

CURRICULUM VITAE

Professor Petasecca Marco

Born 30/03/1975 in Foligno (PG) – ITALY

Job Position (Continuing): Full Professor at the University of Wollongong, School of Physics and Centre for Medical Radiation Physics - Faculty of Engineering and Information Sciences, Northfields Avenue, 2500 Wollongong NSW AUSTRALIA.

Qualifications:

2002, BEng(Hon) – Electronic Engineering for Telecom, University of Perugia

2017, BSc(Hon) - Physics, University of Wollongong

2005, PhD – Solid State Physics, University of Perugia

Membership of Professional Bodies:

IEEE Nuclear and Plasma Physics Society – since 2005

Australian Institute of Physics – since 2013

Academic Appointment Record:

2005-2007 Post-doctoral Fellow at University of Perugia – National Institute of Nuclear Physics (Italy).

2007-2012 Post-doctoral Fellow at University of Wollongong – Centre for Medical Radiation Physics (Australia).

2012-2017 Senior Lecturer at University of Wollongong - School of Physics (Australia)

2017-2022 Associate Professor at University of Wollongong - School of Physics (Australia)

Professional Contributions to Educational Development:

Coordinator of 2nd and 3rd Year Electromagnetism – School of Physics

Lecturer of 1st Year Electromagnetism (PHYS142/143)

Development of Physics 3rd Year Lab experiments

Development of Common First Year Engineering subject ENGG104 (Circuit Analysis)

Completed HDR students (updated to 03/2023):

- Master by research: Principal: 5; Co: 3;
- PhD: Principal: 6; Co: 10;

Supervising:

- Master by research: Principal: 2; Co: none;
- PhD: Principal: 4; Co: 2;

Physics Research Field and Publication Count:

H-index: 25 (Scopus)

FoR code: 0299 – medical physics

Keywords: Pixelated silicon detector, Front-end electronic design and development; Dosimetry instrumentation design for QA in medical applications; Small field dosimetry; advanced materials for dosimetry; organic semiconductors; amorphous silicon.

Number of peer reviewed publications (06/2023 - Scopus): 202

Number of Review Papers (06/2023 - Scopus): 7

Number of peer reviewed conference publications (06/2023 - Scopus): 24

Main research activities 2007-2023:

<i>Collaborations and Projects</i>	<i>Funding Scheme</i>	<i>Main Objectives</i>	<i>Personal Objectives</i>
3D-SiAM and HASPIDE	INFN G5 – (international) 2019-2024	Amorphous silicon radiation detectors	- Design, test and development of a dosimeter on flexible substrate
COBRA – urethra probe for in-vivo dosimetry in Brachytherapy	INFN G5 – (international) 2019-2022	Active pixel dosimeter	- Test of active CMOS pixel for dosimetry in HDR and LDR
Organic Semiconductors for Dosimetry in RT	AINSE 2018, AINSE 2022, AINSE 2023 Defence Department – Intelligence Fellowship Program 2023	Dosimeter based on organic electronics	- Design, test and development; supervision of PhD students
X-tream – Microbeam radiotherapy for brain cancers	NHMRC - 2011	Dosimetry system for QA of high intensity synchrotron light	- Design of the detector - Design and development of the analog and digital readout electronics
BrachyView – In body imaging system for prostate brachytherapy	NHMRC DG-2010 NHMRC DG-2016	3D imaging reconstruction of the seeds position in the prostate during the brachytherapy treatment	- Design of the test bench for MEDIPIX - Imaging reconstruction
MagicPlate and Dose Magnifying Glass	ARC DP-2010 NHMRC PG-2017	2D dosimetry system for online QA of external radiation therapy as Inter Modulated RT and LINACs	- Design of the multichannel analog readout of the sensor - Test of the detector - Design of the control system for positioning of the detector in real-time
National Space Qualification Network	Space Infrastructure Funding 2020-2023	Building Australian Space Qualification facilities to boost Space Industry	- Single Event Effect laser based facility for pre-screening of electronic devices used in Space.

Main research activities 2002-2007:

<i>Collaborations and Projects</i>	<i>Main Objectives</i>	<i>Personal Objectives</i>
CERN (Geneve) – RD50: Radiation hard semiconductor devices for very high luminosity collider (International Collaboration)	Studying on new materials and technologies for the realization radiation hardness particle detectors for very high fluences and luminosity experiments in the area of High Energy Physics (LHC and Super LHC).	- Simulation of electrical effects of radiation damage in silicon based detectors (thin or 3D detector) - Tutor for students
RAPS – SHARPS: Radiation Active CMOS based Pixel Sensor (INFN project)	Realization of pixellated radiation sensor with a local preamplification system based on a CMOS standard 0.18 μm technology.	- Design and realization of a laser IR and UV testbench for the characterization of the responsivity, energy and spatial resolution of a single pixel. - Tutor for students
Test Bench development for SEE and TID effect for IC using in deep space missions	High power laser and Heavy Ions test benches	- Electronic Readout circuits and GUI based on LABView and C++ interfaces
SiPM: Silicon PhotoMultiplier (INFN Project)	Design and realization of an imaging system for bio-medical and Space (Time Of Flight) oriented applications.	- Design of the I-V, C-V, dark count and Efficiency test bench as function of the temperature. - Design of the Analog front end electronic stage (1GHz BW) - Tutor for students

Publications 2003-2023 (see attached).

Chief Investigator in the following Australian Grant Schemes:

2023-2025: National Intelligence Postdoctoral Grants (NIPG); Prof. Petasecca, Dr. Jessie Posar - \$ 400k

2022-2024: ARC Discovery Project DP230103091 Prof Anatoly Rozenfeld ; Prof Marco Petasecca ; Prof Michael Lerch ; Dr Thuy Linh Tran ; A/Prof Susanna Guatelli ; Dr Andrew See ; Dr Stuart George University of Wollongong, Title: Space RADIATION Monitoring System (SRAMS) for safe space missions – \$ 500k

2022-2023: AINSE Australian Synchrotron – Beam time for characterisation of aSi:H radiation dosimeters.

2020-2022: Space Infrastructure Fund (SIF) – NQFN development of a network of facilities for Space Qualification in Australia – Theme Leader Laser facility - \$ 3.5M

2017-2019: NHMRC Project Grant: Fast and efficient assessment of dose in small targets in radiotherapy, Role: CI-B – \$510,000.

2017-2019: ARC Discovery Project: Radiation detectors for better understanding ion interactions, Role: CI - \$550,000.

2016-2018: NHMRC Development Grant: 3D-Brachyview, Role: CI-A - \$400,000.

2011 – 2013: APP1017394 – NHMRC Development Grant: Radiosurgery with sub-millimeter x-ray beams: development of the X-Tream real-time beam monitoring and Quality Assurance system – Role: CI-C - \$ 394,615.00

2011-2012: AINSE - ALNGRA11119: Eye plaque sensor array IBIC characterisation – \$ 14,802.00

2011-2012 URC Small Grant: Proton therapy treatment of Prostate cancer; quality assurance technique - \$ 9,000.00

2010-2012: APP1000557 – NHMRC Project Grant: BrachyVision: A novel multipurpose probe for in body radiation imaging and dosimetry – Role CIB - \$ 523,500.00

2010-2012: ARC Discovery Project DP110104007 - Unified platform for real time QA in radiation therapy on medical LINAC and in brachytherapy based on high resolution silicon detectors (Magic Plate) - Role: CIB – \$ 300,000.00

2009 – 2010 URC Small Grant: SiPM for fiber optic dosimetry – 8,000.00

2009 – 2010 AINSE ALNGRA 5287: Microdosimeter characterisation at IBIC facility

Professional Qualifications:

2009 Training course for Radiation Safety (OHS-RST)

2006 Professional training course for Management and Company Administration. Since January to July 2006; funded by Sviluppo-Italia - Novaumbria, GEPAFIN e Regione Umbria - ITALY.

2001 Professional training course as “Microelectronic Researcher” funded by the Governative University administration MURST, by the company G&A Engineering s.r.l. and by the INFN (National Institute of Nuclear Physics)-Perugia. Course of 1100 hours (November 2000 - December 2001).

Academic Governance:

2022 – Academic Director of Bachelor of Medical Radiation Physics

2011 - Coordinator of the 2nd Year and 3rd Laboratory of the School of Physics of the University of Wollongong.

2010 – Member of the Local Organising Committee of the 16th International Solid State Dosimetry conference and SSD Summer School - <http://www.uow.edu.au/conferences/SSD16/> University of Wollongong and Sydney - 19th to 24th September 2010.

2007 - Occasional Lecturer at the School of Physics for the subject PHY390 (Astrophysics – Evaluation Summary report available if required) and PHY255 (Radiation Physics)

2002-2006: Lecturer for the “Fundamentals of Electronic circuitry” core subject at the Faculty of Electronic Engineering of the University of Perugia (ITALY).

Consultancies:

2019–current: Scientific Advisor for ElectroGenics Laboratories (ELL) - <https://electrogenicslabs.com/team/>

- 2020-2023: Electronic readout design and fabrication for aSi:H pixelated radiation sensors – INFN (Italy)
- 2005-2010 CEO and Project Manager MAPRAD S.r.l. – Perugia (Italy)
- 2005 External Consultant (12 month) for the company SISAS s.r.l. (06100 - Corciano of Perugia) for the design and realization of a laser Time Of Flight sensor (LIDAR) for automotive applications.
- 2002 External Consultant for THALES (ex Thomson CSF – Parigi - Francia) for a reverse engineering of commercial TFT-LCD monitors.
- 2002 Consultant (12 months) at University of Perugia, Physics Department as Expert of Laser Test System for Integrated Circuits.

Patents

Authors: Rozenfeld A.B., Lerch M.L.F., Petasecca M.: Australian Provisional Patent Application No 2010904210 entitled “Radiation detector Method and Apparatus” filed 17th September 2010

Authors: RIVETTI, ROLO, PANCHERI, PETASECCA, TEDESCO, GIAMPAOLO, BIANCO, Provisional 102023000000762 - SONDA PER LA RIVELAZIONE DI RADIAZIONI – 19/01/2023

Peer Reviewed Publications list 2003-2023

1. Menichelli, M., et al. Neutron irradiation of Hydrogenated Amorphous Silicon p-i-n diodes and charge selective contacts detectors (2023) Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1052, art. no. 168308
2. Matthew J Large [...], **M.Petasecca**, Hydrogenated amorphous silicon high flux x-ray detectors for synchrotron microbeam radiation therapy, 2023 Phys. Med. Biol. 68 135010
3. Pan, V.A., Tran, L.T., Pastuovic, Z., Hill, D., Williams, J., Kok, A., Povoli, M., Pogosso, A., Peracchi, S., Boardman, D., Davis, J., Guatelli, S., **Petasecca, M.**, Lerch, M.L.F., Rosenfeld, A.B. Charge Collection in SOI Microdosimeters and Their Radiation Hardness, (2023) IEEE Transactions on Nuclear Science, 70 (4), pp. 568-574.
4. Koprivec, D., Rosenfeld, A., Cutajar, D., **Petasecca, M.**, Howie, A., Bucci, J., Poder, J. Feasibility of online adaptive HDR prostate brachytherapy: A novel treatment concept (2022) Brachytherapy, 21 (6), pp. 943-955. DOI: 10.1016/j.brachy.2022.07.011
5. Schültke, E., Fiedler, S., Mewes, C., Gargioni, E., Klingenberg, J., Abreu Faria, G., Lerch, M., **Petasecca, M.**, Prehn, F., Wegner, M., Scholz, M., Jaekel, F., Hildebrandt, G. The Microbeam Insert at the White Beam Beamline P61A at the Synchrotron PETRA III/DESY: A New Tool for High Dose Rate Irradiation Research (2022) Cancers, 14 (20), art. no. 5137, DOI: 10.3390/cancers14205137
6. Peverini, F., Bizzarri, M., Boscardin, M., Calcagnile, L., Caprai, M., Caricato, A.P., Cirrone, G.A.P., Crivellari, M., Cuttone, G., Dunand, S., Fanò, L., Gianfelici, B., Hammad, O., Ionica, M., Kanxheri, K., Large, M., Maruccio, G., Menichelli, M., Monteduro, A.G., Moscatelli, F., Morozzi, A., Pallotta, S., Papi, A., Passeri, D., **Petasecca, M.**, Petringa, G., Pis, I., Quarta, G., Rizzato, S., Rossi, A., Rossi, G., Scorzoni, A., Soncini, C., Servoli, L., Tacchi, S., Talamonti, C., Verzellesi, G., Wyrsh, N., Zema, N., Pedio, M. High-Resolution Photoemission Study of Neutron-Induced Defects in Amorphous Hydrogenated Silicon Devices (2022) Nanomaterials, 12 (19), art. no. 3466, DOI: 10.3390/nano12193466
7. Poder, J., Koprivec, D., Dookie, Y., Howie, A., Cutajar, D., Damato, A.L., Côté, N., **Petasecca, M.**, Bucci, J., Rosenfeld, A. HDR prostate brachytherapy plan robustness and its effect on in-vivo source tracking error thresholds: A multi-institutional study (2022) Medical Physics, 49 (6), pp. 3529-3537. DOI: 10.1002/mp.15658
8. Su, F.-Y., Biasi, G., Tran, L.T., Pan, V., Hill, D., Lielkajis, M., Cutajar, D., **Petasecca, M.**, Lerch, M., Pastuovic, Z., Poder, J., Bucci, J., Jackson, M., Rosenfeld, A.B. Characterization of MOSFET Dosimeters for Alpha Particle Therapy (2022) IEEE Transactions on Nuclear Science, 69 (4), pp. 925-931. DOI: 10.1109/TNS.2022.3153697
9. Menichelli, M., Bizzarri, M., Boscardin, M., Caprai, M., Caricato, A.P., Cirrone, G.A.P., Crivellari, M., Cupparo, I., Cuttone, G., Dunand, S., Fanò, L., Hammad, O., Ionica, M., Kanxheri, K., Large, M., Maruccio, G., Monteduro, A.G., Morozzi, A., Moscatelli, F., Papi, A., Passeri, D., **Petasecca, M.**, Petringa, G., Quarta, G., Rizzato, S., Rossi, A., Rossi, G., Scorzoni, A., Servoli, L., Talamonti, C., Verzellesi, G., Wyrsh, N. Testing of planar hydrogenated amorphous silicon sensors with charge selective contacts for the construction of 3D-detectors

10. (2022) Journal of Instrumentation, 17 (3), art. no. C03033, DOI: 10.1088/1748-0221/17/03/C03033
11. Pan, V.A., Vohradsky, J., James, B., Pagani, F., Chartier, L., Debrot, E., Pastuovic, Z., Cutajar, D., Poder, J., Nancarrow, M., Pereloma, E., Bolst, D., Lee, S.H., Inaniwa, T., Safavi-Naeini, M., Prokopovich, D., Guatelli, S., **Petasecca, M.**, Lerch, M., Povoli, M., Kok, A., Tran, L.T., Rosenfeld, A.B. Application of an SOI Microdosimeter for Monitoring of Neutrons in Various Mixed Radiation Field Environments (2022) IEEE Transactions on Nuclear Science, 69 (3), pp. 491-500. DOI: 10.1109/TNS.2021.3125999
12. Davis, J., Dipuglia, A., Cameron, M., Paino, J., Cullen, A., Guatelli, S., **Petasecca, M.**, Rosenfeld, A., Lerch, M. Evaluation of silicon strip detectors in transmission mode for online beam monitoring in microbeam radiation therapy at the Australian Synchrotron (2022) Journal of Synchrotron Radiation, 29, pp. 125-137. DOI: 10.1107/S1600577521011140
13. Brace, O.J., Fuduli, I., Alnaghy, S., Le, A.T., Davis, J.A., Causer, T., Wilkinson, D., Perevertaylo, A., Rosenfeld, A.B., **Petasecca, M.** A Large Area Pixelated Silicon Array Detector for Independent Transit In Vivo Dosimetry (2022) Applied Sciences (Switzerland), 12 (2), art. no. 537, DOI: 10.3390/app12020537
14. Tran, L.T., Bolst, D., James, B., Pan, V., Vohradsky, J., Peracchi, S., Chartier, L., Debrot, E., Guatelli, S., **Petasecca, M.**, Lerch, M., Prokopovich, D., Pastuović, Ž., Povoli, M., Kok, A., Inaniwa, T., Lee, S.H., Matsufuji, N., Rosenfeld, A.B. Silicon 3d microdosimeters for advanced quality assurance in particle therapy (2022) Applied Sciences (Switzerland), 12 (1), art. no. 328, DOI: 10.3390/app12010328
15. Menichelli, M., Bizzarri, M., Boscardin, M., Caprai, M., Caricato, A.P., Cirrone, G.A.P., Crivellari, M., Cupparo, I., Cuttone, G., Dunand, S., Fanò, L., Alì, O.H., Ionica, M., Kanxheri, K., Large, M., Maruccio, G., Monteduro, A.G., Moscatelli, F., Morozzi, A., Papi, A., Passeri, D., **Petasecca, M.**, Rizzato, S., Rossi, A., Scorzoni, A., Servoli, L., Talamonti, C., Verzellesi, G., Wyrsh, N. Fabrication of a hydrogenated amorphous silicon detector in 3-d geometry and preliminary test on planar prototypes 2021 Instruments, 5(4), pp.32, 10.3390/instruments5040032
16. Posar, J.A., Large, M., Alnaghy, S., Paino, J.R., Butler, D.J., Griffith, M.J., Hood, S., Lerch, M.L.F., Rosenfeld, A., Sellin, P.J., Guatelli, S., **Petasecca, M.** Towards high spatial resolution tissue-equivalent dosimetry for microbeam radiation therapy using organic semiconductors, 2021 Journal of Synchrotron Radiation 28, pp. 1444-1454, 10.1107/S1600577521006044
17. De Martin, E., Alhujaili, S., Fumagalli, M.L., Ghielmetti, F., Marchetti, M., Gallo, P., Aquino, D., Padelli, F., Davis, J., Alnaghy, S., Carrara, M., Fariselli, L., Rosenfeld, A.B., **Petasecca, M.**, On the evaluation of edgeless diode detectors for patient-specific QA in high-dose stereotactic radiosurgery, 2021, Physica Medica 89, pp.20-28, 10.1016/j.ejmp.2021.07.010
18. Posar, J.A., Davis, J., Alnaghy, S., Wilkinson, D., Cottam, S., Lee, D.M., Thompson, K.L., Holmes, N.P., Barr, M., Fahy, A., Nicolaidis, N.C., Louie, F., Fraboni, B., Sellin, P.J., Lerch, M.L.F., Rosenfeld, A.B., **Petasecca, M.**, Griffith, M.J. Polymer Photodetectors for Printable, Flexible, and Fully Tissue Equivalent X-Ray Detection with Zero-Bias Operation and Ultrafast Temporal Responses, 2021 Advanced Materials Technologies, Vol. 6-9, 2001298, 10.1002/admt.202001298

19. James, B., Tran, L.T., Bolst, D., Prokopovich, D.A., Lerch, M., **Petasecca**, M., Guatelli, S., Povoli, M., Kok, A., Petringa, G., Cirrone, G.A.P., Jackson, M., Rosenfeld, A.B. In-field and out-of-field microdosimetric characterisation of a 62 MeV proton beam at CATANA 2021 Medical Physics, Vol.48(8), pp.4532-4541, 10.1002/mp.14905
20. Davis, J.A., Engels, E., **Petasecca**, M., Paino, J., Tehei, M., Corde, S., Stevenson, A., Hausermann, D., Guatelli, S., Rosenfeld, A., Lerch, M.L.F., X-TREAM protocol for in vitro microbeam radiation therapy at the Australian Synchrotron, 2021, Journal of Applied Physics, 129(24), 244902, 10.1063/5.0040013
21. Pan, V.A., Pagani, F., James, B., Bolst, D., Peracchi, S., Vohradsky, J., Pogosso, A., Guatelli, S., **Petasecca**, M., Lerch, M.L.F., Prokopovich, D.A., Boardman, D., Perevertaylo, V.L., Chambers, S.D., Williams, A.G., Werczynski, S., Inaniwa, T., Matsufuji, N., Jackson, M., Tran, L.T., Rosenfeld, A.B. Characterization of a novel large area microdosimeter system for low dose rate radiation environments, 2021, NIM A, 1002, 165238, 10.1016/j.nima.2021.165238
22. Debrot, E., Mundy, D., Guatelli, S., **Petasecca**, M., Perevertaylo, V., Beltran, C., Rosenfeld, A.B. The dose magnifying glass quality assurance system for daily proton therapy range verification, 2021, Physics in Medicine and Biology, Vol. 66(9), 94001, 10.1088/1361-6560/abf1b9
23. Peracchi, S., James, B., Pagani, F., Pan, V., Vohradsky, J., Bolst, D., Prokopovich, D.A., Guatelli, S., **Petasecca**, M., Lerch, M.L.F., Lee, S.H., Inaniwa, T., Matsufuji, N., Povoli, M., Kok, A., Jackson, M., Squire, T., Rosenfeld, A.B., Tran, L.T. Radiation Shielding Evaluation of Spacecraft Walls against Heavy Ions Using Microdosimetry 2021 IEEE Transactions on Nuclear Science Vol. 68(5), 9235502, pp. 897-905, 10.1109/TNS.2020.3032946
24. Peracchi, S., James, B., Psoroulas, S., Grossmann, M., Meer, D., Bolst, D., Pastuovic, Z., Vohradsky, J., Guatelli, S., Prokopovich, D.A., **Petasecca**, M., Lerch, M.L.F., Povoli, M., Kok, A., Jackson, M., Rosenfeld, A.B., Tran, L.T., Modelling of protons spectra encountered in space using medical accelerator and its microdosimetric characterization, 2021, Advances in Space Research Vol. 67(8), pp.2534-2543, 10.1016/j.asr.2021.01.041
25. Pelliccioli, P., Donzelli, M., Davis, J.A., Esteve, F., Hugtenburg, R., Guatelli, S., **Petasecca**, M., Lerch, M.L.F., Brauer-Krisch, E., Krisch, M. Study of the X-ray radiation interaction with a multislit collimator for the creation of microbeams in radiation therapy, 2021, Journal of Synchrotron Radiation Vol. 28, pp.392-403, 10.1107/S1600577520016811
26. Muñoz, L., Kron, T., **Petasecca**, M., Bucci, J., Jackson, M., Metcalfe, P., Rosenfeld, A.B., Biasi, G. Consistency of small-field dosimetry, on and off axis, in beam-matched linacs used for stereotactic radiosurgery (2021) Journal of Applied Clinical Medical Physics, DOI: 10.1002/acm2.13160
27. Kok, A., Povoli, M., Summanwar, A., Tran, L.T., **Petasecca**, M., Lerch, M.L.F., Bolst, D., Guatelli, S., Rosenfeld, A.B. Fabrication and First Characterization of Silicon-Based Full 3-D Microdosimeters (2020) IEEE Transactions on Nuclear Science, 67 (12), art. no. 9245506, pp. 2490-2500. DOI: 10.1109/TNS.2020.3035077

28. Brennen, T., Galli, L., Cutajar, D.L., Alnaghy, S., Bucci, J., Bece, A., Enari, K., Favoino, M., Carriero, M., Tartaglia, M., Archer, J., Lerch, M., Rosenfeld, A.B., **Petasecca**, M. BrachyView: Development of an algorithm for real-time automatic LDR brachytherapy seed detection (2020) *Physics in Medicine and Biology*, 65 (21), art. no. 215015, DOI: 10.1088/1361-6560/abac9e
29. Large, M.J., Malaroda, A., **Petasecca**, M., Rosenfeld, A.B., Guatelli, S. Modelling ICRP110 Adult Reference Voxel Phantoms for dosimetric applications: Development of a new Geant4 Advanced Example, (2020) *Journal of Physics: Conference Series*, 1662 (1), art. no. 012021, DOI: 10.1088/1742-6596/1662/1/012021
30. Muntildeoz, L., **Petasecca**, M., Metcalfe, P., Bucci, J., Jackson, M., Rosenfeld, A.B., Biasi, G. Assessing small-field output factors using a 2D monolithic diode array on a beam-matched Elekta linear accelerator (2020) *Journal of Physics: Conference Series*, 1662 (1), art. no. 012024, DOI: 10.1088/1742-6596/1662/1/012024
31. Causer, T.J., Alnaghy, S.J., Alnaghy, S., Roberts, N., **Petasecca**, M., Rosenfeld, A.B., Metcalfe, P., Oborn, B.M. Imaging and radiation isocentre determination for inline MR-guided radiotherapy systems-proof of principle using MR-phantom with embedded monolithic silicon detector (2020) *Journal of Physics: Conference Series*, 1662 (1), art. no. 012008, DOI: 10.1088/1742-6596/1662/1/012008
32. Biasi, G., Munoz, L., Hug, B., Ebert, M.A., **Petasecca**, M., Bucci, J., Jackson, M., Rosenfeld, A.B. The use of a new 2D array of diodes for small-field dosimetry of a CyberKnife equipped with a novel multi-leaf collimator (2020) *Journal of Physics: Conference Series*, 1662 (1), art. no. 012007, DOI: 10.1088/1742-6596/1662/1/012007
33. Su, F.-Y., Tran, L.T., Biasi, G., **Petasecca**, M., Lerch, M.L.F., Cutajar, D.L., Bucci, J., Jackson, M., Rosenfeld, A.B. Real-Time in-vivo dosimetry for DaRT (2020) *Journal of Physics: Conference Series*, 1662 (1), art. no. 012031, DOI: 10.1088/1742-6596/1662/1/012031
34. Rosenfeld, A.B., Biasi, G., **Petasecca**, M., Lerch, M.L.F., Villani, G., Feygelman, V. Semiconductor dosimetry in modern external-beam radiation therapy (2020) *Physics in Medicine and Biology*, 65 (16), art. no. 16TR01, DOI: 10.1088/1361-6560/aba163
35. Brace, O.J., Alhujaili, S.F., Paino, J.R., Butler, D.J., Wilkinson, D., Oborn, B.M., Rosenfeld, A.B., Lerch, M.L.F., **Petasecca**, M., Davis, J.A. Evaluation of the PTW microDiamond in edge-on orientation for dosimetry in small fields (2020) *Journal of Applied Clinical Medical Physics*, 21 (8), pp. 278-288. Cited 1 time.
36. Posar, J.A., Davis, J., Large, M.J., Basiricò, L., Ciavatti, A., Fraboni, B., Dhez, O., Wilkinson, D., Sellin, P.J., Griffith, M.J., Lerch, M.L.F., Rosenfeld, A., **Petasecca**, M. Characterization of an organic semiconductor diode for dosimetry in radiotherapy (2020) *Medical Physics*, 47 (8), pp. 3658-3668. Cited 1 time. DOI: 10.1002/mp.14229
37. Menichelli, M., Boscardin, M., Crivellari, M., Davis, J., Dunand, S., Fanò, L., Moscatelli, F., Movileanu-Ionica, M., **Petasecca**, M., Piccini, M., Rossi, A., Scorzoni, A., Verzellesi, G., Wyrsh, N. 3D Detectors on Hydrogenated Amorphous Silicon for particle tracking in high radiation environment (2020) *Journal of Physics: Conference Series*, 1561 (1), art. no. 012016, DOI: 10.1088/1742-6596/1561/1/012016

38. Fontanarosa, D., Benitez, J., Talkhani, S., Fielding, A., Entezam, A., Trapp, J., Moi, D., Biasi, G., **Petasecca**, M., Mazzieri, R. A novel add-on collimator for preclinical radiotherapy applications using a standard cell irradiator: design, construction, and validation (2020) *Medical Physics*, 47 (6), pp. 2461-2471. DOI: 10.1002/mp.14110
39. Matar, F.S., Wilkinson, D., Davis, J., Biasi, G., Causer, T., Fuduli, I., Brace, O., Stansook, N., Carolan, M., Rosenfeld, A.B., **Petasecca**, M. Quality assurance of VMAT on flattened and flattening filter-free accelerators using a high spatial resolution detector (2020) *Journal of Applied Clinical Medical Physics*, 21 (6), pp. 44-52. DOI: 10.1002/acm2.12864
40. Davis, J.A., Boscardin, M., Crivellari, M., Fanò, L., Large, M., Menichelli, M., Morozzi, A., Moscatelli, F., Movileanu-Ionica, M., Passeri, D., **Petasecca**, M., Piccini, M., Rossi, A., Scorzoni, A., Thompson, B., Verzellesi, G., Wyrsh, N. Modeling a Thick Hydrogenated Amorphous Silicon Substrate for Ionizing Radiation Detectors (2020) *Frontiers in Physics*, 8, art. no. 158, DOI: 10.3389/fphy.2020.00158
41. Posar, J.A., Davis, J., Brace, O., Sellin, P., Griffith, M.J., Dhez, O., Wilkinson, D., Lerch, M.L.F., Rosenfeld, A., **Petasecca**, M. Characterization of a plastic dosimeter based on organic semiconductor photodiodes and scintillator (2020) *Physics and Imaging in Radiation Oncology*, 14, pp. 48-52. DOI: 10.1016/j.phro.2020.05.007
42. Alnaghy, S.J., Causer, T., Roberts, N., Oborn, B., Jelen, U., Dong, B., Gargett, M., Begg, J., Liney, G., **Petasecca**, M., Rosenfeld, A.B., Holloway, L., Metcalfe, P. High resolution silicon array detector implementation in an inline MRI-linac (2020) *Medical Physics*, 47 (4), pp. 1920-1929. DOI: 10.1002/mp.14016
43. Menichelli, M., Boscardin, M., Crivellari, M., Davis, J., Dunand, S., Fanò, L., Morozzi, A., Moscatelli, F., Movileanu-Ionica, M., Passeri, D., **Petasecca**, M., Piccini, M., Rossi, A., Scorzoni, A., Servoli, L., Verzellesi, G., Wyrsh, N. Hydrogenated amorphous silicon detectors for particle detection, beam flux monitoring and dosimetry in high-dose radiation environment (2020) *Journal of Instrumentation*, 15 (4), art. no. C04005, DOI: 10.1088/1748-0221/15/04/C04005
44. Griffith, M.J., Cottam, S., Stamenkovic, J., Posar, J.A., **Petasecca**, M. Printable Organic Semiconductors for Radiation Detection: From Fundamentals to Fabrication and Functionality (2020) *Frontiers in Physics*, 8, art. no. 22, . DOI: 10.3389/fphy.2020.00022
45. Duncan, M., Donzelli, M., Pelliccioli, P., Brauer-Krisch, E., Davis, J.A., Lerch, M.L.F., Rosenfeld, A.B., **Petasecca**, M. First experimental measurement of the effect of cardio-synchronous brain motion on the dose distribution during microbeam radiation therapy (2020) *Medical Physics*, 47 (1), pp. 213-222. DOI: 10.1002/mp.13899
46. Causer, T.J., Schellhammer, S.M., Gantz, S., Lühr, A., Hoffmann, A.L., Metcalfe, P.E., Rosenfeld, A.B., Guatelli, S., **Petasecca**, M., Oborn, B.M. First application of a high-resolution silicon detector for proton beam Bragg peak detection in a 0.95 T magnetic field (2020) *Medical Physics*, 47 (1), pp. 181-189. DOI: 10.1002/mp.13871
47. Alnaghy, S.J., Causer, T., Roberts, N., Oborn, B., Jelen, U., Dong, B., Gargett, M., Begg, J., Liney, G., **Petasecca**, M., Rosenfeld, A.B., Holloway, L., Metcalfe, P. High resolution silicon array detector implementation in an inline MRI-linac (2020) *Medical Physics*, DOI: 10.1002/mp.14016

48. Rosenfeld, A., Alnaghy, S., **Petasecca**, M., Cutajar, D., Lerch, M., Pospisil, S., Giacometti, V., Schulte, R., Rosso, V., Würll, M., Granja, C., Martišíková, M., Parodi, K. Medipix detectors in radiation therapy for advanced quality-assurance (2020) *Radiation Measurements*, 130, art. no. 106211, DOI: 10.1016/j.radmeas.2019.106211
49. Peracchi, S., Matsufuji, N., Kok, A., Povoli, M., Jackson, M., Rosenfeld, A.B., Tran, L.T., James, B., Bolst, D., Prokopovich, D.A., Davis, J.A., Guatelli, S., **Petasecca**, M., Lerch, M.L.F. A Solid-State Microdosimeter for Dose and Radiation Quality Monitoring for Astronauts in Space (2020) *IEEE Transactions on Nuclear Science*, 67 (1), art. no. 8848875, pp. 169-174 DOI: 10.1109/TNS.2019.2943597
50. James, B., Povoli, M., Kok, A., Goethem, M.-J., Nancarrow, M., Matsufuji, N., Jackson, M., Rosenfeld, A.B., Tran, L.T., Bolst, D., Peracchi, S., Davis, J.A., Prokopovich, D.A., Guatelli, S., **Petasecca**, M., Lerch, M. SOI Thin Microdosimeters for High LET Single-Event Upset Studies in Fe, O, Xe, and Cocktail Ion Beam Fields (2020) *IEEE Transactions on Nuclear Science*, 67 (1), art. no. 8823950, pp. 146-153. DOI: 10.1109/TNS.2019.2939355
51. Kejda, A., Cutajar, D., Weaver, M., **Petasecca**, M., Rosenfeld, A. A novel quality assurance system for eye plaque brachytherapy (2019) *Australasian Physical and Engineering Sciences in Medicine*, 42 (4), pp. 1109-1115. DOI: 10.1007/s13246-019-00808-8
52. Dipuglia, A., Cameron, M., Davis, J.A., Cornelius, I.M., Stevenson, A.W., Rosenfeld, A.B., **Petasecca**, M., Corde, S., Guatelli, S., Lerch, M.L.F. Validation of a Monte Carlo simulation for Microbeam Radiation Therapy on the Imaging and Medical Beamline at the Australian Synchrotron (2019) *Scientific Reports*, 9 (1), art. no. 17696,
53. Utitsarn, K., Biasi, G., Stansook, N., Alrowaili, Z.A., **Petasecca**, M., Carolan, M., Perevertaylo, V.L., Tomé, W.A., Kron, T., Lerch, M.L.F., Rosenfeld, A.B. Two-dimensional solid-state array detectors: A technique for in vivo dose verification in a variable effective area (2019) *Journal of Applied Clinical Medical Physics*, 20 (11), pp. 88-94. DOI: 10.1002/acm2.12744
54. Brennen, T., Cutajar, D.L., Alnaghy, S., Bucci, J., Bece, A., Enari, K., Favoino, M., Carriero, F., Tartaglia, M., Galli, L., Lerch, M., Rosenfeld, A.B., **Petasecca**, M. BrachyView: Reconstruction of seed positions and volume of an LDR prostate brachytherapy patient plan using a baseline subtraction algorithm (2019) *Physica Medica*, 66, pp. 66-76. DOI: 10.1016/j.ejmp.2019.09.237
55. Pastuovic, Z., Davis, J., Linh Tran, T., Paino, J.R., Dipuglia, A., James, B., Povoli, M., Kok, A., Perevertaylo, V.L., Siegele, R., Prokopovich, D., Lerch, M., **Petasecca**, M., Rosenfeld, A., Cohen, D.D. "IBIC microscopy – The powerful tool for testing micron – Sized sensitive volumes in segmented radiation detectors used in synchrotron microbeam radiation and hadron therapies" – 2019, *Nuclear Instruments and Methods in Physics Research, Section B*, Vol.458, pp.90-96
56. Stansook, N., Biasi, G., Utitsarn, K., **Petasecca**, M., Metcalfe, P., Carolan, M., Lerch, M.L.F., Perevertaylo, V.L., Kron, T., Rosenfeld, A.B. "2D monolithic silicon-diode array detectors in megavoltage photon beams: does the fabrication technology matter? A medical physicist's perspective" 2019, *Australasian Physical and Engineering Sciences in Medicine*, Vol.42(2), pp.443-451

57. Debrot, E., Bolst, D., James, B., Tran, L., Guatelli, S., **Petasecca**, M., Prokopovich, D.A., Reinhard, M., Matsufuji, N., Jackson, M., Lerch, M., Rosenfeld, A.B. "INVESTIGATING VARIABLE RBE IN A 12C MINIBEAM FIELD WITH MICRODOSIMETRY AND GEANT4", 2019 Radiation protection dosimetry, Vol. 183, pp 160-166
58. Alnaghy, S., Cutajar, D.L., Safavi-Naeini, M., George, S., Howie, A., Bece, A., Bucci, J.A., Jakubek, J., Pospisil, S., Lerch, M.L.F., **Petasecca**, M., Rosenfeld, A.B. "BrachyView: Initial preclinical results for a real-time in-body HDR PBT source tracking system with simultaneous TRUS image fusion", 2019 Physics in Medicine and Biology, Vol. 64(8), 85002
59. Davis, J.A., Lazarakis, P., Vohradsky, J., Lerch, M.L.F., **Petasecca**, M., Guatelli, S., Rosenfeld, A.B. "Tissue equivalence of diamond for heavy charged particles", 2019 Radiation Measurements, Vol. 122, pp. 1-9
60. Poder, J., Cutajar, D., Guatelli, S., **Petasecca**, M., Howie, A., Bucci, J., Carrara, M., Rosenfeld, A. "A Monte Carlo study on the feasibility of real-time in vivo source tracking during ultrasound based HDR prostate brachytherapy treatments" 2019, Physica Medica, Vol. 59, pp.30-36
61. Romanyukha, A., Carrara, M., Mazzeo, D., Tenconi, C., Al-Salmani, T., Poder, J., Cutajar, D., Fuduli, I., **Petasecca**, M., Bucci, J., Cerrotta, A., Pappalardi, B., Piccolo, F., Pignoli, E., Rosenfeld, A. "An innovative gynecological HDR brachytherapy applicator system for treatment delivery and real-time verification", 2019 Physica Medica, Vol. 59, pp.151-157
62. Brace, O.J., Alhujaili, S., Deshpande, S., Davis, J.A., Vial, P., Metcalfe, P., Rosenfeld, A.B., **Petasecca**, M. "Feasibility of a dual detector system to perform transit dosimetry and MV imaging in-vivo", 2019 Journal of Instrumentation, Vol. 14(1), P01019
63. Biasi, G., Hardcastle, N., **Petasecca**, M., Guatelli, S., Perevertaylo, V., Kron, T., Rosenfeld, A.B. "On the instantaneous dose rate and angular dependence of monolithic silicon array detectors" 2019, IEEE Transactions on Nuclear Science, Vol.66(1), 8561165, pp.519-527
64. Alnaghy, S.J., Causer, T., Gargett, M., Roberts, N., **Petasecca**, M., Oborn, B.M., Rosenfeld, A.B., Holloway, L., Metcalfe, P. "A feasibility study for high-resolution silicon array detector performance in the magnetic field of a permanent magnet system", 2019 Medical Physics,
65. Alhujaili, S.F., Biasi, G., Alzorkany, F., Grogan, G., Al Kafi, M.A., Lane, J., Hug, B., Aldosari, A.H., Alshaikh, S., Farzad, P.R., Ebert, M.A., Moftah, B., Rosenfeld, A.B., **Petasecca**, M. "Quality assurance of Cyberknife robotic stereotactic radiosurgery using an angularly independent silicon detector" 2019, Journal of Applied Clinical Medical Physics, Vol. 20(1), pp. 76-88
66. James, B., Tran, L.T., Vohradsky, J., Bolst, D., Pan, V., Carr, M., Guatelli, S., Pogosso, A., **Petasecca**, M., Lerch, M., Prokopovich, D.A., Reinhard, M.I., Povoli, M., Kok, A., Hinde, D., Dasgupta, M., Stuchbery, A., Perevertaylo, V., Rosenfeld, A.B. "SOI thin microdosimeter detectors for low-energy ions and radiation damage studies", 2019 IEEE Transactions on Nuclear Science, Vol.66(1), 8571290, pp. 320-326
67. Würfl, M., Englbrecht, F.S., Lehrack, S., Gianoli, C., Lindner, F.H., Rösch, T.F., Haffa, D., Olivari, F., **Petasecca**, M., Lerch, M.L.F., Pogosso, A., Tran, L.T., Assmann, W., Schreiber, J., Rosenfeld, A.B., Parodi, K., "Time-of-flight spectrometry of ultra-short, polyenergetic proton bunches", 2018 Review of Scientific Instruments, Vol.89(12), 123302

68. Biasi, G., Davis, J., **Petasecca**, M., Guatelli, S., Perevertaylo, V., Kron, T., Rosenfeld, A.B. "On Monolithic Silicon Array Detectors for Small-Field Photon Beam Dosimetry" 2018, IEEE Transactions on Nuclear Science, Vol. 65(9), 8421655, pp.2640-2649
69. Biasi, G., **Petasecca**, M., Guatelli, S., Martin, E.A., Grogan, G., Hug, B., Lane, J., Perevertaylo, V., Kron, T., Rosenfeld, A.B. "CyberKnife® fixed cone and Iris™ defined small radiation fields: Assessment with a high-resolution solid-state detector array", 2018, Journal of Applied Clinical Medical Physics, Vol. 19(5), pp.547-557
70. Tran L.T., Bolst D., Guatelli S., Biasi G., Fazzi A., Sagia E., Prokopovich D.A., Reinhard M.I., Keat Y.C., **Petasecca** M., Lerch M.L.F., Pola A., Agosteo S., Matsufuji N., Jackson M., Rosenfeld A.B. High spatial resolution microdosimetry with monolithic ΔE -E detector on 12C beam: Monte Carlo simulations and experiment (2018) NIM A 887, 70-80
71. Debrot E., Newall M., Guatelli S., **Petasecca** M., Matsufuji N., Rosenfeld A.B. A silicon strip detector array for energy verification and quality assurance in heavy ion therapy (2018) Medical Physics 45(2), 953-962
72. Biasi G., **Petasecca** M., Guatelli S., Hardcastle N., Carolan M., Perevertaylo V., Kron T., Rosenfeld A.B. A novel high-resolution 2D silicon array detector for small field dosimetry with FFF photon beams (2018) Physica Medica 45, 117-126
73. Tran L.T., Chartier L., Prokopovich D.A., Bolst D., Povoli M., Summanwar A., Kok A., Pogossova A., **Petasecca** M., Guatelli S., Reinhard M.I., Lerch M., Nancarrow M., Matsufuji N., Jackson M., Rosenfeld A.B. Thin Silicon Microdosimeter Utilizing 3-D MEMS Fabrication Technology: Charge Collection Study and Its Application in Mixed Radiation Fields (2018) IEEE Transactions on Nuclear Science 65(1), 8089762, 467-472
74. Carrara M., Cutajar D., Alnaghy S., Espinoza A., Romanyukha A., Presilla S., Tenconi C., Cerrotta A., Fallai C., Safavi-Naeini M., **Petasecca** M., Kejda A., Lerch M., Corde S., Jackson M., Howie A., Bucci J., Rosenfeld A.B. Semiconductor real-time quality assurance dosimetry in brachytherapy (2018) Brachytherapy 17(1), 133-145
75. Archer J., Li E., **Petasecca** M., Dipuglia A., Cameron M., Stevenson A., Hall C., Hausermann D., Rosenfeld A., Lerch M. X-ray microbeam measurements with a high resolution scintillator fibre-optic dosimeter (2017) Scientific Reports 7(1), 12450
76. Romanyukha A.A., Cunningham A.C., George S.P., Guatelli S., **Petasecca** M., Rosenfeld A.B., Roberts R.G. Deriving spatially resolved beta dose rates in sediment using the Timepix pixelated detector (2017) Radiation Measurements 106, 483-490
77. Utitsarn K., Alrowaili Z.A., Stansook N., **Petasecca** M., Carolan M., Perevertaylo V.L., Lerch M., Rosenfeld A. Impact of a monolithic silicon detector operating in transmission mode on clinical photon beams 2017 Physica Medica 43, 114-119
78. Bolst D., Tran L.T., Chartier L., Prokopovich D.A., Pogossova A., Guatelli S., Reinhard M.I., **Petasecca** M., Lerch M.L.F., Matsufuji N., Perevertaylo V.L., Fleta C., Pellegrini G., Jackson M., Rosenfeld A.B., RBE study using solid state microdosimetry in heavy ion therapy 2017 Radiation Measurements 106, 512-518
79. Carrara M., Tenconi C., Mazzeo D., Romanyukha A., Borroni M., Pignoli E., Cutajar D., **Petasecca** M., Lerch M., Bucci J., Gambarini G., Cerrotta A., Fallai C., Rosenfeld A. Study of the correlation between rectal wall in vivo dosimetry performed with MOSkins and implant modification during TRUS-guided HDR prostate brachytherapy 2017 Radiation Measurements 106, 385-390
80. Fournier P., Cornelius I., Dipuglia A., Cameron M., Davis J.A., Cullen A., **Petasecca** M., Rosenfeld A.B., Bräuer-Krisch E., Häusermann D., Stevenson A.W., Perevertaylo V., Lerch M.L.F. X-Tream dosimetry of highly brilliant X-ray microbeams in the MRT hutch of the Australian Synchrotron 2017 Radiation Measurements 106, 405-411
81. Romanyukha A.A., Carrara M., Tenconi C., Mazzeo D., Rossi G., Borroni M., Pignoli E., Cerrotta A., Cutajar D., **Petasecca** M., Lerch M., Bucci J., Rosenfeld A.B. Applications of

- MOSkin dosimeters for quality assurance in gynecological HDR brachytherapy: An in-phantom feasibility study 2017 Radiation Measurements 106, 399-404
82. Merchant A.H., Newall M., Guatelli S., **Petasecca** M., Lerch M., Perevertaylo V., Milluzzo G., Petringa G., Romano F., Cirrone G.A.P., Cuttone G., Jackson M., Rosenfeld A.B. Feasibility study of a novel multi-strip silicon detector for use in proton therapy range verification quality assurance 2017 Radiation Measurements 106, 378-384
 83. Anderson S.E., Furutani K.M., Tran L.T., Chartier L., **Petasecca** M., Lerch M., Prokopovich D.A., Reinhard M., Perevertaylo V.L., Rosenfeld A.B., Herman M.G., Beltran C. Microdosimetric measurements of a clinical proton beam with micrometer-sized solid-state detector 2017 Medical Physics 44(11), 6029-6037
 84. Gracanin V., Guatelli S., Cutajar D., Cornelius I., Tran L.T., Bolst D., Preston R., Gupta R., Yuen J., **Petasecca** M., Lerch M., Prevertaylo V., Rosenfeld A. A convenient verification method of the entrance photo-neutron dose for an 18 MV medical linac using silicon p-i-n diodes 2017 Radiation Measurements 106, 391-398
 85. Tran L.T., Chartier L., Bolst D., Pogossov A., Guatelli S., **Petasecca** M., Lerch M.L.F., Prokopovich D.A., Reinhard M.I., Clasio B., Depauw N., Kooy H., Flanz J.B., McNamara A., Paganetti H., Beltran C., Furutani K., Perevertaylo V.L., Jackson M., Rosenfeld A.B. Characterization of proton pencil beam scanning and passive beam using a high spatial resolution solid-state microdosimeter 2017 Medical Physics 44(11), 6085-6095
 86. Archer J., Madden L., Li E., Carolan M., **Petasecca** M., Metcalfe P., Rosenfeld A. Temporally separating Cherenkov radiation in a scintillator probe exposed to a pulsed X-ray beam 2017 Physica Medica 42, 185-188
 87. Vicoroski N., Espinoza A., Duncan M., Oborn B.M., Carolan M., Metcalfe P., Menichelli D., Perevertaylo V.L., Lerch M.L.F., Rosenfeld A.B., **Petasecca** M. Development of a silicon diode detector for skin dosimetry in radiotherapy 2017 Medical Physics 44(10), 5402-5412
 88. Wroe A.J., Mcauley G., Teran A.V., Wong J., **Petasecca** M., Lerch M., Slater J.M., Rosenfeld A.B. Initial testing of a pixelated silicon detector prototype in proton therapy 2017 Journal of Applied Clinical Medical Physics 18(5), 315-324
 89. Carrara M., Romanyukha A., Tenconi C., Mazzeo D., Cerrotta A., Borroni M., Cutajar D., **Petasecca** M., Lerch M., Bucci J., Richetti A., Presilla S., Fallai C., Gambarini G., Pignoli E., Rosenfeld A. Clinical application of MOSkin dosimeters to rectal wall in vivo dosimetry in gynecological HDR brachytherapy 2017 Physica Medica 41, 5-12
 90. Stansook N., Utitsarn K., **Petasecca** M., Newall M.K., Duncan M., Nitschke K., Carolan M., Metcalfe P., Lerch M.L.F., Perevertaylo V.L., Tomé W.A., Rosenfeld A.B. Technical Note: Angular dependence of a 2D monolithic silicon diode array for small field dosimetry: Angular 2017 Medical Physics 44(8), 4313-4321
 91. Utitsarn K., Alrowaili Z.A., Stansook N., Lerch M., **Petasecca** M., Carolan M., Rosenfeld A. Optimisation of output factor measurements using the Magic Plate 512 silicon dosimeter array in small megavoltage photon fields 2017 Journal of Physics: Conference Series 777(1), 12022
 92. Würfl M., Reinhardt S., Rosenfeld A., **Petasecca** M., Lerch M., Tran L., Karsch S., Assmann W., Schreiber J., Parodi K. Experimental studies with two novel silicon detectors for the development of time-of-flight spectrometry of laser-accelerated proton beams 2017 Journal of Physics: Conference Series 777(1), 12018
 93. Stansook N., **Petasecca** M., Utitsarn K., Newall M., Metcalfe P., Carolan M., Lerch M., Rosenfeld A.B. The angular dependence of a two dimensional monolithic detector array for dosimetry in small radiation fields 2017 Journal of Physics: Conference Series 777(1), 12020
 94. Lerch M.L.F., Dipuglia A., Cameron M., Fournier P., Davis J., **Petasecca** M., Cornelius I., Perevertaylo V., Rosenfeld A.B. New 3D Silicon detectors for dosimetry in Microbeam Radiation Therapy 2017 Journal of Physics: Conference Series 777(1), 12009

95. Newall M.K., **Petasecca M.**, Duncan M., Fuduli I., Shukaili K.A., Booth J.T., Keall P., Corde S., Pereveratylo V., Lerch M., Rosenfeld A.B. Innovative detectors for quality assurance dosimetry in SBRT of stationary and movable targets 2017 Journal of Physics: Conference Series 777(1), 12014
96. Metcalfe P., Alnaghy S.J., Newall M., Gargett M., Duncan M., Liney G., Begg J., Oborn B., **Petasecca M.**, Lerch M., Rosenfeld A. Introducing dynamic dosimaging: Potential applications for MRI-linac 2017 Journal of Physics: Conference Series 777(1), 12007
97. Chartier L., Tran L.T., Bolst D., Pogossov A., Guatelli S., **Petasecca M.**, Lerch M., Prokopovich D., Reinhard M., Perevertaylo V., Jackson M., Matsufuji N., Rosenfeld A.B. New silicon microdosimetry probes for RBE and biological dose studies using stationary and movable targets in 12C ion therapy 2017 Journal of Physics: Conference Series 777(1), 12019
98. Shukaili K.A., **Petasecca M.**, Newall M., Espinoza A., Perevertaylo V.L., Corde S., Lerch M., Rosenfeld A.B. A 2D silicon detector array for quality assurance in small field dosimetry: DUO: 2017 Medical Physics 44(2), 628-636
99. Alnaghy S., Cutajar D.L., Bucci J.A., Enari K., Safavi-Naeini M., Favoino M., Tartaglia M., Carriero F., Jakubek J., Pospisil S., Lerch M., Rosenfeld A.B., **Petasecca M.** BrachyView: Combining LDR seed positions with transrectal ultrasound imaging in a prostate gel phantom 2017 Physica Medica 34, 55-64
100. Davis J.A., Ganesan K., Prokopovich D.A., **Petasecca M.**, Lerch M.L.F., Jamieson D.N., Rosenfeld A.B. A 3D lateral electrode structure for diamond based microdosimetry 2017 Applied Physics Letters 110(1), 13503
101. Wu'rl M., Englbrecht F., Lehrack S., Haffa D., Kreuzer C., Lindner F.H., Ro'sch T.F., Reinhardt S., Karsch S., Assmann W., Tran L.T., **Petasecca M.**, Lerch M., Schreiber J., Rosenfeld A., Parodi K. Development of TOF-spectrometry of laser-accelerated proton pulses using silicon microdosimeters 2017 Optics InfoBase Conference Papers Part F81-EQEC 2017
102. Alnaghy S.J., Gargett M., Liney G., **Petasecca M.**, Begg J., Espinoza A., Newall M.K., Duncan M., Holloway L., Lerch M.L.F., Lazea M., Rosenfeld A.B., Metcalfe P. Initial experiments with gel-water: towards MRI-linac dosimetry and imaging 2016 Australasian Physical and Engineering Sciences in Medicine 39 4 921 932
103. Alagoz E., Brauer-Krisch E., Bravin A., Cornelius I., Fournier P., Hansen T.E., Kok A., Lerch M., Monakhov E., Morse J., Pacifico N., **Petasecca M.**, Povoli M., Requard H., Rozenfeld A.D., Salome M., Sandaker H., Stugu B. Multi-strip silicon sensors for beam array monitoring in micro-beam radiation therapy 2016 Physica Medica 32(12), 1795-1800
104. Jarema T., Cutajar D., Weaver M., **Petasecca M.**, Lerch M., Kejda A., Rosenfeld A. Dose verification of eye plaque brachytherapy using spectroscopic dosimetry 2016 Australasian Physical and Engineering Sciences in Medicine 39 3 627 632
105. Fournier P., Crosbie J.C., Cornelius I., Berkvens P., Donzelli M., Clavel A.H., Rosenfeld A.B., **Petasecca M.**, Lerch M.L.F., Bräuer-Krisch E. Absorbed dose-to-water protocol applied to synchrotron-generated x-rays at very high dose rates 2016 Physics in Medicine and Biology 61(14), N349-N361
106. Alnaghy S., Safavi-Naeini M., Franklin D.R., Han Z., Cutajar D.L., **Petasecca M.**, Lerch M., Rosenfeld A.B. Analytical Modelling and Simulation of Single and Double Cone Pinholes for Real-Time In-Body Tracking of an HDR Brachytherapy Source 2016 IEEE Transactions on Nuclear Science 63(3), 7497730, 1375-1385
107. Porumb C.S., Aldosari A.H., Fuduli I., Cutajar D., Newall M., Metcalfe P., Carolan M., Lerch M.L.F., Perevertaylo V.L., Rosenfeld A.B., **Petasecca M.** Characterisation of

- Silicon Diode Arrays for Dosimetry in External Beam Radiation Therapy 2016 IEEE Transactions on Nuclear Science 63(3), 7469356, 1808-1817
108. Alnaghy S., Loo K.J., Cutajar D.L., Jalayer M., Tenconi C., Favoino M., Rietti R., Tartaglia M., Carriero F., Safavi-Naeini M., Bucci J., Jakubek J., Pospisil S., Zaider M., Lerch M.L.F., Rosenfeld A.B., **Petasecca M.** BrachyView: Multiple seed position reconstruction and comparison with CT post-implant dosimetry 2016 Journal of Instrumentation 11(5), P05002
 109. Porumb C.S., Davies J.B., Perevertaylo V., Rosenfeld A.B., **Petasecca M.** Characterisation of a cobalt-60 small-beam animal irradiator using a realtime silicon pixelated detector 2016 Journal of Instrumentation 11(4), P04014
 110. Alrowaili Z.A., Lerch M.L., **Petasecca M.**, Carolan M.G., Metcalfe P.E., Rosenfeld A.B. Beam perturbation characteristics of a 2D transmission silicon diode array, Magic Plate 2016 Journal of applied clinical medical physics 17(2), 5932
 111. Alrowaili Z.A., Lerch M.L.F., **Petasecca M.**, Carolan M.G., Metcalfe P.E., Rosenfeld A.B. Beam perturbation characteristics of a 2D transmission silicon diode array, magic plate 2016 Journal of Applied Clinical Medical Physics 17(2), 85-98
 112. Safari M.J., Wong J.H.D., Kadir K.A.A., Thorpe N.K., Cutajar D.L., **Petasecca M.**, Lerch M.L.F., Rosenfeld A.B., Ng K.H. Real-time eye lens dose monitoring during cerebral angiography procedures 2016 European Radiology 26(1), 79-86
 113. Fournier P., Cornelius I., Donzelli M., Requardt H., Nemoz C., **Petasecca M.**, Bräuer-Krisch E., Rosenfeld A., Lerch M. X-Tream quality assurance in synchrotron X-ray microbeam radiation therapy 2016 Journal of Synchrotron Radiation 23, 1180-1190
 114. Carrara M., Tenconi C., Rossi G., Borroni M., Cerrotta A., Grisotto S., Cusumano D., Pappalardi B., Cutajar D., **Petasecca M.**, Lerch M., Gambarini G., Fallai C., Rosenfeld A., Pignoli E. In vivo rectal wall measurements during HDR prostate brachytherapy with MOSkin dosimeters integrated on a trans-rectal US probe: Comparison with planned and reconstructed doses 2016 Radiotherapy and Oncology 118(1), 148-153
 115. Chartier L., Tran L.T., Bolst D., Prokopovich D.A., Reinhard M.I., **Petasecca M.**, Lerch M., Povoli M., Kok A., Matsufuji N., Nancarrow M., Rosenfeld A.B. Characterization of a Large Area Thinned Silicon Microdosimeter for Space and Particle Therapy 2015 IEEE Transactions on Nuclear Science 62(6), 7348742, 3003-3011
 116. Safavi-Naeini M., Han Z., Alnaghy S., Cutajar D., **Petasecca M.**, Lerch M.L.F., Franklin D.R., Bucci J., Carrara M., Zaider M., Rosenfeld A.B. BrachyView, a novel in-body imaging system for HDR prostate brachytherapy: Experimental evaluation 2015 Medical Physics 42(12), 7098-7107
 117. Tran L.T., Chartier L., Bolst D., Prokopovich D.A., Guatelli S., Nancarrow M., Reinhard M.I., **Petasecca M.**, Lerch M.L.F., Pereverlaylo V.L., Matsufuji N., Hinde D., Dasgupta M., Stuchbery A., Jackson M., Rosenfeld A.B. 3D Silicon Microdosimetry and RBE Study Using ^{12}C Ion of Different Energies 2015 IEEE Transactions on Nuclear Science 62(6), 7348797, 3027-3033
 118. Povoli M., Alagoz E., Bravin A., Cornelius I., Bräuer-Krisch E., Fournier P., Hansen T.E., Kok A., Lerch M., Monakhov E., Morse J., **Petasecca M.**, Requardt H., Rosenfeld A.B., Röhrich D., Sandaker H., Salomé M., Stugu B. Thin silicon strip detectors for beam monitoring in Micro-beam Radiation Therapy 2015 Journal of Instrumentation 10(11), P11007
 119. Alrowaili Z.A., Lerch M.L.F., Carolan M., Fuduli I., Porumb C., **Petasecca M.**, Metcalfe P., Rosenfeld A.B. 2D mapping of the MV photon fluence and 3D dose reconstruction in real time for quality assurance during radiotherapy treatment 2015 Journal of Instrumentation 10(9), P09019

120. Bräuer-Krisch E., Adam J.-F., Alagoz E., Bartzsch S., Crosbie J., DeWagter C., Dipuglia A., Donzelli M., Doran S., Fournier P., Kalef-Ezra J., Kock A., Lerch M., McErlean C., Oelfke U., Olko P., **Petasecca M.**, Povoli M., Rosenfeld A., Siegbahn E.A., Sporea D., Stugu B. Medical physics aspects of the synchrotron radiation therapies: Microbeam radiation therapy (MRT) and synchrotron stereotactic radiotherapy (SSRT) 2015 *Physica Medica* 31(6), 568-583
121. **Petasecca M.**, Alhujaili S., Aldosari A.H., Fuduli I., Newall M., Porumb C.S., Carolan M., Nitschke K., Lerch M.L.F., Kalliopuska J., Perevertaylo V., Rosenfeld A.B. Angular independent silicon detector for dosimetry in external beam radiotherapy 2015 *Medical Physics* 42(8), 4708-4718
122. **Petasecca M.**, Newall M.K., Booth J.T., Duncan M., Aldosari A.H., Fuduli I., Espinoza A.A., Porumb C.S., Guatelli S., Metcalfe P., Colvill E., Cammarano D., Carolan M., Oborn B., Lerch M.L.F., Perevertaylo V., Keall P.J., Rosenfeld A.B. MagicPlate-512: A 2D silicon detector array for quality assurance of stereotactic motion adaptive radiotherapy 2015 *Medical Physics* 42(6), 2992-3004
123. Tran L.T., Chartier L., Prokopovich D.A., Reinhard M.I., **Petasecca M.**, Guatelli S., Lerch M.L.F., Perevertaylo V.L., Zaider M., Matsufuji N., Jackson M., Nancarrow M., Rosenfeld A.B. 3D-mesa 'bridge' silicon microdosimeter: Charge collection study and application to rbe studies in 12rm c radiation therapy 2015 *IEEE Transactions on Nuclear Science* 62(2), 7042353, 504-511
124. Espinoza A., **Petasecca M.**, Fuduli I., Howie A., Bucci J., Corde S., Jackson M., F. Lerch M.L., Rosenfeld A.B. The evaluation of a 2D diode array in "magic phantom" for use in high dose rate brachytherapy pretreatment quality assurance 2015 *Medical Physics* 42(2), 663-673
125. Tran L.T., Prokopovich D.A., Guatelli S., **Petasecca M.**, Lerch M.L.F., Reinhard M.I., Rosenfeld A.B. 3D bridge microdosimeter: Charge collection study and application to RBE studies in 12C radiation therapy 2015 *Journal and Proceedings of the Royal Society of New South Wales* 148 455-456 44 51
126. Tran L.T., Prokopovich D.A., **Petasecca M.**, Lerch M.L.F., Fleta C., Pellegrini G., Guardiola C., Reinhard M.I., Rosenfeld A.B. Ultra-thin 3-D detector: Charge collection characterization and application for microdosimetry 2014 *IEEE Transactions on Nuclear Science* 61(6), 6966812, 3472-3478
127. Davis J.A., Ganesan K., Alves A.D.C., Prokopovich D.A., Guatelli S., **Petasecca M.**, Lerch M.L.F., Jamieson D.N., Rosenfeld A.B. Characterization of an alternative diamond based microdosimeter prototype 2014 *IEEE Transactions on Nuclear Science* 61(6), 6926877, 3479-3484
128. Han Z., Safavi-Naeini M., Alnaghy S., Cutajar D.L., Guatelli S., **Petasecca M.**, Franklin D.R., Malaroda A., Carrara M., Bucci J., Zaider M., Lerch M.L.F., Rosenfeld A.B. Radiation dose enhancement at tissue-tungsten interfaces in HDR brachytherapy 2014 *Physics in Medicine and Biology* 59(21), 6659-6671
129. Fuduli I., Porumb C., Espinoza A.A., Aldosari A.H., Carolan M., Lerch M.L.F., Metcalfe P., Rosenfeld A.B., **Petasecca M.** A comparative analysis of multichannel Data Acquisition Systems for quality assurance in external beam radiation therapy 2014 *Journal of Instrumentation* 9(6), T06003
130. Bartzsch S., Lerch M., **Petasecca M.**, Oelfke U., Bräuer-Krisch E. Influence of polarization and a source model for dose calculation in MRT 2014 *Medical Physics* 41(4), 41703
131. Alshaikh S., Carolan M., **Petasecca M.**, Lerch M., Metcalfe P., Rosenfeld A. Direct and pulsed current annealing of p-MOSFET based dosimeter: The "MOSkin" 2014 *Australasian Physical and Engineering Sciences in Medicine* 37 2
311 319

132. Fuduli I., Newall M.K., Espinoza A.A., Porumb C.S., Carolan M., Lerch M.L.F., Metcalfe P., Rosenfeld A.B., **Petasecca M.** Multichannel Data Acquisition System comparison for Quality Assurance in external beam radiation therapy 2014 Radiation Measurements 71, 338-341
133. Tran L.T., Prokopovich D.A., Lerch M.L.F., **Petasecca M.**, Siegele R., Reinhard M.I., Perevertaylo V., Rosenfeld A.B. Development of a large-area silicon α -particle detector 2014 Applied Radiation and Isotopes 92, 96-101
134. Weaver M., **Petasecca M.**, Cutajar D.L., Lerch M.L.F., De Geronimo G., Pinelli D.A., Cullen A.J., Prokopovich D.A., Perevertaylo V.L., Rosenfeld A.B. Panoptes: Calibration of a dosimetry system for eye brachytherapy 2014 Radiation Measurements 71, 310-314
135. Davis J.A., Guatelli S., **Petasecca M.**, Lerch M.L.F., Reinhard M.I., Zaider M., Ziegler J., Rosenfeld A.B. Tissue equivalence study of a novel diamond-based microdosimeter for galactic cosmic rays and solar particle events 2014 IEEE Transactions on Nuclear Science 61(4), 6742631, 1544-1551
136. Loo K.J., Jakubek J., Zemlicka J., **Petasecca M.**, Safavi-Naeini M., Bucci J., Zaider M., Rosenfeld A.B. BrachyView: Feasibility study into the application of Timepix detectors for soft tissue thickness imaging in prostate brachytherapy treatment 2014 Radiation Measurements 71, 329-332
137. Tran L.T., Prokopovich D.A., **Petasecca M.**, Lerch M.L.F., Kok A., Summanwar A., Hansen T.-E., Da Via C., Reinhard M.I., Rosenfeld A.B. 3D radiation detectors: Charge collection characterisation and applicability of technology for microdosimetry 2014 IEEE Transactions on Nuclear Science 61(4), 6759760, 1537-1543
138. Tran L.T., Guatelli S., Prokopovich D.A., **Petasecca M.**, Lerch M.L.F., Reinhard M.I., Ziegler J.F., Zaider M., Rosenfeld A.B. A novel silicon microdosimeter using 3D sensitive volumes: Modeling the response in neutron fields typical of aviation 2014 IEEE Transactions on Nuclear Science 61(4), 6742625, 1552-1557
139. Gambarini G., Carrara M., Tenconi C., Mantaut N., Borroni M., Cutajar D., **Petasecca M.**, Fuduli I., Lerch M., Pignoli E., Rosenfeld A. Online in vivo dosimetry in high dose rate prostate brachytherapy with MOSkin detectors: In phantom feasibility study 2014 Applied Radiation and Isotopes 83, 222-226
140. Tenconi C., Carrara M., Borroni M., Cerrotta A., Cutajar D., **Petasecca M.**, Lerch M., Bucci J., Gambarini G., Pignoli E., Rosenfeld A. TRUS-probe integrated MOSkin detectors for rectal wall in vivo dosimetry in HDR brachytherapy: In phantom feasibility study 2014 Radiation Measurements 71, 379-383
141. Aldosari A.H., **Petasecca M.**, Espinoza A., Newall M., Fuduli I., Porumb C., Alshaikh S., Alrowaili Z.A., Weaver M., Metcalfe P., Carolan M., Lerch M.L.F., Perevertaylo V., Rosenfeld A.B. A two dimensional silicon detectors array for quality assurance in stereotactic radiotherapy: MagicPlate-512 2014 Medical Physics 41(9), 91707
142. Davis, J.A., Guatelli, S., **Petasecca, M.**, Lerch, M.L.F., Reinhard, M.I., Zaider, M., Ziegler, J., Rosenfeld, A.B. Tissue equivalence study of a novel diamond-based microdosimeter for galactic cosmic rays and solar particle events 2014 IEEE Transactions on Nuclear Science 61 4 6742631 1544 1551
143. Tran, L.T., Guatelli, S., Prokopovich, D.A., **Petasecca, M.**, Lerch, M.L.F., Reinhard, M.I., Ziegler, J.F., Zaider, M., Rosenfeld, A.B. A novel silicon microdosimeter using 3D sensitive volumes: Modeling the response in neutron fields typical of aviation 2014 IEEE Transactions on Nuclear Science 61 4 6742625 1552 1557
144. Tran, L.T., Prokopovich, D.A., **Petasecca, M.**, Lerch, M.L.F., Kok, A., Summanwar, A., Hansen, T.-E., Da Via, C., Reinhard, M.I., Rosenfeld, A.B. 3D radiation detectors: Charge collection characterisation and applicability of technology for microdosimetry

- 2014 IEEE Transactions on Nuclear Science 61 4 6759760
1537 1543
145. Li, K., Safavi-Naeini, M., Franklin, D.R., **Petasecca**, M., Guatelli, S., Rosenfeld, A.B., Hutton, B.F., Lerch, M.L.F. A feasibility study of PETiPIX: An ultra high resolution small animal PET scanner 2013 Journal of Instrumentation 8 12 P12004
146. Espinoza, A., Beeksma, B., **Petasecca**, M., Fuduli, I., Porumb, C., Cutajar, D., Corde, S., Jackson, M., Lerch, M.L.F., Rosenfeld, A.B. The feasibility study and characterization of a two-dimensional diode array in "magic phantom" for high dose rate brachytherapy quality assurance 2013 Medical Physics 40 11 111702
147. Aldosari, A.H., Espinoza, A., Robinson, D., Fuduli, I., Porumb, C., Alshaikh, S., Carolan, M., Lerch, M.L.F., Perevertaylo, V., Rosenfeld, A.B., **Petasecca**, M. Characterization of an innovative p-type epitaxial diode for dosimetry in modern external beam radiotherapy 2013 IEEE Transactions on Nuclear Science 60 6 6678239 4705 4712
148. Safavi-Naeini, M., Han, Z., Cutajar, D., Guatelli, S., **Petasecca**, M., Lerch, M.L.F., Franklin, D.R., Jakubek, J., Pospisil, S., Bucci, J., Zaider, M., Rosenfeld, A.B. BrachyView, A novel inbody imaging system for HDR prostate brachytherapy: Design and Monte Carlo feasibility study 2013 Medical Physics 40 7 71715
149. **Petasecca**, M., Loo, K.J., Safavi-Naeini, M., Han, Z., Metcalfe, P.E., Meikle, S., Pospisil, S., Jakubek, J., Bucci, J.A., Zaider, M., Lerch, M.L.F., Qi, Y., Rosenfeld, A.B. BrachyView: Proof-of-principle of a novel in-body gamma camera for low dose-rate prostate brachytherapy 2013 Medical Physics 40 4 41709
150. Livingstone, J., Prokopovich, D.A., Tran, L.T., Guatelli, S., **Petasecca**, M., Lerch, M.L.F., Reinhard, M.I., Perevertaylo, V.L., Ziegler, J.F., Zaider, M., Rosenfeld, A.B. Charge collection in n-SOI planar microdosimeters 2013 IEEE Transactions on Nuclear Science 60 6 6661447 4289 4296
151. Davis, J.A., Ganesan, K., Alves, A.D.C., Guatelli, S., **Petasecca**, M., Livingstone, J., Lerch, M.L.F., Prokopovich, D.A., Reinhard, M.I., Siegele, R.N., Praver, S., Jamieson, D., Kuncic, Z., Pisacane, V.L., Dicello, J.F., Ziegler, J., Zaider, M., Rosenfeld, A.B. Characterization of a novel diamond-based microdosimeter prototype for radioprotection applications in space environments 2012 IEEE Transactions on Nuclear Science 59 6 6338315 3110 3116
152. **Petasecca**, M., Cullen, A., Fuduli, I., Espinoza, A., Porumb, C., Stanton, C., Aldosari, A.H., Bräuer-Krisch, E., Requardt, H., Bravin, A., Perevertaylo, V., Rosenfeld, A.B., Lerch, M.L.F. X-tream: A novel dosimetry system for synchrotron microbeam radiation therapy 2012 Journal of Instrumentation 7 7 P07022
153. Wong, J.H.D., Fuduli, I., Carolan, M., **Petasecca**, M., Lerch, M.L.F., Perevertaylo, V.L., Metcalfe, P., Rosenfeld, A.B. Characterization of a novel two dimensional diode array the magic plate as a radiation detector for radiation therapy treatment 2012 Medical Physics 39 5 2544 2558
154. Livingstone, J., Prokopovich, D.A., Lerch, M.L.F., **Petasecca**, M., Reinhard, M.I., Yasuda, H., Zaider, M., Ziegler, J.F., Pisacane, V.L., Dicello, J.F., Perevertaylo, V.L., Rosenfeld, A.B. Large area silicon microdosimeter for dosimetry in high LET space radiation fields: Charge collection study 2012 IEEE Transactions on Nuclear Science 59 6 6329464 3126 3132
155. Affolder, A., [...], Zorzi, N. Silicon detectors for the sLHC 2011 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 658 1 11 16

156. Wong, J.H.D., Cutajar, D., Lerch, M.L.F., **Petasecca**, M., Knittel, T., Carolan, M., Perevertaylo, V.L., Metcalfe, P., Rosenfeld, A.B. From HEP to medical radiation dosimetry - The silicon strip detector dose magnifying glass 2011 Radiation Measurements 46 12 1615 1618
157. Wong, J.H.D., Knittel, T., Downes, S., Carolan, M., Lerch, M.L.F., **Petasecca**, M., Perevertaylo, V.L., Metcalfe, P., Jackson, M., Rosenfeld, A.B. The use of a silicon strip detector dose magnifying glass in stereotactic radiotherapy QA and dosimetry 2011 Medical Physics 38 3 1226 1238
158. Wong, J.H.D., Hardcastle, N., Tom, W.A., Bayliss, A., Tolakanahalli, R., Lerch, M.L.F., **Petasecca**, M., Carolan, M., Metcalfe, P., Rosenfeld, A.B. Independent quality assurance of a helical tomotherapy machine using the dose magnifying glass 2011 Medical Physics 38 4 2256 2264
159. Wong, J.H.D., Carolan, M., Lerch, M.L.F., **Petasecca**, M., Khanna, S., Perevertaylo, V.L., Metcalfe, P., Rosenfeld, A.B. A silicon strip detector dose magnifying glass for IMRT dosimetry 2010 Medical Physics 37 2 427 439
160. Safavi-Naeni, M., Franklin, D.R., Lerch, M.L.F., **Petasecca**, M., Pignatel, G.U., Reinhard, M., Dalla Betta, G.-F., Zorzi, N., Rosenfeld, A.B. Evaluation of silicon detectors with integrated JFET for biomedical applications 2009 IEEE Transactions on Nuclear Science 56 3 5076049 1051 1055
161. **Petasecca**, M., Alpat, B., Ambrosi, G., Azzarello, P., Battiston, R., Ionica, M., Papi, A., Pignatel, G.U., Haino, S. Thermal and electrical characterization of silicon photomultiplier 2008 IEEE Transactions on Nuclear Science 55 3 4545198 1686 1690
162. Safavi-Naeni, M., Lerch, M.L.F., **Petasecca**, M., Pignatel, G.U., Reinhard, M., Rosenfeld, A.B. Evaluation of pixellated, back-sided planar photodetectors for high-resolution imaging instrumentation 2008 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 589 2 259 267
163. **Petasecca**, M., Pignatel, G.U., Moscatelli, F., Passeri, D., Caprai, G. Numerical analysis of thinned silicon detectors 2007 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 572 1 SPEC. ISS. 319 320
164. Carrato, S., Cautero, G., Corsi, F., DallaBetta, G.F., Dragone, A., Fazzi, A., Garibaldi, F., Marzocca, C., **Petasecca**, M., Pignatel, G.U., Stebel, L., Tauro, A., Varoli, V., Zorzi, N. A functionally reconfigurable detector head for scintimammography 2007 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 571 1-2 SPEC. ISS. 369 372
165. Stebel, L., Tommasi, M., Carrato, S., Cautero, G., **Petasecca**, M., Pignatel, G., Marzocca, C., Tauro, A., Dragone, A., Corsi, F., Dalla Betta, G., Fazzi, A., Zorzi, N. Development of a prototype detector for use in scintimammography imaging 2006 Microelectronics Journal 37 12 1598 1609
166. **Petasecca**, M., Moscatelli, F., Passeri, D., Pignatel, G.U. Numerical simulation of radiation damage effects in p-type and n-type FZ silicon detectors 2006 IEEE Transactions on Nuclear Science 53 5 1710302 2971 2976
167. Passeri, D., Marras, A., Placidi, P., **Petasecca**, M., Servoli, L. A laser test system for characterizing CMOS active pixel sensors 2006 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 565 1 144 147
168. **Petasecca**, M., Moscatelli, F., Passeri, D., Pignatel, G.U., Scarpello, C. Numerical simulation of radiation damage effects in p-type silicon detectors 2006 Nuclear Instruments

- and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 563 1 192 195
169. Marras, A., Passeri, D., Matrella, G., Placidi, P., **Petasecca**, M., Servoli, L., Bilei, G.M., Ciampolini, P. Advanced active pixel architectures in standard CMOS technology 2005 IEEE Transactions on Nuclear Science 52 5 III 1869 1872
170. Morganti, E., Fuduli, I., Montefusco, A., **Petasecca**, M., Pignatel, G.U. SPICE modelling and design optimization of micropumps 2005 International Journal of Environmental Analytical Chemistry 85 9-Nov 687 698
171. **Petasecca**, M., Moscatelli, F., Pignatel, G.U. Analysis and simulation of charge collection efficiency in silicon thin detectors 2005 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 546 1-Feb 291 295
172. Moll, M., [...], Zorzi, N. Development of radiation tolerant semiconductor detectors for the Super-LHC 2005 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 546 1-Feb 99 107
173. Bruzzi, M., [...], Zorzi, N. Radiation-hard semiconductor detectors for SuperLHC 2005 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 541 1-Feb 189 201
174. Passeri, D., Placidi, P., **Petasecca**, M., Matrella, G., Marras, A., Ciampolini, P., Bilei, G.M. Design and test of innovative CMOS pixel detectors 2004 Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 535 1-Feb 421 423
175. Moscatelli, F., Santocchia, A., MacEvoy, B., Hall, G., Passeri, D., **Petasecca**, M., Pignatel, G.U. Comprehensive service simulation modeling of heavily irradiated silicon detectors at cryogenic temperatures 2004 IEEE Transactions on Nuclear Science 51 4 I 1759 1765
176. Passeri, D., Placidi, P., **Petasecca**, M., Ciampolini, P., Matrella, G., Marras, A., Papi, A., Bilei, G.M. Design, fabrication, and test of CMOS active-pixel radiation sensors 2004 IEEE Transactions on Nuclear Science 51 3 III 1144 1149
177. Alpat, B., Battiston, R., Bizzarri, M., Caraffini, D., Fiori, E., Papi, A., **Petasecca**, M., Pontetti, A. The radiation sensitivity mapping of ICs using an IR pulsed laser system 2003 Microelectronics Reliability 43 6 981 984