



SCINTILLATOR DETECTORS: from Theory to Applications

(Medicine, Security, High Energy Physics and Engineering)
Serie of seminars and meetings

Lecture:

Basics on Radiation Detection and Nuclear Spectroscopy

May 10th, 2023 at 10.00

Room 160/3 - Faculty of Engineering

Università Politecnica delle Marche, Ancona

[\(Link to follow the seminar on-line\)](#)

This lecture will briefly summarize the state-of-the-art developments in radiation detectors used in Nuclear Medicine instrumentation regarding various detector technologies and designs of different geometries. Preclinical “low cost” imaging systems, very high-resolution research applications (including small-animal imaging), and MR combined systems will also be discussed. Options of new bright scintillators and photodetectors will be mentioned, including co-doped and mixed scintillator materials as well as discrete silicon photomultiplier arrays (SiPMs). Finally, it will be analyzed how the crucial parameters (energy, spatial and timing resolution, sensitivity and injection dose) improved with whole body geometry and time of flight (ToF) techniques.

Prof. Stratos David

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Prof. Stratos David has a first degree in Biomedical Engineering as well as MSc and PhD degrees in Medical Physics from the University of Patras, Greece. He has participated in 13 Greek funded research projects and in one FP7 EU project named NANOTHER. He was awarded with a Post-Doc scholarship programme from the action entitled “Reinforcement of Postdoctoral Researchers”, Greek State Scholarships Foundation (I.K.Y.) for Academic Years 2017-2019. He works as assistant Professor in the Biomedical Engineering department of the University of West Attica located in the capital of Greece, Athens. He is the contact person of the cooperation between the University of West Attica and the Crystal Clear Collaboration (CCC) of CERN (<https://crystalclearcollaboration.web.cern.ch/>). In addition, he has 51 publications in international scientific journals, 2 book chapters, 36 Publications in international conference proceedings and more than 70 poster conference presentations. <https://bme.uniwa.gr/en/profile/sdavid/>

Research areas: Evaluation of single crystal scintillators and phosphors in medical imaging detectors – effect of fluorescent materials on detector performance, Medical device engineering, SPECT and PET Nuclear Medical Imaging detectors, Subtractive resistor circuits, Front end electronics, Molecular imaging technology and applications in Medicine, Novel MR compatible small animal imaging detectors, Instrumentation of dedicated nuclear imaging systems and spectroscopic radiation sensors for homeland security applications.

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