

## **Session Program**

**30 June 2024 to 4 July 2024**

# **25th International Workshop on Radiation Imaging Detectors.**

## ***Poster Session***

FMDUL, Main Auditorium

Main Auditorium of the Faculty of Dental Medicine at the University of Lisbon (Faculdade de Medicina  
Dentária da Universidade de Lisboa)

# Monday 1 July

17:40

## Poster Session: Session 1

### Session |

**Location:** FMDUL, Main Auditorium, Main Auditorium of the Faculty of Dental Medicine at the University of Lisbon (Faculdade de Medicina Dentária da Universidade de Lisboa)

17:40-17:41

### Design and implementation of a ground detection system for HERD-TRD front-end electronics

#### Speaker

Yangzhou SU

17:41-17:42

### Low-cost FPGA-based multi-channel TDC with high resolution and density for time-of-flight detectors

#### Speakers

Xinpeng WANG, Haibo Yang, Yangzhou Su

17:42-17:43

### Development of a common pixel readout electronics for pixel detector

#### Speaker

Mr Wenchao SUN

17:43-17:44

### TCAD Simulation of Stitching for Passive CMOS Strip Detectors

#### Speaker

Marta Baselga

17:44-17:45

### Characterization results of the first full scale HYLITE chip and a small scale front-end module

#### Speaker

Xining Jia

17:45-17:46

### Design of the first full-scale HYLITE, a charge integration pixel detector readout chip for XFEL

#### Speaker

Mujin Li

17:46-17:47

### A High Accuracy CMOS Peak Detection and Holder ASIC for Neutron Detectors

#### Speaker

任佳祿 Jiayi REN

17:47-17:48

### Timepix CdTe Radiation Monitor on board of VZLUSAT-2: Characterizing LEO Space Weather Dynamics

#### Speaker

David Hladík

17:48-17:49

**Airborne Radiation Monitoring System of KAERI and Environmental Radiation Survey in Fukushima****Speaker**

Dr Eunjoong Lee

17:49-17:50

**Metal-Polymer Hybrid Wafer to Wafer Bonding Process Development for Fabrication of Ultra-Thin Low-Mass Hybrid Pixel Detectors****Speaker**

Thomas Fritzsche

17:50-17:51

**Feasibility Study of 3D CNN-Based Angular Positioning of Radioisotope Using 8×8 SiPM array****Speaker**

Mr Wonku Kim

17:51-17:52

**Pragmatic method to minimize the discrepancy of grayscale values of teeth caused by exomass effect in dental CBCT of a small field of view****Speaker**

Soohyun Lee

17:52-17:53

**MLEM-based Image Reconstruction Algorithm for Fast Neutron Scattering Imaging****Speaker**

Ms JIMIN SHIN

17:53-17:54

**Estimation of dose linearity for halide scintillation detectors****Speaker**

Wanook Ji

17:54-17:55

**Detection of radioactive hotspots inside the Fukushima Daiichi Nuclear Power Station Unit 3 reactor building using an optical fiber radiation sensor based on wavelength-resolving analysis****Speaker**

Dr Yuta Terasaka

17:55-17:56

**Development of a novel compact and fast SiPM-based RICH detector for the future ALICE 3 PID system at LHC****Speakers**

Nicola Mazziotta, Roberta Pillera

17:56-17:57

**Performance of the Analog Pixel Test Structure in 65 nm TPSCo CMOS imaging technology for the ALICE ITS3****Speaker**

Chiara Ferrero

17:57-17:58

**ITk Pixel System Test of the ATLAS Experiment**

**Speaker**

Zaza Chubinidze

17:58-17:59

**Machine learning models for single-particle classification with Timepix 3 detectors****Speaker**

Katerina Sykorova

17:59-18:00

**TCAD simulation of 3D silicon sensors for thermal neutron imaging****Speaker**

Jixing Ye

18:00-18:01

**ATLAS ITk Pixel Detector Overview****Speaker**

Niraj Kakoty

18:01-18:02

**Characterisation of analogue MAPS produced in the 65 nm TPSCo process****Speaker**

Eduardo Ploerer

18:02-18:03

**Enhancement of Hybrid Radiation Detector Characteristics through Size Control of MoS<sub>2</sub> Nanocrystals****Speaker**

Chanyeol Lee

18:03-18:04

**Low-dose CT denoising via a hybrid network of transformer and residual dense network****Speaker**

Mr Duhee Jeon

18:04-18:05

**Performance and optics robustness of the ATLAS Tile hadronic calorimeter****Speaker**

Rute Pedro

18:05-18:06

**Feasibility Study on the Development of an Integrated Fast neutron and Gamma ray Radiography System for Material Decomposition****Speaker**

18:06-18:07

**Evolution of the electrical characteristics of the ATLAS ITk strip sensors with HL-LHC radiation exposure range****Speaker**

Javier Fernandez-Tejero

18:07-18:08

**High-Resolution Digital 3D CZT Drift Strip Detectors for Spectroscopic X-ray and Gamma Ray Imaging**

**Speaker**

Prof. Leonardo Abbene

18:08-18:09

**Low beam intensity raster scan measurements with the Timepix3 at CNA****Speaker**

Daniel Prelipcean

18:09-18:10

**Test Beam Results on 3D pixel sensors for the CMS Tracker Upgrade at the High-Luminosity LHC****Speaker**

Clara Lasaosa Garcia

18:10-18:11

**Timepix2-radiation camera for single particle imaging in high count-rate particle therapy****Speaker**

Dr Cristina Oancea

18:11-18:12

**SPHIRD: readout controller and communication protocol - design and implementation****Speaker**

Piotr Otfinowski

18:12-18:13

**Computational microscopy with the PERCIVAL detector system at TwinMic****Speaker**

Dr Francesco Guzzi

18:13-18:14

**SiC MiniPIX-Timepix3 Radiation Camera: detection resolving power to neutrons, ions, protons and electrons****Speaker**

Dr Carlos Granja

18:14-18:15

**Development of the Readout Electronics for the Large Area  $^3\text{He}$  Tube Array Detector in High Pressure Neutron Diffractometer at the China Spallation Neutron Source****Speaker**

Weigang Yin

18:15-18:16

**Characteristic analysis of scintillator and pixel size for ultra-high resolution X-ray imaging in digital flat-panel detectors****Speaker**

Dr Bo Kyung Cha

18:16-18:17

**R&D of a Generic Readout Platform Based on the Modern SoC Architecture for CSNS**

**Speaker**

Li Yu

**18:17-18:18****Development of Automatic Classification Algorithm of Fast Neutron from Gamma-ray in Pulse Shape Discrimination for Organic Plastic Scintillators****Speaker**

Seoyun Jang

**18:18-18:19****Improvement of the sensitivity of Perovskite based photodetector fabricated with n-type conjugated polymers for indirect X-ray detection****Speaker**

Mr Bumjin Park

**18:19-18:20****Numerical Study of beam induced space charge effect in a small TPC with hydrodynamic model****Speaker**

Mr Pralay Kumar das

**18:20-18:21****Particle Monte Carlo codes in SEM****Speaker**

Mitja Majerle

**18:21-18:22****Anatomy of low noise front-end electronics for solid-state particle detectors based on bare-die technology****Speaker**

Robert Macků

**18:22-18:23****Performance and quality control of the first CMS GE2/1 muon production chambers****Speaker**

Abigail Catherine Warden

**18:23-18:24****The ATLAS ITk Strip Detector for the Phase-II LHC Upgrade****Speaker**

Roland Koppenhöfer

**18:24-18:25****The read-out integrated circuit for the high energy resolution X-ray strip detectors****Speaker**

Weronika Zubrzycka

**18:25-18:26****Production and optical characterisation of PET and PEN scintillator samples****Speaker**

Rudnei Machado

**18:26-18:27****X-ray detectors at the MAX IV synchrotron**

**Speaker**

Michele Cascella

18:27-18:28

**Improvement of a hybrid C-arm for interventional X-ray and scintigraphy imaging through new scintillator developments****Speaker**

Marc Snoeyink

18:28-18:29

**Radioactive source localization in 3D using a coded aperture device under near field irradiation with the aid of convolutional neural networks****Speaker**

Dr Ioannis Kaissas

18:29-18:30

**Low Power Design for Medipix Readout Systems****Speaker**

Guilherme Paulino

18:30-18:31

**Development of fine-pitch hybrid silicon pixel detectors with self-trigger function for electron tracking Compton imaging****Speaker**

Mizuki Uenomachi

18:31-18:32

**ATLAS ITk-Pixel DAQ system****Speaker**

Wael Alkakh

18:32-18:33

**X-ray Single-Pixel Imaging with MPGD-based detectors****Speaker**

Matilde Simões

18:33-18:34

**SPECTRUM 1k - An Integrated Circuit for Precise Energy Measurement****Speaker**

Rafal Kleczek

18:34-18:35

**Nuclear fuel imaging using position-sensitive detectors****Speaker**

Santeri Saariokari

18:35-18:36

**Potential of Timepix Hybrid Sensor in 4D-STEM in a Scanning Electron Microscope (SEM)****Speaker**

Petr Hlavenka

18:36-18:37

**Compact multi-channel analyzer for SiPM detectors with real time on-board signal analysis****Speaker**

Mr Patrik Kučera

18:37-18:38

**Spatially resolved XRD using polychromatic fan beam and a hybrid pixel detectors Timepix3****Speaker**

Ondrej Urban

18:38-18:39

**Detective quantum efficiency of a dual-energy photon-counting x-ray detector****Speaker**

Junho Lee

18:39-18:40

**Charge transport dynamics studies of planar GaAs:Cr sensors by laser excitation****Speaker**

Mihaela Bezak

18:40-18:41

**#192 - Upgrade of the CMS Drift Tube electronics for the High Luminosity LHC****Speaker**

Cristina Bedoya

18:41-18:42

**Space radiation characterization in LEO orbit on board of JoeySat OneWeb satellite with miniaturized spacecraft monitor MiniPIX-Timepix3 Space****Speaker**

Lukas Marek

18:42-18:43

**Compensation of temperature dependence on spectrometry of X-rays by MiniPIX Timepix3 SiC Detector****Speaker**

Nikola Kurucová

18:43-18:44

**CZT detector based spectrometer for drone and balloon borne measurements****Speaker**

Timo Eero Hilden

18:44-18:45

**CdTe photon counting detector: a discriminator threshold study****Speakers**

Luca Brombal, Prof. Renata Longo

18:45-18:46

**Development of  $^3\text{He}$  Linear Position-Sensitive Detector for the SANS Instrument at CPHS****Speaker**

Dr Nan Hua

18:46-18:47

**Advancements in assembly and integration of new DSSC detector systems at the European XFEL****Speaker**

David Lomidze



18:47-18:48

**Transimpedance amplifier for LGAD noise measurements: Design and Characterization****Speaker**

Iurii Eremeev

18:48-18:49

**Characterisation of iLGAD sensors on a JUNGFRAU detector in burst mode operation****Speaker**

Nuno Duarte

18:49-18:50

**Development of plastic scintillators for thermal neutron detection****Speaker**

João Luciano Amorim Azevedo

18:50-18:51

**Argon Scintillation in the 160 - 650 nm range****Speaker**

Joana Maria Teixeira

18:51-18:52

**Re-assessment of the air-mediated response in Bi-based perovskite X-ray detectors****Speaker**

Aditya Bhardwaj

19:00

## Wednesday 3 July

14:00

### Poster Session: Session 2

#### Session |

**Location:** FMDUL, Main Auditorium, Main Auditorium of the Faculty of Dental Medicine at the University of Lisbon (Faculdade de Medicina Dentária da Universidade de Lisboa)

14:00-14:01

#### Experimental Validation of Gamma Emission Tomography to Inspect Partial-Defects within the Pressurized Water Reactor-Type Spent Nuclear Fuel

##### Speaker

Hyung-Joo Choi

14:01-14:02

#### A cosmic ray muons imaging system based on bar plastic scintillator detectors

##### Speakers

shikai wang, Haibo Yang

14:02-14:03

#### Model-based scatter correction method for improving image visibility in CBCT with an offset-detector configuration

##### Speaker

JIWON PARK

14:03-14:04

#### Automatic geometry calibration based on metric optimization in stationary computed tomography baggage scanner with 2 pi-angle sparsity

##### Speaker

Mr DUHEE JEON

14:04-14:05

#### Novel sinogram restoration method based on Fourier separation of higher-order harmonics in sparse-view CBCT for improving its reconstruction quality

##### Speaker

Jonghyeok Lee

14:05-14:06

#### Single-exposure material decomposition in digital tomosynthesis using a CdTe-based photon-counting detector: Simulation study

##### Speaker

Soohyun Lee

14:06-14:07

#### Feasibility of scintillators and imaging assessment of a flat-panel X-ray detector with dual-layer structure

##### Speaker

Bo Kyung Cha

14:07-14:08

#### Synthesizing 2D mammographic image from compressed-sensing digital breast tomosynthesis image for reducing imaging dose

**Speaker**

Seohee Han

14:08-14:09

**Triple GEM detectors for the Phase-2 upgrade of the CMS experiment at the LHC****Speaker**

Marco Buonsante

14:09-14:10

**Design and Validation of the DAQ hardware for MAPS based telescope readout****Speaker**

Weigang Yin

14:11-14:12

**Upgrade of the CMS Electromagnetic Calorimeter for High-Luminosity LHC****Speaker**

Chiara Amendola

14:12-14:13

**Parallel CPU and GPU-based connected component algorithms for event building for hybrid pixel detectors****Speaker**

Tomas Celko

14:13-14:14

**Experimental results of the pFREYA16 ASIC for x-ray ptychography in continuous wave light sources****Speaker**

Mr Paolo Lazzaroni

14:14-14:15

**Characterization of silicon Monolithic Stitched Sensors for ALICE ITS3 in view of LHC Run 4****Speaker**

Marius Wilm Menzel

14:15-14:16

**Modulation transfer function and energy response of the new Timepix4 pixel detector****Speaker**

Nina Dimova

14:16-14:17

**Measurement of neutron energy spectrum by ToF technique using triggered MiniPIX-Timepix3 detectors with Si and SiC sensors****Speaker**

Dušan Poklop

14:17-14:18

**Proposed upgrade of the Belle II Vertex Detector with depleted monolithic active pixel sensors****Speaker**

Marika Schwickardi

14:18-14:19

**Functional Tests of the Detector Assembly Demonstration Model of the eXTP Wide Field Monitor: System Description and Results****Speaker**

Matias Antonelli

14:19-14:20

**Characterization of TlBr Gamma Detector Based on Electrical Charge and Cherenkov Light Analysis****Speaker**

Mr Moh Hamdan

14:20-14:21

**ATLAS New Small Wheel Performance Studies with LHC Run3 data****Speaker**

Chiara Arcangeletti

14:21-14:22

**Extending the time-over-threshold calibration of Timepix3 for spatial-resolved ion spectroscopy****Speaker**

Dr Radu-Emanuel Mihai

14:22-14:23

**Response of iLGAD sensors to single X-ray photons absorbed within and close to the gain layer****Speaker**

Jiaguo Zhang

14:23-14:24

**Characterisation and Initial Radiation Measurements of Pixellated LGAD Sensors for Soft X-Ray Spectroscopy using the HEXITEC ASIC****Speaker**

Matt Larkin

14:24-14:25

**55µm-pitch indium bump deposition on MEDIPIX single die without using photolithography****Speaker**

Andreas Schneider

14:25-14:26

**Preparing ATLAS for the High-Luminosity LHC: System Testing and Performance Evaluation of the ITk Strip Detector****Speaker**

Alex Toldaiev

14:26-14:27

**Defect detection and size classification in CdTe detector samples in 3D****Speaker**

Mr Mika Väänänen

14:27-14:28

**A study of particle detectors based on single crystal diamond substrates**

**Speaker**

Bohumír Zařko

14:28-14:29

**Joint cross-talk and Hanbury Brown and Twiss effect measurement with the LinoSPAD2 detector****Speaker**

Mr Sergei Kulkov

14:29-14:30

**Tritium detection in CCDs with machine learning****Speaker**

Ryan Heller

14:30-14:31

**Characterisation of the Charge Transport Properties and Linearity of HF-CdZnTe Material****Speaker**

Max Bishop

14:31-14:32

**All-silicon tracker for a multi-TeV Muon Collider****Speaker**

Nazar Bartosik

14:33-14:34

**Al alloys phases recognition using X-ray transmission****Speaker**

Valentina Vicini

14:34-14:35

**Accelerated radiation hardness qualification of CMOS image sensors****Speaker**

Rob Braan

14:35-14:36

**A Gaseous Compton Camera for Gamma Imaging****Speaker**

Lara Filipa Das Neves Dias Carramate

14:36-14:37

**Innovative structures for improved light collection in argon-based TPCs****Speaker**

André Cortez

14:37-14:38

**A Novel Theoretical Model Framework with Experimental Verification for the 3D CdZnTe Drift Strip Detector****Speaker**

Evangelos Istantiadis

14:39-14:40

**Longevity study of CMS Muon Detector facing the High Luminosity LHC phase****Speaker**

Dayron Ramos Lopez

14:40-14:41

**Multi-channel readout electronics of silicon photomultipliers for plastic scintillating fiber detector****Speaker**

Zibing Wu

14:41-14:42

**Experimental LET characterization with Minipix Timepix3 for quality assurance in proton therapy****Speaker**

Ms Paulina Stasica

14:42-14:43

**Effect of the fiber-optic plate on imaging performance of a CMOS x-ray detector****Speaker**

Seungjun Yoo

14:43-14:44

**Iterative reconstruction methods for limited angle tomography: A comparative study****Speaker**

Seokwon Oh

14:44-14:45

**Design of a Time to Digital Converter for LGAD detector at HIAF complex****Speakers**

Dr Chaojie Zou, Weijia Han

14:45-14:46

**Development of an X-ray backscatter Imaging System for Cargo Inspection****Speakers**

Dr JongWon Park, Jeonghee Lee, Dr Chang Hwy Lim

14:46-14:47

**Enhancing Aerial Mapping with Gamma Radiation Detection: A Study in UAE****Speaker**

Prof. Joaquim Marques Ferreira Dos Santos &lt;jmf@uc.pt&gt;

14:47-14:48

**Development of a Clock and Data Recovery (CDR) ASIC for heavy-ion physics experiments****Speaker**

Mr Xiaomeng Ma

14:48-14:49

**A feasible study of scintillator-based detectors for PCCT with variance Cramer-Rao Lower Bound(CRLB) in basis material decomposition.****Speaker**

He Li

14:49-14:50

**Measurement of Scattering Azimuthal Distribution of Polarized Gamma-Rays in Compton Scattering Using GAGG(Ce) Scintillator**

**Speaker**

Riku Sato

14:50-14:51

**UFERI - hybrid photon-counting pixel detector for diffraction experiments at synchrotrons****Speaker**

Marie Andrae

14:51-14:52

**Peculiarity behaviour of the Inter-pad region in Double Trenched LGAD: Insights from RD50 and AIDAInnova Production Runs****Speaker**

Gordana Lastovicka Medin

14:52-14:53

**Development of a transportable neutron imager for localization of radioactive sources****Speaker**

Ali Murteza ALTINGUN

14:53-14:54

**Improved spectrometry of semi-insulating GaAs detectors by significant thinning detector thickness****Speaker**

Andrea Sagatova

14:54-14:55

**Neutral bremsstrahlung emission spectrum in argon****Speaker**

Dr Carlos Henriques

14:55-14:56

**A direct electron detector for electron microscopy based on EMPIX2 ASIC****Speaker**

Tong Wei

14:56-14:57

**X-ray performance evaluation and structural analysis of the wide-field X-ray monitor with Lobster Eye Optics****Speaker**

Shunsuke Kurosawa

14:57-14:58

**Solid angle compensation in Gas proportional scintillation counters using an annular anode with azimuthal geometry.****Speaker**

Pedro Silva

14:58-14:59

**Conceptual design of TUPI (Timepix-based Ultra-fast Photon Imaging) detector's front-end electronics****Speaker**

Mr Allan Borgato

14:59-15:00

**Timepix2 with a 500  $\mu\text{m}$  thick silicon sensor in adaptive gain mode as a dE/dX spectrometer for relativistic heavy ions****Speaker**

Dr Petr Smolyanskiy

15:00-15:01

**Perceptual Evaluation of Lossy Compression Techniques in Synchrotron Tomography: Bridging Visual and Quantitative Measures****Speaker**

Dr Francesco Guzzi

15:01-15:02

**Development and Characterisation of the HEXITEC 2X6 Detector System for the NXCT****Speaker**

Rhian Mair Wheeler

15:02-15:03

**Advancements in the Silicon Tracking System of the CBM Experiment: Module series production, testing, and operational insights****Speaker**

Dr Adrian Rodríguez Rodríguez

15:03-15:04

**A Methodology for the Timing Performance Optimization of the Pre-amplifier Design in High Energy Physics****Speaker**

Yujing Gan

15:04-15:05

**Characterization of a readout integrated circuit with in-pixel time measurement****Speaker**

Mr Lukasz Kadlubowski

15:05-15:06

**TUPI (Timepix-based Ultra-fast Photon Imaging) Detector****Speaker**

Jean Marie Polli

15:06-15:07

**Study of primary scintillation yield of pure krypton****Speaker**

Rui Daniel Mano

15:07-15:08

**TOFHIR2: The readout ASIC of the CMS Barrel MIP Timing Detector****Speaker**

Giacomo Da Molin

15:07-15:08

**Spectrum Analysis for Identification of Nuclides at Radiological Crime Scene****Speaker**

Ioannis Kaissas



15:08-15:09

**Normalized metal artifact reduction using CNR-based metal segmentation in dental computed tomography****Speaker**

Sungmin Park

15:08-15:09

**Introducing the easyPET/CT: a Novel Multimodal Preclinical Imaging Scanner****Speaker**

R. G. Oliveira

15:09-15:10

**Application of Richardson-Lucy deconvolution to images obtained from GEM scintillation readout by a commercial Hamamatsu S13361-3050 SiPM unit****Speakers**

C. M. B. Monteiro, J.P.G. Neves

15:09-15:10

**Efficient noble gas purification using hot getters and gas circulation by convection****Speaker**

J. M. R. Teixeira

15:10