation: proportional to the dose buildup gradient and inversely affected by tissue optical attenuation. , 2020, , .		1
41	pO <sub>2</sub> -weighted imaging in vivo by delayed fluorescence of intracellular protoporphyrin IX: publisher's note. <i>Optics Letters</i> , 2020, 45, 664.	1.7	3
42	pO <sub>2</sub> -weighted imaging in vivo by delayed fluorescence of intracellular Protoporphyrin IX. <i>Optics Letters</i> , 2020, 45, 284.	1.7	17
43	Computer animation body surface analysis of total skin electron radiation therapy dose homogeneity via Cherenkov imaging. <i>Journal of Medical Imaging</i> , 2020, 7, 1.	0.8	4
44	Time-gated luminescence imaging for background free in vivo tracking of single circulating tumor cells. <i>Optics Letters</i> , 2020, 45, 3761.	1.7	4
45	Single pixel hyperspectral Cherenkov-excited fluorescence imaging with LINAC X-ray sheet scanning and spectral unmixing. <i>Optics Letters</i> , 2020, 45, 6130.	1.7	6
46	Assessment of imaging Cherenkov and scintillation signals in head and neck radiotherapy. <i>Physics in Medicine and Biology</i> , 2019, 64, 145021.	1.6	17
47	4D scintillation dosimetry for the MRI-linac: proof of concept. <i>Journal of Physics: Conference Series</i> , 2019, 1305, 012015.	0.3	1
48	Optical imaging provides rapid verification of static small beams, radiosurgery, and VMAT plans with millimeter resolution. <i>Medical Physics</i> , 2019, 46, 5227-5237.	1.6	12
49	Using Cherenkov Imaging to Assess Field Overlap in Cranial-Spinal Irradiation (CSI). <i>International Journal of Radiation Oncology Biology Physics</i> , 2019, 105, E729-E730.	0.4	3
50	Scintillator Target Imaging: A Novel Surface Dosimetry Method. <i>International Journal of Radiation Oncology Biology Physics</i> , 2019, 105, E697-E698.	0.4	3
51	Technical Note: Quality assurance and relative dosimetry testing of a 60 Co total body irradiator using optical imaging. <i>Medical Physics</i> , 2019, 46, 3674-3678.	1.6	2
52	Cherenkov-excited luminescence scanned imaging using scanned beam differencing and iterative deconvolution in dynamic plan radiation delivery in a human breast phantom geometry. <i>Medical Physics</i> , 2019, 46, 3067-3077.	1.6	12
53	Characterization of a non-contact imaging scintillator-based dosimetry system for total skin electron therapy. <i>Physics in Medicine and Biology</i> , 2019, 64, 125025.	1.6	10
54	Cherenkov imaging for linac beam shape analysis as a remote electronic quality assessment verification tool. <i>Medical Physics</i> , 2019, 46, 811-821.	1.6	21

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55	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
56	Technical Note: Time-gating to medical linear accelerator pulses: Stray radiation detector. Medical Physics, 2019, 46, 1044-1048.	1.6	21
57	Characterizing short-wave infrared fluorescence of conventional near-infrared fluorophores. Journal of Biomedical Optics, 2019, 24, 1.	1.4	8
58	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
59	Improvements to an optical scintillator imaging-based tissue dosimetry system. Journal of Biomedical Optics, 2019, 24, 1.	1.4	8
60	Correcting Cherenkov images for large-scale tissue-optical property attenuation using SFDI and patterned light reflectance for quantitative dosimetry. , 2019, , .		1
61	Tomographic Cherenkov-excited luminescence scanned imaging with multiple pinhole beams recovered via back-projection reconstruction. Optics Letters, 2019, 44, 1552.	1.7	8
62	Imaging Cherenkov photon emissions in radiotherapy with a Geiger-mode gated quanta image sensor. Optics Letters, 2019, 44, 4546.	1.7	2
63	Analysis of cumulative surface dose based on Cherenkov imaging of Total Skin Electron Therapy (TSET). , 2019, , .		0
64	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
65	Generation of ultrathin free-flowing liquid sheets for FEL sample delivery. , 2019, , .		0
66	Femtosecond X-ray Fourier holography imaging of free-flying nanoparticles. Nature Photonics, 2018, 12, 150-153.	15.6	58
67	Generation and characterization of ultrathin free-flowing liquid sheets. Nature Communications, 2018, 9, 1353.	5.8	68
68	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
69	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
70	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
71	Remote Cherenkov imaging-based quality assurance of a magnetic resonance image-guided radiotherapy system. Medical Physics, 2018, 45, 2647-2659.	1.6	20
72	Scintillating ceramics based on non-stoichiometric strontium hafnate. Optical Materials, 2018, 77, 246-252.	1.7	6

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73	Considerations for three-dimensional image reconstruction from experimental data in coherent diffractive imaging. IUCr, 2018, 5, 531-541.	1.0	40
74	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
75	Observation of short wavelength infrared (SWIR) Cherenkov emission. Optics Letters, 2018, 43, 3854.	1.7	17
76	Radiotherapy-induced Cherenkov luminescence imaging in a human body phantom. Journal of Biomedical Optics, 2018, 23, 1.	1.4	7
77	Cherenkov excited short-wavelength infrared fluorescence imaging in vivo with external beam radiation. Journal of Biomedical Optics, 2018, 24, 1.	1.4	11
78	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
79	Algorithm development for intrafraction radiotherapy beam edge verification from Cherenkov imaging. Journal of Medical Imaging, 2018, 5, 1.	0.8	9
80	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
81	Cherenkov imaging for Total Skin Electron Therapy (TSET). , 2018, , .		5
82	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
83	Cherenkov-excited luminescence sheet imaging (CELSI) tomographic reconstruction. , 2017, , .		2
84	Garnet Scintillators of Superior Timing Characteristics: Material, Engineering by Liquid Phase Epitaxy. Advanced Optical Materials, 2017, 5, 1600875.	3.6	19
85	Cherenkovoscopy for Treatment Verification: Correlation of Radiation Dose to Cherenkov Emission Intensity in Whole Breast Radiation Therapy. International Journal of Radiation Oncology Biology Physics, 2017, 99, E673.	0.4	5
86	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
87	Cherenkov imaging in the potential roles of radiotherapy QA and delivery. Journal of Physics: Conference Series, 2017, 847, 012046.	0.3	10
88	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
89	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
90	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

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91	Devices based on InGaN/GaN multiple quantum well for scintillator and detector applications. Proceedings of SPIE, 2016, , .	0.8	0
92	Light sheet luminescence imaging with Cherenkov excitation in thick scattering media. Optics Letters, 2016, 41, 2986.	1.7	26
93	The Stable Center: A New Tool to Optimize Ce-Doped Oxide Scintillators. IEEE Transactions on Nuclear Science, 2016, 63, 433-438.	1.2	37
94	Optical and scintillation properties of Ce <sup>3+</sup> -doped YGd <sub>2</sub> Al <sub>5-<math>\hat{r}</math>x</sub> Ga <sub>x</sub> O <sub>12</sub> (x =2,3,4) single crystal scintillators. Journal of Luminescence, 2016, 169, 43-50.	1.5	31
95	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
96	TH-AB-209-04: 3D Light Sheet Luminescence Imaging with Cherenkov Radiation. Medical Physics, 2016, 43, 3864-3864.	1.6	0
97	Luminescence properties and scintillation response in Ce <sup>3+</sup> -doped Y <sub>2</sub> Gd <sub>1</sub> Al <sub>5-x</sub> Ga <sub>x</sub> O <sub>12</sub> (x = 2, 3, 4) single crystals. Journal of Applied Physics, 2014, 116, .	1.1	25
98	Spatial frequency heterodyne imaging in the soft x-ray water window. Applied Physics Letters, 2014, 104, 254101.	1.5	1
99	InGaN/GaN multiple quantum well for fast scintillation application: radioluminescence and photoluminescence study. Nanotechnology, 2014, 25, 455501.	1.3	33
100	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
101	Imaging in Nanoscale Using Laser-Plasma Sources of Extreme Ultraviolet (EUV). Springer Proceedings in Physics, 2014, , 269-276.	0.1	1
102	Scintillation characteristics of LiCaAlF <sub>6</sub> -based single crystals under X-ray excitation. Applied Physics Letters, 2013, 102, .	1.5	15
103	Study of crystalline thin films and nanofibers by means of the laser- $\hat{r}$ plasma EUV-source based microscopy. Radiation Physics and Chemistry, 2013, 93, 54-58.	1.4	5
104	XUV radiation from gaseous nitrogen and argon target laser plasmas. Journal of Physics: Conference Series, 2012, 370, 012049.	0.3	8
105	Imaging of nanostructures with sub-100Ånm spatial resolution using a desktop EUV microscope. Applied Physics B: Lasers and Optics, 2012, 109, 105-111.	1.1	9
106	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
107	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
108	Detection of soft X-rays with the pixel detector Timepix operated as a highly sensitive dark-current free CCD-like camera. , 2011, , .		1

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109	Volume reconstruction of large tissue specimens from serial physical sections using confocal microscopy and correction of cutting deformations by elastic registration. <i>Microscopy Research and Technique</i> , 2009, 72, 110-119.	1.2	32