



14th International Conference on Nuclear Microprobe Technology and Applications

Sunday 06 July 2014 - Friday 11 July 2014

**Palazzo del Bo and Centro Culturale San Gaetano,
Padova, Italy**

Programme

Sunday 06 July 2014

Palazzo Moroni: ICNMTA registration and welcome party - (18:30-21:30)

Monday 07 July 2014

Registration - (08:30-09:00)

Opening - Aula Magna (09:00-09:50)

Plenary 1 - Aula Magna (09:50-11:10)

- Convener: Pinheiro, Teresa

time	title	presenter
09:50	Invited: Cold beams and focused beams: new technology for new microprobes in the quantum era	JAMIESON, David
10:30	Invited: The functionalization of single atoms addressed by ion beam implantation	MEIJER, Jan

Coffee Break - (11:10-11:40)

Plenary 2 - Aula Magna (11:40-13:00)

- Convener: Bisello, Dario

time	title	presenter
11:40	Invited: Three dimensional silicon micromachining using a nuclear microprobe	BREESE, Mark
12:20	Invited: Radiation effects microscopy in microelectronic devices using a heavy ion nuclear microprobe	VIZKELETHY, Gyorgy

Lunch Break - (13:00-13:50)

Plenary 3 - Aula Magna (14:00-16:00)

- Convener: Grime, Geoffrey

time	title	presenter
14:00	Invited: Nuclear Microscopy of biological cells using MeV ions: A critical review.	WATT, Frank
14:40	Invited: Applications of nuclear microprobe imaging in neuroscience	ORTEGA, Richard
15:20	Invited: Radiobiological and medical research at the ion microprobe SNAKE	GREUBEL, Christoph

Coffee Break - (16:00-16:30)

ICNMTA2014 Group photo - (16:30-16:40)

Plenary 4 - Aula Magna (16:40-18:00)

- Convener: Jaksic, Milko

time	title	presenter
16:40	Invited: Ambient pressure molecular concentration mapping using simultaneous MeV-SIMS and PIXE	WEBB, Roger
17:20	Invited: The nuclear microprobe in cultural heritage studies: state of the art and challenges	CALLIGARO, Thomas

Tuesday 08 July 2014

Session 1 - Nuclear Microprobe Technology 1 - Auditorium (08:30-10:40)

- Convener: Rajta, Istvan

time	title	presenter
08:30	Invited: Development of microbeam technology to expand its applications at TIARA	KAMIYA, Tomihiro
09:00	Invited: The first interdisciplinary experiments at the IMP high energy microbeam	DU, Guanghua
09:30	Invited: Transmission diamond membrane detector and vacuum window for external microbeams	SKUKAN, Natko
10:00	The high-current mode performance of the proton beam at Ljubljana nuclear microprobe coupled to a multicusp ion source	PELICON, Primoz
10:20	Development of high brightness ion sources with an outlook to sub 10 nm beam spot size for a compact proton beam writing system	LIU, Nannan

Coffee Break - (10:40-11:10)

Session 2 - Nuclear Microprobe Technology 2 - Auditorium (11:10-13:10)

- Convener: Du, Guanghua

time	title	presenter
11:10	Invited: Deuterium Microscopy using Deuteron-Deuteron Scattering	REICHART, Patrick
11:40	Invited: MeV-SIMS with swift heavy ions at low pressure	MATSUO, Jiro
12:10	Miniature high resolution x-ray spectrometer for ion microprobe	FAZINIC, Stjepko
12:30	The DEFEL pulsed beam facility at INFN-LABEC, Florence: from millimetric to micrometric spatial resolution	FEDI, Mariaelena
12:50	Upgrade of the CSIRO Nuclear Microprobe aimed at high definition PIXE imaging	RYAN, Chris

Lunch Break - (13:10-15:20) (14:20-15:20 International Committee Meeting)

Session 3 - Nuclear Microprobe Applications: Biology 1 - Auditorium (15:20-17:00)

- Convener: Ynsa, Maria Dolores

time	title	presenter
15:20	Invited: Dual elemental and molecular imaging by MeV SIMS and micro-PIXE on biological tissue samples	OGRINC POTOČNIK, Nina
15:50	Invited: Ion beam induced fluorescence imaging in biological systems	BETTIOL, Andrew
16:20	Multimodal Correlative Microscopy: combination of ion beam micro-analysis with complementary microscopy techniques for the study of nanoparticles internalization	BARBERET, Philippe
16:40	The RIKEN microbeam facility: biological application using Fucci cells	PUTTARAKSA, Nitipon

Poster Session with Cheese and Wine - Agorà (17:00-19:30)

Wednesday 09 July 2014

Permanent Poster Exhibition - Agorà

Session 4 - Nuclear Microprobe Applications: Biology 2 - Auditorium (08:30-10:30)

- Convener: Ortega, Richard

time	title	presenter
08:30	Invited: Reduced side effects by proton microchannel radiotherapy – studi in a human skin model	DOLLINGER, Gunther
09:00	Invited: Automated high throughput analysis of metal atoms in biological macromolecules using Ion Beam Analysis	GRIME, Geoffrey
09:30	Chemical imaging of bone regeneration induced by bioactive glass implants in vivo: a multimodal and quantitative micro-ion beam analysis of mineralization and trace elements at the bone interface	LAO, Jonathan
09:50	In-vivo 3D PIXE-micron-CT imaging of Drosophila using contrast media	MATSUYAMA, Shigeo
10:10	Targeted irradiation of cellular substructures at SNAKE	SIEBENWIRTH, Christian

Coffee Break - (10:30-11:00)

Session 5 - Nuclear Microprobe Applications: Material Science - Auditorium (11:00-12:40)

- Convener: Kamiya, Tomihiro

time	title	presenter
11:00	When NMP meets ICF target	SHEN, Hao
11:20	Boron detection in diamond by the nuclear reaction $^{11}\text{B}(p,\gamma)^8\text{Be}$	YNSA, Maria Dolores
11:40	Assessment of dye distribution in sensitized solar cells by microprobe techniques	BARREIROS, M. Alexandra
12:00	Light element micro-analysis at AIFIRA facility	SORIEUL, Stephanie
12:20	Channeling Contrast Microscopy of GeSn virtual substrates	OSIPOWICZ, Thomas

Conference Excursion to Venice Lagoon - (13:45-23:00)

Permanent Poster Exhibition - Agora

Session 6 - Nuclear Microprobe Applications: Ion Beam Material Micro-Modification - Auditorium (08:30-10:10)

- Convener: Olivero, Paolo

time	title	presenter
08:30	Invited: MeV ion beam mask lithography of parylene-C and parylene-F	WHITLOW, Harry J.
09:00	Invited: Ion beam writing on diamond in micrometer scale at the LIPSION nanoprobe	LUHMANN, Tobias
09:30	Deep Ion Beam Lithography in diamond: towards the nanoscale	PICOLLO, Federico
09:50	The use of focused ion beams for the realization of nano-structures in diamond	KALISH, Rafi

Coffee Break - (10:10-10:30)

Session 7 - 5th Proton Beam Writing Workshop - Auditorium (10:30-12:30)

- Conveners: van Kan, Jeroen Anton and Bettiol Andrew

time	title	presenter
10:30	Invited: Proton Beam Writing applications into DNA nano fluidics	VAN KAN, Jeroen
11:00	Invited: A flexible dielectrophoretic device with high-aspect-ratio pillar arrays fabricated by proton beam writing	NISHIKAWA, Hiroyuki
11:30	Development of embedded Mach-Zehnder optical waveguide structures in PDMS thin films by proton beam writing	KADA, Wataru
11:50	Fabrication of three-dimensional SU-8 microchannels by Proton Beam Writing for microfluidics applications: fluid flow characterisation	ALSHEHRI, Saad
12:10	Proton beam lithography in a new, liquid phase negative resist material	HUSZANK, Robert
12:30	Panel Discussion: Nano positioning stages for Nano Probes used in Proton Beam Writing and Nuclear Microscopy	

Lunch Break - (13:00-14:00)

Thursday 10 July 2014 (Cont.)

Session 8 - Nuclear Microprobe Applications: Microelectronics - Auditorium (14:00-15:10)

- Convener: Vizkelethy, Gyorgy

time	title	presenter
14:00	Invited: Development of diagnostic method for deep levels in semiconductors using charge induced by heavy ion microbeams	OHSIMA, Takeshi
14:30	Radiation Hardness of n-type SiC Schottky Diodes	PASTUOVIC, Zeljko
14:50	Ion Electron Emission Microscopy at LNL	SILVESTRIN, Luca

Refreshment - (15:10-16:00)

Session 9 - International collaborations and initiatives - Auditorium (16:00-17:45)

- Convener: Rigato, Valentino

time	title	presenter
16:00	Invited: New initiatives to advance Accelerator-based Research & Development	SIMON, Aliz
16:30	Round Table: New strategies for fundraising to support projects in micro and nano ion beam technologies	

18:45 - Meeting at Eremitani Civic Museum

18:45-20:45 - Visit to Cappella degli Scrovegni and Eremitani Civic Museum

20:45-22:30 - Social Dinner at Eremitani Civic Museum Magnolia Cloister

Session 10 - Nuclear Microprobe Applications: Geology and Environmental Science - Auditorium (09:00-10:30)

- Convener: Kristiansson, Per

time	title	presenter
09:00	Invited: High-Speed PIXE: Fast Elemental Analysis with a Colour X-Ray Camera	BUCHRIEGLER, Josef
09:30	Deuterium/Hydrogen microscopy in astrogeological material	ROS, Linus
09:50	Measurement of ratios of oxygen isotopes with pNRA at a microprobe beamline.	BORYSIUK, Maciek
10:10	Elemental compartmentalization changes of marine diatoms as a reporter of biogeochemical cycles	PINHEIRO, Teresa

Coffee Break - (10:30-11:00)

Session 11 - Nuclear Microprobe Applications: Art and Archaeometry - Auditorium (11:00-12:30)

-Convener: Castelli, Lisa

time	title	presenter
11:00	Invited: Evidences for an Afghan provenance of lapis lazuli utilized for glyptic by ancient Egyptian combining micro-PIXE and XRF results	RE, Alessandro
11:30	Correlation between ionoluminescence signal and the manufacturing conditions of the clay bodies of ancient tiles	CORREGIDOR, Victoria
11:50	Implementation of ionoluminescence in the IBA micromapping setup of AGLAE facility	PICHON, Laurent
12:10	A comparative study of Etruscan and Tartesian gold jewels by micro-XRF	SCRIVANO, Simona

Closing Remarks - Auditorium (12:30-13:00)