

# Angela Di Fulvio

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## Education

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- 2008 – 2012     **Ph.D. Nuclear Engineering and Industrial Safety**  
University of Pisa, Pisa, Italy
- 2005 – 2007     **M.Sc. Bioengineering, Electronics and Information curriculum**  
*Summa cum laude* University of Pisa, Pisa, Italy
- 2002 – 2005     **B.Sc. Bioengineering**  
*Summa cum laude* University of Pisa, Pisa, Italy

## Research Experience

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Research related to radiation measurements for nonproliferation, spectrometry and dosimetry applications; neutron detection with superheated emulsions and scintillators; design of electronic readout for radiation detection; Monte Carlo simulations and inference algorithms for spectral unfolding and imaging.

- 2018 – today     **Assistant Professor**  
Department of Nuclear, Plasma, and Radiological Engineering  
University of Illinois at Urbana Champaign, Urbana (IL), US
- 2016 – 2018     **Assistant Research Scientist**  
Department of Nuclear Engineering and Radiological Science  
University of Michigan, Ann Arbor (MI), US
- 2014 – 2016     **Postdoctoral Research Fellow of the Consortium for Verification Technology**  
*Nuclear Non-proliferation, Nuclear Measurements and Monte Carlo Simulations*  
with Prof. S. Pozzi, director of the Consortium for Verification Technology  
Department of Nuclear Engineering and Radiological Science  
University of Michigan, Ann Arbor (MI), US
- 2012 – 2014     **Postdoctoral Research Associate**  
*Superheated emulsions for special nuclear material detection*  
with Prof. F. d’Errico  
Department of Diagnostic Radiology  
Yale University, New Haven (CT), US
- 2008 – 2011     **Dissertation Research**  
*Neutron measurements in the framework of the SPES-BNCT project*  
with Dr. P. Colautti, Prof. R. Roncella, Prof. G. Curzio and Prof. F. d’Errico  
University of Pisa, Pisa, Italy  
Italian Institute of Nuclear Physics, Legnaro National Laboratories, Padova, Italy

## Fellowships

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- Oct – Dec 2011     **Postdoctoral Fellowship**, nuclear and biomedical engineering  
*Feasibility study and design of a frequency selective laser based device*  
University of Pisa, Pisa, Italy  
Radiometrics Srl, Massa, Italy
- May – Sept 2011     **Postdoctoral Fellowship**, nuclear engineering  
*Neutron-induced activation analysis, Monte Carlo simulation and experimental validation*  
University of Pisa, Pisa, Italy  
MBDA, Arlington (VA), US
- 2008 – 2011     **Fellowship for doctoral candidates**, applied physics  
*Neutron measurements in the framework of the SPES-BNCT project*  
University of Pisa, Pisa, Italy  
Italian Institute of Nuclear Physics, Legnaro National Laboratories, Padova, Italy

## Grants and Awards

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### Grants

- 2020     **Multi-Mode Imaging for TRISO-fueled Pebble Identification.** Awarded by the Department of Energy, STTR program.  
\$85,000, 1 year, Co-Principal investigator
- 2019     **Consortium for Verification Technology.** Awarded by the National Nuclear Security Administration.  
\$159,394, 1 year, Co-Principal investigator
- 2016     **Scintillation detector for real-time dosimetry and beam monitoring in proton therapy.** Awarded by the Michigan Memorial Phoenix Project.  
\$25,000, 1 year, Principal investigator
- Hand-held Dual-Particle Imaging for Special Nuclear Material Detection, Localization, and Characterization.** Awarded by the Defense Threat Reduction Agency.  
\$1,000,000, 3 years, Co-Principal investigator

### Awards and Achievements

- 2020     **Safeguards Faculty Development Project at Sandia National Laboratory**, Sandia National Laboratory, April - July 2020
- 2019     **List of teachers ranked as excellent by their students**, College of Engineering, University of Illinois, fall 2019  
**AE3 Collins Scholars Program**, College of Engineering, University of Illinois, 2018-2019  
**First Place Radiation Measurements Presentation Award**, INMM Purdue Conference on Active Nonproliferation, 2019, LaFayette (IN), US
- 2015     **Paul Phelps Grant**, IEEE Nuclear & Plasma Sciences Society
- 2014     **Best Poster Award** at the 7th Annual ARI DHS Grantees Conference, 2014, Leesburg (VA), US
- 2011     **Semifinalist of “Working Capital – Telecom Italia” competition** Business Accelerator program by Telecom Italia, Torino, Italy  
**Phd-Plus entrepreneur award winner** University of Pisa, Pisa, Italy

## Teaching and Mentoring Experience

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### Instructor for the course:

- 2020 **NPRE 397, NPRE Independent Study, Advanced laboratory on physics and technology of nuclear safeguards and nonproliferation**  
University of Illinois at Urbana Champaign, Urbana, IL
- 2018-2020 **NPRE 451, NPRE Nuclear Instrumentation Laboratory**  
University of Illinois at Urbana Champaign, Urbana, IL

### Co-instructor for the course:

- 2016 – 2018 **NERS 425, Application of Radiation**  
University of Michigan, Ann Arbor, US

### Seminars and laboratory sessions for the courses:

- 2015 – 2017 **NERS 590, Nuclear Safeguards**  
University of Michigan, Ann Arbor, US
- 2015 **NERS 586, Applied Radiological Measurements**  
University of Michigan, Ann Arbor, US
- NERS 590, NERS 590, Nuclear safeguards training at Oak Ridge National Laboratories, Oak Ridge (TN), US**  
University of Michigan, Ann Arbor, US
- 2014 – 2016 **NERS 542, Detection Techniques for Nuclear Nonproliferation**  
University of Michigan, Ann Arbor, US
- 2013 **Nuclear Technology in Society**  
Residential College Seminar Series, Yale University, New Haven, CT
- 2010 – 2011 **250II – Bioengineering of Ionizing Radiation**  
University of Pisa, Pisa, Italy
- 2013 **420II – Nuclear Measurements**  
University of Pisa, Pisa, Italy

### Other Teaching Experience

- 2018 Co-instructor of the **First Training Workshop on Real-time Digital Radiation Measurements in FPGA**, University of Michigan, Ann Arbor, US
- 2015 – 2017 Co-instructor of the **MCNP/MCNPX-PoliMi Training Workshop**, University of Michigan, Ann Arbor, US

### Student Advisor

- 2019-2020 **Zhihua Liu**, graduate student, NPPE, UIUC, US  
Research Advisor
- Anthony Lea**, undergraduate student, NPPE, UIUC, US  
Research Advisor
- Amber Hunter**, undergraduate student, NPPE, UIUC, US  
Research Advisor
- Natalie Gaughan**, graduate student, NPPE, UIUC, US  
Research Advisor

## Teaching and Mentoring Experience (continued)

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- Jianxin Zhou**, graduate student, NPPE, UIUC, US  
Research Advisor
- 2018-2020 **Muzammill Siddiqui**, undergraduate student, NPPE, UIUC, US  
Research Advisor
- 2018-2019 **Nathan Bartolomew**, undergraduate student, NPPE, UIUC, US  
Research Advisor
- 2018-2020 **Stuti Surani**, undergraduate student, NPPE, UIUC, US  
Research Advisor
- Daniel Arizaga**, graduate student, NPPE, UIUC, US  
Research Advisor
- Ming Fang**, graduate student, NPPE, UIUC, US  
Research Advisor
- 2018 **Long Zhou**, master student, NPPE, UIUC, US  
Member of the Master thesis committee, Master of Science in Department of Nuclear,  
Plasma, and Radiological Engineering
- Carl Wu**, undergraduate student, EECS, UM, US  
Summer Fellowship Advisor
- 2017 – 2018 **Noora Ban Sul**, master student, NERS, UM, US  
Advisor within the course NERS 499, *Research in Nuclear Engineering and Radiological  
Sciences*
- Haonan Zhu**, master student, EECS, UM, US
- Cheng Sun**, master student, EECS, UM, US
- 2017 **Christopher Swenson**, undergraduate student, senior, NERS, UM, US  
Advisor within the CVT undergraduate fellowship
- Gerrit VanCoeveing**, Ph. D. candidate, NERS, UM, US  
Member of the Ph.D. thesis committee, NERS Faculty representative
- Thomas Batson**, Ph. D. candidate, NERS, UM, US  
Member of the Ph.D. thesis committee, NERS Faculty representative
- Ben Yee**, Ph. D. candidate, NERS, UM, US  
Member of the Ph.D. thesis committee, NERS Faculty representative
- 2016 – 2018 **Nathan Ghia**, undergraduate student, senior, NERS, UM, US  
Advisor within the CVT undergraduate fellowship
- Michael Hua**, undergraduate student, senior, NERS, UM, US  
Advisor within the CVT undergraduate fellowship
- Kyle Beyer**, undergraduate student, senior, Engineering Physics, UM, US  
Advisor within the Summer Undergraduate Research Program and the CVT under-  
graduate fellowship
- 2016 **Lauren Green**, undergraduate student, senior, NERS, UM, US  
Advisor within the CVT undergraduate fellowship
- 2015 – 2018 **Austin Basley**, undergraduate student, senior, Chemical Engineering, UM, US  
Advisor within the Undergraduate Research Opportunity Program and the course  
NERS 399, *Research in Nuclear Engineering and Radiological Sciences*
- 2015 – 2016 **Tyler Jordan**, undergraduate student, senior, NERS,UM, US  
Advisor within the course NERS 499, *Research in Nuclear Engineering and Radiological  
Sciences*

## Teaching and Mentoring Experience (continued)

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- 2015 **Katherine Schneider**, undergraduate student, senior, NERS,UM, US  
Advisor within the course NERS 499, *Research in Nuclear Engineering and Radiological Sciences*
- 2012 – 2013 **Jean Huang**, graduate student, Yale University, US
- 2011 – 2014 **Chiara Romei**, graduate student, University of Pisa, Italy  
Advisor of Ms. Romei's Ph.D. Thesis: *Characterization and development of semiconductor detectors for personal dosimetry and environmental monitoring*
- 2011 **Chiara Romei**, undergraduate student, University of Pisa, Italy  
Advisor of Ms. Romei's M.Sc. Thesis: *Study and characterization of semiconductor detectors for application in mammographic phantoms*
- 2008 **Valentina Fantauzzi**, undergraduate student, University of Pisa, Italy  
Advisor of Ms. Fantauzzi's M.Sc. Thesis: *Development andn optical readout of superheated emulsions for ultrasound dosimetry*
- Lorenzo Cominelli**, undergraduate student, University of Pisa, Italy  
Advisor of Mr. Cominelli's B.Sc. Thesis: *Study and development of a breath frequency meter based on the measurement of chest impedance*

## Patents

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- 2020 **Scintillator-based neutron and gamma-ray dosimeter**, by Pozzi, S., Clarke, S., Flaska, M., Di Fulvio, A.  
*US patent, n. 2115-006379-US-CPC*
- 2016 **System for the evaluation of the efficiency of equipment for diagnostics imaging**, by Della Latta, D., Di Fulvio, A., Chiappino, D., Romei, C.  
*Italian patent, n. FI2014A000082*

## Professional Experience

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### Professional Skills

- Software Tools AutoCAD; Matlab and Simulink toolbox; MCNPX; MCNPX-PoliMi; Labview; Orcad Layout; PSpice; SolidWorks; Office and Open Office suite.
- Programming Languages C/C++; HTML; PHP; ASSEMBLY (FOR AVR ATMEL and PIC MCU architecture); VBA (Visual Basic for Applications) on ACCESS2007.

### Entrepreneurship

- 2013 – today CEO of a company with a focus on software development for diagnostic radiology: **KymaMed Srls**, Massa (MS), Italy

### Professional Societies

- 2020 – today Program Committee of the Topical Group on Instrumentation and Measurement Science of the American Physical Society, member
- 2015 – today Institute of Nuclear Materials Management, member
- 2012 – today IEEE Nuclear and Plasma Sciences Society, member  
European Radiation Dosimetry Group (EURADOS), full member - WG9  
Radiation Protection Dosimetry in Medicine
- 2008 – today Italian Engineer Professionals Register (26/S Class)

## Professional Experience (continued)

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2008 – 2014 Italian Radiation Protection Association (IRPA affiliated), manager of information systems and website for the organization of training events

### Contribution to the Scientific Community

2018 – today Faculty member of the Program in Arms Control and Domestic and International Security at the University of Illinois at Urbana-Champaign

2014 – today Reviewer for the following scientific international journals: Journal of Radiation Research; Annals of Nuclear Energy; Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment; Radiation Measurements; Radiation Protection Dosimetry; Radiation Physics and Chemistry; Review of Scientific Instruments; Physics Letters A.

2020 Short Course Co-chair *2020 Nuclear Science Symposium and Medical Imaging Conference*, Boston, Massachusetts, November 2020

2018 Session chair of the conference: *2018 Symposium on Radiation Measurements and Applications (SORMA XVII)*, Ann Arbor, Michigan, 11-14 June 2018

Session chair of the conference: *International Material Management Society Annual Meeting*, Baltimore, WV, 22-26 July 2018

2017 Session chair of the conference: *2017 Nuclear Science Symposium and Medical Imaging Conference*, Atlanta, Georgia, 21-28 October 2017

2017-2019 Reviewer: *Nuclear Science Symposium and Medical Imaging Conference*

### Invited Talks

July 2020 Di Fulvio, A. *Synergizing imaging, dosimetry, and radiotherapy with machine learning*

MTV Nuclear Engineering Summer School

Department of Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, US, 17 July 2020

Nov 2019 Di Fulvio, A. *Radiation Detection in Nuclear Decommissioning*  
2019 International Academic Seminar on Radioactive Environment and Decommissioning Treatment of Nuclear Facilities  
University of South China, Hengyang, China

Di Fulvio, A. *Disposal and Reclamation of Solid Waste in Uranium Mines*  
2019 International Academic Seminar on Radioactive Environment and Decommissioning Treatment of Nuclear Facilities  
University of South China, Hengyang, China

Mar 2019 Di Fulvio, A. *Neutron Spectrometry for Nuclear Security and Medical Applications*

Graduate Seminar Series

Department of Nuclear Engineering Missouri University of Science and Technology, Rolla, MO, 18 Mar 2019

Dec 2018 Di Fulvio, A. *Radiation Detection Techniques for Safeguards and Non-proliferation Applications*

Program in Arms Control and Domestic and International Security  
Speaker Series

University of Illinois at Urbana Champaign, Urbana, IL, 4 Dec 2018

## Professional Experience (continued)

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- Feb 2018 Di Fulvio, A. *Neutron spectrometry for nuclear security and medical applications*  
University of Illinois at Urbana Champaign, Urbana, IL, 18 Feb 2018
- May 2017 Di Fulvio, A. *New developments in superheated emulsions and organic scintillators for fast neutron detection*  
Physikalisch-Technische Bundesanstalt, Braunschweig, DE, 22 May 2017
- February 2015 Di Fulvio, A. *Application-oriented design of sensors and readout techniques for neutron measurements*  
Department of Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, US, 26 February 2015

## Research Publications

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### Journal Articles (peer-reviewed)

- 1 Altmann, Y., **Di Fulvio, A.**, Paff, M. G., Clarke, S. D., Davies, M., McLaughlin, S., ... Pozzi, S. A. (2020). Expectation-propagation for weak radionuclide identification at radiation portal monitors. *Nature Scientific Reports*, in press.
- 2 Fang, M., Altmann, Y., Salvatori, M., Latta, D. D., & Fulvio, A. D. (2020). Image reconstruction methods for simulated passive gamma emission tomography. *Nature Scientific Reports*, under review.
- 3 Rebei, N., Fang, M., & Fulvio, A. D. (2020). Quantitative and three-dimensional assessment of holdup material. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, in press.
- 4 Steinberger, W., Ruch, M., Giha, N., **Di Fulvio, A.**, Marleau, S., P. Clarke, & Pozzi, S. (2020). Imaging special nuclear material using a handheld dual particle imager. *Scientific Reports*, in press.
- 5 Zhou, J., Leja, A., Salvatori, M., Latta, D. D., & Fulvio, A. D. (2020). Application of monte carlo algorithms to cardiac imaging reconstruction. *Current Pharmaceutical Design*, in press.
- 6 Fang, M., Bartholomew, N., & **Di Fulvio, A.** (2019). Positron annihilation lifetime spectroscopy using fast scintillators and digital electronics. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 943, xx. doi:10.1016/j.nima.2019.162507
- 7 Morishita, Y., **Di Fulvio, A.**, Clarke, S., Kearfott, K., & Pozzi, S. (2019). Organic scintillator-based alpha/beta detector for radiological decontamination. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, in press, 935, 207–213.
- 8 Pozzi, S., Clarke, S., Paff, M., **Di Fulvio, A.**, & Kouzes, R. (2019). Comparative neutron detection efficiency in he-3 proportional counters and liquid scintillators. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 929, 107–112. doi:10.1016/j.nima.2019.03.027
- 9 Shin, T., **Di Fulvio, A.**, Clarke, S., Chichester, D., & Pozzi, S. (2019). Prompt fission neutron anisotropy in low-multiplying subcritical plutonium metal assemblies. *Nuclear Instruments and*

*Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 915, 110–115. doi:10.1016/j.nima.2018.09.085

- 10 Steinberger, W., Ruch, M., **Di Fulvio, A.**, Clarke, S., & Pozzi, S. (2019). Timing performance of organic scintillators coupled to silicon photomultipliers. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 922, 185–192.
- 11 Zhu, H., Altmann, Y., **Di Fulvio, A.**, McLaughlin, S., S., P., & Hero, A. (2019). A hierarchical bayesian approach to neutron spectrum unfolding with organic scintillators. *IEEE Transactions on Nuclear Science*, 1–1. doi:10.1109/TNS.2019.2941317
- 12 Becchetti, F., Torres-Isea, R. O., **Di Fulvio, A.**, Pozzi, S. A., Nattress, J., Jovanovic, I., ... Zaitseva, N. (2018). Deuterated stilbene (stilbene-d12): an improved detector for fast neutrons. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 908, 376–382. doi:10.1016/j.nima.2018.08.021
- 13 D’Errico, F. & **Di Fulvio, A.** (2018). Advanced readout methods for superheated emulsion detectors. *Review of Scientific Instruments*, 89(5),053304. doi:10.1063/1.5017756
- 14 **Di Fulvio, A.**, Shin, T., Basley, A., Swenson, C., Sosa, C., Clarke, S., ... Pozzi, S. (2018). Fast-neutron Multiplicity Counter for Active Measurements of Uranium Oxide Certified Material. *Nuclear Inst. and Methods in Physics Research, A*, 907, 248–257. doi:10.1016/j.nima.2018.05.049
- 15 Fu, C., **Di Fulvio, A.**, Clarke, S., Wentzloff, D. D., Pozzi, S. A., & Kim, H. S. (2018). Artificial Neural Network Algorithms for Pulse Shape Discrimination and Recovery of Piled-up Pulses in Organic Scintillators. *Annals of Nuclear Energy*, 120, 410–421.
- 16 Paff, M., **Di Fulvio, A.**, Altmann, Y., Clarke, S. D., Hero, A., & Pozzi, S. A. (2018). Identification of mixed sources with an organic scintillator-based radiation portal monitor. *Journal of Nuclear Material Management*, 46(4).
- 17 Shin, T. H., **Di Fulvio, A.**, Clarke, S., Chichester, D., & Pozzi, S. (2018). Characterization of prompt fission neutron anisotropy in low-multiplying subcritical plutonium metal assemblies. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, in press.
- 18 Sosa, C., Thompson, S., Chichester, D., Clarke, S., **Di Fulvio, A.**, & Pozzi, S. (2018). Energy resolution experiments of conical organic scintillators and a comparison with geant4 simulations. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 898, 77–84. doi:10.1016/j.nima.2018.04.058
- 19 Becchetti, F., Raymond, R. S., Torres-Isea, R., **Di Fulvio, A.**, Clarke, S., Pozzi, S., & Febraro, M. (2017). Recent developments in deuterated scintillators for neutron measurements at low-energy accelerators. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 874(Supplement C), 72–78. doi:https://doi.org/10.1016/j.nima.2017.08.034
- 20 Beyer, K. A., **Di Fulvio, A.**, Stolarczyk, L., Parol, W., Mojzeszek, N., Kopec, R., ... Pozzi, S. A. (2017). Organic scintillator for real-time neutron dosimetry. *Radiation Protection Dosimetry*, 1–5. doi:10.1093/rpd/ncx255
- 21 Bourne, M., Clarke, S., Paff, M., **Di Fulvio, A.**, Norsworthy, M., & Pozzi, S. (2017). Digital pile-up rejection for plutonium experiments with solution-grown stilbene. *Nuclear Instruments*

- and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 842. doi:10.1016/j.nima.2016.10.023
- 22 Clarke, S., Hamel, M., **Di Fulvio, A.**, & Pozzi, S. (2017b). Neutron and gamma-ray energy reconstruction for characterization of special nuclear material. *Nuclear Engineering and Technology*, 49(6). doi:10.1016/j.net.2017.06.005
- 23 **Di Fulvio, A.**, Becchetti, F., Raymond, R., Torres-Isea, R., Clarke, S., & Pozzi, S. (2017). Characterization of Deuterated-Xylene Scintillator as a Neutron Spectrometer. *IEEE Transactions on Nuclear Science*, 64(7). doi:10.1109/TNS.2016.2629480
- 24 **Di Fulvio, A.**, Shin, T., Jordan, T., Sosa, C., Ruch, M., Clarke, S., ... Pozzi, S. (2017). Passive assay of plutonium metal plates using a fast-neutron multiplicity counter. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 855. doi:10.1016/j.nima.2017.02.082
- 25 Paff, M., **Di Fulvio, A.**, Clarke, S., & Pozzi, S. (2017). Radionuclide identification algorithm for organic scintillator-based radiation portal monitor. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 849. doi:10.1016/j.nima.2017.01.009
- 26 Shin, T., Hua, M., Marcat, M., Chichester, D., Pázsit, I., **Di Fulvio, A.**, ... Pozzi, S. (2017). Neutron multiplicity counting moments for fissile mass estimation in scatter-based neutron detection systems. *Nuclear Science and Engineering*, 188(3). doi:10.1080/00295639.2017.1354591
- 27 Becchetti, F., Raymond, R., Torres-Isea, R., **Di Fulvio, A.**, Clarke, S., Pozzi, S., & Febbraro, M. (2016). Deuterated-xylene (xylene d-10; EJ301D): A new, improved deuterated liquid scintillator for neutron energy measurements without time-of-flight. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 820. doi:10.1016/j.nima.2016.02.058
- 28 **Di Fulvio, A.**, Huang, J., Staib, L., & D'Errico, F. (2015). LET dependence of bubbles evaporation pulses in superheated emulsion detectors. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 784. doi:10.1016/j.nima.2015.01.064
- 29 **Di Fulvio, A.**, Shin, T., Hamel, M., & Pozzi, S. (2015). Digital pulse processing for NaI(Tl) detectors. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 806. doi:10.1016/j.nima.2015.09.080
- 30 Romei, C., **Di Fulvio, A.**, Traino, C., Ciolini, R., & D'Errico, F. (2015). Characterization of a low-cost PIN photodiode for dosimetry in diagnostic radiology. *Physica Medica*, 31(1). doi:10.1016/j.ejmp.2014.11.001
- 31 Mirzajani, N., Ciolini, R., **Di Fulvio, A.**, Esposito, J., & D'Errico, F. (2014). Application of a Bonner sphere spectrometer for the determination of the angular neutron energy spectrum of an accelerator-based BNCT facility. *Applied Radiation and Isotopes*, 88. doi:10.1016/j.apradiso.2013.12.030
- 32 Bedogni, R., Domingo, C., Esposito, A., Gentile, A., García-Fusté, M., De-San-Pedro, M., ... **Di Fulvio, A.** (2013a). Calibration of PADC-based neutron area dosimeters in the neutron field produced in the treatment room of a medical LINAC. *Radiation Measurements*, 50. doi:10.1016/j.radmeas.2012.04.009
- 33 Bedogni, R., Domingo, C., Esposito, A., Gentile, A., García-Fusté, M., De-San-Pedro, M., ... **Di Fulvio, A.** (2013b). Calibration of PADC-based neutron area dosimeters in the neutron

field produced in the treatment room of a medical LINAC. *Radiation Measurements*, 50. doi:10.1016/j.radmeas.2012.04.009

- 34 Bordy, J., Bessieres, I., D'Agostino, E., Domingo, C., D'Errico, F., **Di Fulvio, A.**, ... Vermesse, D. (2013). Radiotherapy out-of-field dosimetry: Experimental and computational results for photons in a water tank. *Radiation Measurements*, 57. doi:10.1016/j.radmeas.2013.06.010
- 35 **Di Fulvio, A.**, Domingo, C., De San Pedro, M., D'Agostino, E., Caresana, M., Tana, L., & D'Errico, F. (2013). Superheated emulsions and track etch detectors for photoneutron measurements. *Radiation Measurements*, 57. doi:10.1016/j.radmeas.2012.11.022
- 36 **Di Fulvio, A.**, Tana, L., Caresana, M., D'Agostino, E., De San Pedro, M., Domingo, C., & D'Errico, F. (2013). Clinical simulations of prostate radiotherapy using BOMAB-like phantoms: Results for neutrons. *Radiation Measurements*, 57. doi:10.1016/j.radmeas.2013.06.012
- 37 Miljanić, S., Bessieres, I., Bordy, J.-M., D'Errico, F., **Di Fulvio, A.**, Kabat, D., ... Harrison, R. (2013). Clinical simulations of prostate radiotherapy using BOMAB-like phantoms: Results for photons. *Radiation Measurements*, 57. doi:10.1016/j.radmeas.2012.12.012
- 38 Ciolini, R., **Di Fulvio, A.**, Piotta, M., Diligenti, A., & D'Errico, F. (2011). A feasibility study of a SiC sandwich neutron spectrometer. *Radiation Measurements*, 46(12). doi:10.1016/j.radmeas.2011.06.071
- 39 D'Errico, F. & **Di Fulvio, A.** (2011). Superheated emulsions for the detection of special nuclear material. *Radiation Measurements*, 46(12). doi:10.1016/j.radmeas.2011.10.017
- 40 D'Errico, F., Ciolini, R., **Di Fulvio, A.**, Reginatto, M., Esposito, J., Ceballos Sánchez, C., & Colautti, P. (2009). Angle and energy differential neutron spectrometry for the SPES BNCT facility. *Applied Radiation and Isotopes*, 67(7-8 SUPPL.). doi:10.1016/j.apradiso.2009.03.035
- 41 D'Errico, F., **Di Fulvio, A.**, Maryański, M., Selici, S., & Torrigiani, M. (2008). Optical readout of superheated emulsions. *Radiation Measurements*, 43(2-6). doi:10.1016/j.radmeas.2008.02.011

## Conference Proceedings

- 1 Fang, M., Bartholomew, N., & **Di Fulvio, A.** (2020). Positron annihilation lifetime spectroscopy using fast scintillators and digital electronics.
- 2 Surani, S., Arizaga, D., & **Di Fulvio, A.** (2019a). Monte Carlo Simulation of Multisphere Neutron Spectrometer based on CLYC detecto. In *Transactions of the 2019 american nuclear society conference*. Minneapolis, MN, USA, Jun. 9 – 13.
- 3 Surani, S., Arizaga, D., & **Di Fulvio, A.** (2019b). Monte Carlo Simulation of Multisphere Neutron Spectrometer based on CLYC detecto. In *Transactions of the 2019 american nuclear society student conference*. Richmond, VA, USA, Apr. 6 – 9.
- 4 **Di Fulvio, A.**, Beyer, K., Shin, T., Giha, N., Clarke, S., & Pozzi, S. (2018). Sipm readout of stilbene crystals for safeguards applications. doi:10.1109/NSSMIC.2017.8532859
- 5 Beyer, K., **Di Fulvio, A.**, & Pozzi, S. (2017). Characterization of Stilbene Scintillation Detectors with Light Guide Coupling and Silicon Photomultiplier Readout. In *Transactions of the 2017 ieee nuclear science symposium*. in press, Atlanta. GA, US, Oct. 21 – 28. Atlanta, GA.
- 6 Clarke, S., **Di Fulvio, A.**, Shin, T., Pozzi, S., Streicher, M., He, Z., ... Enqvist, A. (2017). Advanced Safeguards Systems Development within the Consortium for Verification Technolo. In *Proceedings of the institute of nuclear materials management 58th annual meeting*. Indian Wells, CA, US, July 16 – 20.

- 7 Clarke, S., Hamel, M., **Di Fulvio, A.**, & Pozzi, S. (2017a). Neutron and Gamma-ray Energy Reconstruction for Characterization of Special Nuclear Material. In *Transactions of the 2017 american nuclear society m&c conference*. Jeju, Korea, Apr. 16 – 20.
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