

PSD10: 10th International Conference on Position Sensitive Detectors

Sunday 07 September 2014 - Friday 12 September 2014

**University of Surrey
Programme**

Table of contents

Sunday 07 September 2014	1
Conference Registration and Welcome BBQ	1
Monday 08 September 2014	2
Conference Registration will be open from 08:00	2
Conference Opening Session and Welcome	2
Session 1: Applications in Astronomy and Astrophysics	2
Coffee Break	2
Session 2: High-Z detectors	2
Lunch Break	2
Session 3: CERN@school joint session	2
Coffee Break with CERN@school posters	3
Session 4: Pixel Detectors for High Energy Physics	3
Tuesday 09 September 2014	4
Session 5: Applications in Medicine and Proton Therapy	4
Coffee Break	4
Session 6: Applications in High Energy Physics	4
Lunch Break	4
Session 7: Engineering and Environmental Imaging	4
Coffee Break	4
Industrial Exhibition and Reception	4
Wednesday 10 September 2014	5
Session 8: Detectors for Synchrotrons and FELS	5
Coffee Break	5
Session 9: Applications in Astronomy and Space Science	5
Lunch Break	5
Session 10: Posters 1 (Particle Physics, Pixel Detectors and Lifesciences)	5
Coffee Break	7
Conference Social Programme	7
Thursday 11 September 2014	8
Session 11: Pixel Detectors and Integration Technologies	8
Coffee Break	8
Session 12: Applied Radiation Imaging	8

Lunch Break	8
Session 13: Posters 2 (Astrophysics, Synchrotron and other Applications)	8
Coffee Break	9
Session 14: Applications in Life Sciences, Medicine and Biology	9
Conference Dinner	9
Friday 12 September 2014	10
Session 15: Detectors for High Radiation and Extreme Environments	10
Coffee Break	10
Session 16: Gas-based and Photon Detection Systems	10
Closing Remarks	10

Sunday 07 September 2014

Conference Registration and Welcome BBQ - Wates House Staff Club (16:00-20:00)

Join us for an informal BBQ at the Wate's House University Staff Club on Sunday afternoon, anytime from 16:00 - 22:00, with food served from 17:00. There is no need to pre-register for this event.

Conference Registration facilities will be available for delegates.

Keys for accommodation should be collected on Sunday afternoon from the main University Security office on campus, which is open 24hrs.

Monday 08 September 2014

Conference Registration will be open from 08:00 - Austin Pearce Building (08:00-08:30)

Conference Opening Session and Welcome - AP1&2 (08:30-08:40)

time	[id] title	presenter
08:30	Welcome Address, Professor Michael Kearney	

Session 1: Applications in Astronomy and Astrophysics - AP1&2 (08:40-10:40)

time	[id] title	presenter
08:40	[130] (Invited) An overview of the STFC pixel detector programme	Mr. FRENCH, Marcus Julian
09:20	[39] On-ground characterization of the Euclid's low noise CCD273 sensor for precise galaxy shape measurements	Dr. SZAFRANIEC, Magdalena
09:40	[95] A coded aperture approach for particle measurements in space plasmas	LEE, Arrow
10:00	[108] Experiment of the 30 cm-cube ETCC under the Intense Radiations with Proton Beam	MATSUOKA, Yoshihiro
10:20	[80] Pre and Post Proton Irradiation Responsivity Mapping of the Swept Charge Device CCD236	SMITH, Phillipa

Coffee Break - AP3&4 (10:40-11:00)

Session 2: High-Z detectors (11:00-13:00)

time	[id] title	presenter
11:00	[41] GaAs strip detector for high energy X-ray imaging	Dr. MIIKKULAINEN, Kukka
11:20	[85] Characterisation and performance comparison of two MYTHEN Cadmium-Telluride systems	Mrs. ELBRACHT-LEONG, Stefanie
11:40	[9] Cadmium Telluride Spectroscopic X-Ray Imaging Detectors	VEALE, Matthew
12:00	[46] The influence of operating conditions on Schottky CdTe Medipix3RX spectroscopic pixel detector performance	ASTROMSKAS, Vytautas
12:20	[103] Microbeam studies and simulation of a CZT Ring-Drift detector	Ms. BOOTHMAN, Victoria
12:40	[14] The LAMBDA pixel detector with high-Z sensors	Dr. PENNICARD, David

Lunch Break - AP3&4 (13:00-14:00)

Session 3: CERN@school joint session - 03MS00 (14:00-15:40)

time	[id] title	presenter
14:00	[107] (Invited) Medipix and Timepix: introducing young people to nuclear and particle physics	CAMPBELL, Michael
14:40	Introduction to CERN@school, Becky Parker, Langton Star Centre	
14:55	The LUCID experiment, Matt Harrison	
15:05	Radiation Around You (RAY), Johnny Allain-Lebon	
15:15	The MoEDAL experiment at the Large Hadron Collider	

15:25	Student Presentations	
15:30	Teacher presentation: Collaborating with your local university	

Coffee Break with CERN@school posters - AP3&4 (15:40-16:10)

Session 4: Pixel Detectors for High Energy Physics (16:10-17:50)

time	[id] title	presenter
16:10	[97] Achievements of the ATLAS Upgrade Planar Pixel Sensors R&D Project	NELLIST, Clara
16:30	[99] The Pixel Detector of the ATLAS experiment for the Run2 at the Large Hadron Collider	TAKUBO, Yosuke
16:50	[65] The Upgrade of the LHCb Vertex Locator	BIRD, Thomas
17:10	[29] CMS Pixel Phase I Upgrade	ELLER, Philipp David
17:30	[72] Development of CMOS Pixel Sensors for the Upgrade of the ALICE Inner Tracking System	MOLNAR, Levente

Tuesday 09 September 2014

Session 5: Applications in Medicine and Proton Therapy - AP1&2 (08:30-10:30)

time	[id] title	presenter
08:30	[134] (Invited) PRaVDA – An Integrated Proton Therapy Imaging System	ALLINSON, Nigel
09:10	[15] Proton tracking for medical imaging and dosimetry	Dr. TAYLOR, Jonathan
09:30	[125] Precise on-line position measurement for particle therapy	Dr. ACTIS, Oxana
09:50	[82] CMOS Active Pixel Sensors as Energy-Range Detectors for Proton Computed Tomography	ESPOSITO, Michela
10:10	[86] A proton Computed Tomography based medical imaging system	SCARINGELLA, Monica

Coffee Break - AP3&4 (10:30-11:00)

Session 6: Applications in High Energy Physics - AP1&2 (11:00-14:00)

time	[id] title	presenter
11:00	[131] (Invited) Micromegas Detectors for the Muon Spectrometer Upgrade of the ATLAS Experiment	IODICE, Mauro
12:00	[55] Physics Studies for the CMS Muon System Upgrade with Triple-GEM detectors	Mr. CAPUTO, Claudio
12:20	[27] The XENON program: performances of the XENON100 detectors and development of the new detector XENON1T	Dr. PERSIANI, Rino
12:40	[104] Large size hybrid GEM-Micromegas gaseous detectors for high particle flux at COMPASS	NEYRET, Damien
13:40	[51] Charge Collection Efficiency Simulations of Irradiated Silicon Strip Detectors	PELTOLA, Timo Hannu Tapani

Lunch Break - AP3&4 (13:00-14:00)

Session 7: Engineering and Environmental Imaging - AP1&2 (14:00-15:40)

time	[id] title	presenter
14:00	[133] (Invited) Industrial imaging using high energy photons	Dr. PARKER, David
14:40	[83] Environmental Compton camera development: imaging radionuclide transport in soils and geomaterials	DORMAND, Jamie
15:00	[93] Adaptive response matrices for optimised mixed-field imaging	Mr. BEAUMONT, Jonathan
15:20	[127] Digital fast neutron radiography of rebar in concrete	Prof. JOYCE, Malcolm

Coffee Break - AP3&4 (15:40-16:10)

Industrial Exhibition and Reception - AP3&4 (16:10-17:50)

Wednesday 10 September 2014

Session 8: Detectors for Synchrotrons and FELS - AP1&2 (08:30-10:30)

time	[id] title	presenter
08:30	[135] (Invited) Jungfrau, Mönch and Eiger: Detector Development at the Swiss Light Source	Dr. SCHMITT, Bernd
09:10	[116] PERCIVAL: Design and Characterisation of a CMOS Image Sensor for Direct Detection of Low-Energy X-Rays	Mr. MARSH, Ben
09:30	[45] The Large Pixel Detector for the European XFEL	HART, Matthew
09:50	[40] AGIPD, a high dynamic range fast detector for the European XFEL	Dr. KLYUEV, Alexander
10:10	[59] Development and characterisation of sensor prototypes for the BELLE II Pixel Detector	Dr. AVELLA, Paola

Coffee Break - AP3&4 (10:30-11:00)

Session 9: Applications in Astronomy and Space Science - AP1&2 (11:00-13:00)

time	[id] title	presenter
11:00	[18] (Invited) DEPFET detectors for applications in astrophysics and photon science	MAJEWSKI, Petra
11:40	[91] High spatial resolution detector for at-wavelength metrology of X-ray optics	SINGH, Bipin
12:00	[62] A CMOS Active Pixel Sensor for high resolution imaging of the Jovian system	SOMAN, Matthew
12:20	[124] Detector concepts for wide field X-ray imaging using Lobster Eye microchannel plate optics	LAPINGTON, Jon
12:40	[50] Particle tracking at cryogenic temperatures: The Fast Annihilation Cryogenic Tracking (FACT) detector for the AEGIS antimatter gravity experiment	Dr. STOREY, James

Lunch Break - AP3&4 (13:00-14:00)

Session 10: Posters 1 (Particle Physics, Pixel Detectors and Lifesciences) - AP3&4 (14:00-15:40)

[id] title	presenter	board
[30] Development of radiation hard silicon strip sensors using T-CAD simulations and comparison with subsequently produced detectors	PRINTZ, Martin	
[42] Characterisation, calibration and performance of single photon counting CdTe pixel detectors	Dr. RISSI, Michael	
[61] Low-area trim DAC in 40nm CMOS technology for pixel readout chips used in hybrid detectors.	DROZD, Aleksandra	
[63] Testing fully depleted, thick monolithic CMOS pixels with high quantum efficiency	CLARKE, Andrew	
[64] Interconnect and bonding techniques for pixelated X-ray and gamma ray detectors	SCHNEIDER, Andreas	

[68] 3D position estimation in monolithic scintillation cameras using B-spline response parametrization.	SOLOVOV, Vladimir	
[81] Characterisation and Modelling of a Thick Segmented Cadmium Tungstate Scintillator Array	Mr. RICHARDS, Sion	
[87] Development of a Cryogenic Irradiation Test Facility and the Initial Results from a CCD236 Swept Charge Device	Dr. GOW, Jason	
[25] Gas gain limitation in low pressure proportional counters filled with TEG mixtures	Dr. KOWALSKI, Tadeusz Z.	
[26] X-CSIT: a toolkit for simulating 2D pixel detectors	Mr. JOY, Ashley	
[21] Radiation effects on true charge transfer TDI sensor in CMOS	Mr. RUSHTON, Joseph	
[48] Development and Characterization of 16-channel SiPM Prototype with sub-mm pixels for high resolution PET System	SHIMAZOE, Kenji	
[8] Low power wireless ultra-wide band transmission of bio signals	GABRIELLI, Alessandro	
[74] Monte Carlo simulation of dose efficiency and image quality in X-ray Luminescence Optical Tomography	Dr. MARTINEZ-DAVALOS, Arnulfo Dr. RODRIGUEZ-VILLAFUERTE, Mercedes	
[73] Feasibility study of a 1 mm resolution small-animal PET prototype	Dr. RODRIGUEZ-VILLAFUERTE, Mercedes	
[92] The Effect of radiation on the spatial resolution of a novel proton range detector for use in proton Computed Tomography	Dr. PRICE, Tony	
[79] Radiation-induced charge trapping in n- and p-channel CCDs	Mr. WOOD, Daniel	
[10] The Belle II DEPFET Pixel Detector and Cluster Shape Dependent Improvement of Spatial Resolution	AVELLA, Paola	
[38] Novel Silicon Drift Detector Design Enabling Low Dark Noise and Simple Manufacturing	Mr. MAROCHKIN, Vladislav	
[33] Position sensitive detector for fluorescence lifetime imaging.	TURBIN, Evgeny PROKAZOV, Yury	
[32] Development of a Prototype PET Scanner using Dual-Sided Readout DOI-PET Modules	FUJITA, Takuya	
[31] A Novel Compton Camera Design featuring a Rear-panel Shield for Substantial Noise Reduction in Gamma-ray Images	NISHIYAMA, Toru	
[56] One dimensional x-ray detector with high spectroscopic performance based on silicon strip detector technology	WIŁCEK, Piotr	
[53] Influence of edge surface leakage current on the performance of pixelated CdTe radiation detectors	DUARTE, Diana	
[34] Development of a MPPC-based Prototype Gantry for Future MRI-PET Scanners	KUREI, Yohta	
[57] Setup for Laboratory studies of the charge transport in Silicon Dioxide	KUSHPIL, Svetlana	
[112] Microdosimetric response of proportional counters filled with different tissue-equivalent gases.	Dr. KOWALSKI, Tadeusz	
[121] Electrical-modeling and simulation of cumulative radiation effects in semiconductor pixels detectors: prospects and limits	Dr. FOURCHES, Nicolas	
[100] Performance tests during the IBL Stave Integration	BACKHAUS, Malte	

[132] 3D simulation and measurements of novel bias grid and edgeless ATLAS planar pixel sensor designs for the High-Luminosity LHC upgrade	NELLIST, Clara	
[111] The CMS Pixel Readout Chip for the Phase I Upgrade	SPANNAGEL, Simon	
[139] Enhancing gamma-ray detection and imaging characteristics in HPGe double-sides strip detectors employing signal decomposition algorithms	SUPIC, Lazar	

Coffee Break (15:40-16:30)**Conference Social Programme - (16:30-20:00)**

We are offering afternoon visits to either Denbies Wine Estate or to Brooklands Motor Museum.

Delegates must register in advance at the Conference Desk to obtain their free bus ticket.

Buses depart at 16:30 from the main bus stops across the plaza from the conference lecture theatre.

Thursday 11 September 2014

Session 11: Pixel Detectors and Integration Technologies - AP1&2 (08:30-10:50)

time	[id] title	presenter
08:30	[54] 3D Monolithically Stacked CMOS Active Pixel Sensors for Particle Position and Direction Measurements	Dr. PASSERI, Daniele
08:50	[101] PImMS2, a CMOS event-triggered time-stamping image sensor with storage of multiple timestamps	JOHN, Jaya John
09:10	[96] Radiation-hard Active Pixel Sensors for HL-LHC Detector Upgrades based on HV/HR-CMOS Technology	BACKHAUS, Malte
09:50	[36] Large area CdTe based spectroscopic X-ray imaging detector	SELLER, Paul
10:10	[24] A Radiation Detector Design Mitigating Problems Related to Sawed Edges	Mr. AUROLA, Artto
10:30	[69] Experimental results for the Cherwell MAPS sensors	BORRI, Marcello

Coffee Break (10:30-11:00)

Session 12: Applied Radiation Imaging - AP1&2 (11:00-13:00)

time	[id] title	presenter
11:00	[137] (Invited) Position Sensitive Detectors in Security Imaging	Dr. MORTON, Edward
11:40	[102] Imaging of Ra-223 with a small-pixel CdTe detector: potential for improved image quantification for radionuclide dosimetry	SCUFFHAM, James
12:00	[94] A Small Field of View Camera for Hybrid Gamma and Optical Imaging	Dr. LEES, John
12:20	[77] Operational performance characteristics of the WISH detector array on the ISIS spallation neutron source	DUXBURY, Dominic
12:40	[11] New Detection System for Heavy Element Research	Dr. TSYGANOV, Yury

Lunch Break - AP3&4 (13:00-14:00)

Session 13: Posters 2 (Astrophysics, Synchrotron and other Applications) (14:00-15:40)

[id] title	presenter	board
[60] Position sensitive photon detectors using epitaxial InGaAs/InAlAs quantum-well	GANBOLD, Tamiraa	
[114] Capacitive Division Image Readout - Modelling and simulation of new designs	LAPINGTON, Jon	
[117] Muon Scattering Tomography Using Drift Chamber Technology	Mr. DAYKIN, Matthew	
[89] Capacitive Division Image Readout - Rate and resolution measurements using adaptive pulse processing	Mr. LEACH, Steven	
[113] RadICAL - Directional Detector for Source Localisation	Mr. RANDALL, George	
[119] Strategies for reducing the environmental impact of gaseous detector operation at the CERN-LHC experiments	GUIDA, Roberto	
[118] Performance Study of Electron Tracking Compton Camera with Compact System for Environmental gamma-ray Observations	Dr. MIZUMOTO, Tetsuya	

[20] Characterising front-illuminated and back-illuminated e2v CCDs in the context of weak gravitational lensing	Mr. ALLANWOOD, Edgar	
[22] Investigation of a possible physical mechanism for signal dependent charge sharing in CCDs	WEATHERILL, Daniel	
[23] Characterization of Double Modified Internal Gate Pixel by 3D Simulation Study	Mr. AUROLA, Artto	
[43] Improvements to EMCCD technology through advanced semiconductor simulations.	Mr. BUSH, Nathan	
[76] Empirical formula of a spatial resolution for a wavelength-shifting fibre detector coupled with a ZnS/6LiF scintillator for thermal neutron detection	Dr. TOH, Kentaro	
[75] Comparative Study of LaBr3(Ce) and CZT Array on Determination of Uranium Enrichment for Nuclear Safeguards Application	Dr. KWAK, Sung-Woo	
[78] Performance characteristics of the new detector array for the SANS2d instrument on the ISIS spallation neutron source	DUXBURY, Dominic	
[17] Evaluation of two-dimensional multiwire neutron detector with individual line readout under pulsed neutron irradiation	Dr. TOH, Kentaro	
[16] Microstructured silicon neutron detectors for security applications	Mr. ESTEBAN, Sergi	
[19] The upgrade of the muon system of the CMS experiment	ABBRESCIA, Marcello	
[49] A New Digital-Analog Multiplex Method Using Simple Adder Circuit	Mr. NAKAMURA, Yasuaki	
[35] Quality Control and Beam Test of GEM Detectors for Future Upgrades of the CMS Muon High Rate Region at the LHC	SALVA DIBLEN, Sinem	
[47] A Novel Pixellated Spectroscopic Detector Combined With a Broadband Monochromator to Produce Scatter-Free Images for the Improvement of Breast Cancer Detection	Ms. GREEN, Faith	
[115] A Novel gain stage for Microchannel Plate Imaging Photomultipliers	LAPINGTON, Jon	
[37] Digital processing of signals from fast scintillation detectors	Dr. NAKHOSTIN, Mohammad	
[138] Monte Carlo Simulations of Scintillation Detectors for Time-of-Flight X-ray Imaging	Mr. CALVERT, Nick	

Coffee Break - AP3&4 (15:40-16:10)

Session 14: Applications in Life Sciences, Medicine and Biology - AP1&2 (16:10-17:50)

time	[id] title	presenter
16:10	[136] (Invited) Energy dependence of detectors for 3D dosimetry of light ion beams	PALMANS, Hugo
16:50	[88] PGRIS: Towards portable Compton camera imaging	Dr. COLOSIMO, Samantha
17:10	[98] Dual-energy mammography with a pixellated spectroscopic detector	PANI, Silvia
17:30	[84] ProSPECTus: A Compton Camera For Medical Imaging	PATEL, Amina

Conference Dinner - (19:00-22:00)

Friday 12 September 2014

Session 15: Detectors for High Radiation and Extreme Environments - AP1&2 (08:30-10:30)

time	[id] title	presenter
08:30	[123] (Invited) Direct-detection Monolithic Active CMOS sensors for X-ray Free-Electron Lasers and future ultimate storage ring light sources	HATSUI, Takaki
09:10	[106] Optimization of charge collection and radiation hardness of edgeless silicon pixel sensors for photon science and HEP applications	Dr. ZHANG, Jiaguo
09:30	[122] Charge Collection Efficiency of micro-strip Silicon Sensors Designed for studying charge multiplication after hadron irradiation	WONSAK, Sven
09:50	[58] Studying defects in the silicon lattice using CCDs	HALL, David
10:10	[52] Thin n-in-p planar pixel sensors and active edge sensors for the ATLAS upgrade at HL-LHC	TERZO, Stefano

Coffee Break - AP3&4 (10:30-11:00)

Session 16: Gas-based and Photon Detection Systems - AP1&2 (11:00-11:40)

time	[id] title	presenter
11:00	[105] The TORCH PMT: A close packing, multi-anode, long life MCP-PMT for Cherenkov applications	MILNES, James
11:20	[129] The kaon identification system in the NA62 experiment at CERN SPS	WRONA, Bozydar

Closing Remarks (11:40-12:00)