2018 IEEE Nuclear Science Symposium and Medical Imaging Conference
25th International Symposium on Room-Temperature Semiconductor X-Ray & Gamma-Ray Detectors
10 - 17 November 2018, International Convention Centre Sydney, Australia

New Technologies in Hadron Therapy Workshop

Sydney International Convention Centre, November 13th

IEEE NSS-MIC 2018

8:00 – 10:00	NSS Plenary Session	
10:00 – 10:20	Morning Coffee Break	
10:20 – 10:25	**Welcome**	S. Penfold
10:25 – 11:10	**Session 1 – Clinical Perspectives and Radiobiology**	**S. Penfold and M. Jackson**
10:25 – 10:40	Controlling difficult to treat tumours with particle therapy	V. Ahern
10:40 – 10:55	Biological model for treatment planning of hypo-fractionated multi-ion therapy	T. Inaniwa
10:55 – 11:10	Quantification of DNA damage and variable RBE in hadron therapy	M. Brooke
11:10 – 11:50	**Session 2 – Visions for the Future**	**P. LeDu and V. Ahern**
11:10 – 11:25	Future physics challenges in proton therapy	H. Paganetti
11:25 – 11:40	Quantum scalpel project for advanced heavy-ion radiotherapy	K. Noda
11:40 – 11:50	A proposed novel advanced heavy ion therapy centre in the USA	J. Welsh
11:50 – 12:35	**Session 3 – Accelerators and Monte Carlo**	**P. LeDu and V. Ahern**
11:50 – 12:05	The next generation of hadron therapy driver	K. Takayama
12:05 – 12:20	Laser driver proton acceleration technologies for medical applications	V. Saveliev
12:20 – 12:35	Geant4 capability for hadron therapy	S. Guatelli
12:35 – 13:20	Lunch Break	
13:20 – 13:55	**Session 4 – Proton Imaging**	**R. Schulte and J. Welsh**
13:20 – 13:35	Overview of the Radiance 330 and results of preliminary proton imaging studies	D. Lee
13:35 – 13:45	Proton CT: A potential solution for proton treatment planning in the presence of metallic implants	C. Oancea
13:45 – 13:55	The impact of transverse heterogeneities on the most likely path of protons for proton computed tomography	F. Khellaf
13:55 – 14:25	**Session 5 – Range Verification**	**T. Yamaya and S. Guatelli**
13:55 – 14:10	Impact of image reconstruction approaches on range verification using compton cameras	N. Kohlhase
14:10 – 14:25	Plastic scintillator based PET detector technique for proton therapy range monitoring. A Monte Carlo Study	A. Rucinski

14:25 – 15:40	**Session 6 – Dosimetry**	**A. Rosenfeld and D. Prokopovich**
14:25 – 14:40	Solid state microdosimetry for prediction of biological cell response in particle therapy: Status and development	A. Rosenfeld
14:40 – 14:55	Quantum imaging dosimetry, spatial and directional detection of mixed-radiation fields in ion beam radiotherapy with Timepix and Timepix-3 detectors	C. Granja
14:55 – 15:10	Microdosimetry applications on proton therapy and irradiation	T. Chao
15:10 – 15:25	OPERA: a novel water phantom using HV-CMOS technology	J. Taylor
15:25 – 15:40	Considerations on BNCT dosimetry	G. Gambarini
15:25 – 15:30	**Closing remarks**	**A. Rosenfeld**
15:30 – 16:00	Afternoon Coffee Break	
16:00 – 17:45	Hadron Therapy Joint NSS-MIC Session	

Registration

Attendees will need to register for the IEEE NSS-MIC Conference. Registrations can be completed through the Conference website http://www.nssmic.org/2018/. In addition to full Conference registrations, single day registrations are available that will provide access to the Workshop and all NSS-MIC sessions on that day.

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On behalf of the Co-chairs of the New Technologies in Hadron Therapy Workshop