



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

Programme



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Sunday 06 July 2014

Palazzo Moroni 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)

- Conveners: Pinheiro, Teresa

| time | [id] title | presenter |
|-------|---|-----------------|
| 09:50 | Invited: [129] Cold beams and focused beams: new technology for new microprobes in the quantum era | JAMIESON, David |
| 10:30 | Invited: [121] 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)

- Conveners: Bisello, Dario

| time | [id] title | presenter |
|-------|---|--------------------|
| 11:40 | Invited: [156] Three dimensional silicon micromachining using a nuclear | BREESE, Mark |
| 12:20 | Invited: [93] 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)

- Conveners: Grime, Geoffrey

| time | [id] title | presenter |
|-------|--|--------------------|
| 14:00 | Invited: [39] Nuclear Microscopy of biological cells using MeV ions: A critical | WATT, Frank |
| 14:40 | Invited: [106] Applications of nuclear microprobe imaging in neuroscience | ORTEGA, Richard |
| 15:20 | Invited: [72] 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)

- Conveners: Jaksic, Milko

| time | [id] title | presenter |
|-------|---|-------------------|
| 16:40 | Invited: [161] Ambient Pressure Molecular Concentration Mapping Using Simultaneous MeV-SIMS and PIXE | WEBB, Roger |
| 17:20 | Invited: [160] 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)

- Conveners: Rajta, Istvan

| time | [id] title | presenter |
|-------|---|-----------------------|
| 08:30 | Invited: [83] Development of microbeam technology to expand its applications at TIARA | KAMIYA, Tomihiro |
| 09:00 | Invited: [103] The first interdisciplinary experiments at the IMP high energy | DU, Guanghua |
| 09:30 | Invited: [60] Transmission diamond membrane detector and vacuum window for external microbeams | SKUKAN, Natko |
| 10:00 | [78] The high-current mode performance of the proton beam at Ljubljana nuclear microprobe coupled to a multicusp ion source | PELICON, Primoz |
| 10:20 | [120] Development of high brightness ion sources with an outlook to sub 10 nm beam spot size for a compact proton beam writing system | VAN KAN, Jeroen Anton |

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

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

- Conveners: Du, Guanghua

| time | [id] title | presenter |
|-------|---|-------------------|
| 11:10 | Invited: [112] Deuterium Microscopy using Deuteron-Deuteron Scattering | REICHART, Patrick |
| 11:40 | Invited: [133] MeV-SIMS with swift heavy ions at low pressure | MATSUO, Jiro |
| 12:10 | [62] Miniature High Resolution X-ray Spectrometer for Ion Microprobe | FAZINIC, Stjepko |
| 12:30 | [88] The DEFEL pulsed beam facility at INFN-LABEC, Florence: from millimetric to micrometric spatial resolution | FEDI, Mariaelena |
| 12:50 | [79] 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)

- Conveners: Ynsa, Maria Dolores

| time | [id] title | presenter |
|-------|---|-----------------------|
| 15:20 | Invited: [70] Dual elemental and molecular imaging by MeV SIMS and micro-PIXE on biological tissue samples | OGRINC POTOČNIK, Nina |
| 15:50 | Invited: [75] Ion Beam Induced Fluorescence Imaging in Biological Systems | BETTIOL, Andrew |
| 16:20 | [122] Multimodal Correlative Microscopy: combination of ion beam micro-analysis with complementary microscopy techniques for the study of nanoparticles internalization | BARBERET, Philippe |
| 16:40 | [35] 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 - Agora

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

- Conveners: Ortega, Richard

| time | [id] title | presenter |
|-------|--|------------------------|
| 08:30 | Invited: [63] Reduced side effects by proton microchannel radiotherapy – studi in a human skin model | DOLLINGER, Gunther |
| 09:00 | Invited: [134] Automated high throughput analysis of metal atoms in biological macromolecules using Ion Beam Analysis | GRIME, Geoffrey |
| 09:30 | [12] 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 | [87] In-vivo 3D PIXE-micron-CT imaging of Drosophila using contrast media | MATSUYAMA, Shigeo |
| 10:10 | [85] 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)

- Conveners: Kamiya, Tomihiro

| time | [id] title | presenter |
|-------|--|-------------------------|
| 11:00 | [125] When NMP meets ICF target | SHEN, Hao |
| 11:20 | [136] Boron detection in diamond by the nuclear reaction $^{11}\text{B}(p, \gamma)^{8}\text{Be}$ | YNSA, Maria Dolores |
| 11:40 | [139] Assessment of dye distribution in sensitized solar cells by microprobe techniques | BARREIROS, M. Alexandra |
| 12:00 | [45] Light element micro-analysis at AIFIRA facility | SORIEUL, Stephanie |
| 12:20 | [77] Channeling Contrast Microscopy of GeSn virtual substrates | OSIPOWICZ, Thomas |

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

Thursday 10 July 2014

Permanent Poster Exhibition - Agora

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

- Conveners: Olivero, Paolo

| time | [id] title | presenter |
|-------|---|-------------------|
| 08:30 | Invited: [100] MeV ion beam mask lithography of parylene-C and parylene-F | WHITLOW, Harry J. |
| 09:00 | Invited: [97] Ion beam writing on diamond in micrometer scale at the LIPSION nanoprobe | LUHMANN, Tobias |
| 09:30 | [141] Deep Ion Beam Lithography in diamond: towards the nanoscale | PICOLLO, Federico |
| 09:50 | [4] 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

| time | [id] title | presenter |
|-------|---|-----------------------|
| 10:30 | Invited: [123] Proton Beam Writing applications into DNA nano fluidics | VAN KAN, Jeroen Anton |
| 11:00 | Invited: [114] A flexible dielectrophoretic device with high-aspect-ratio pillar arrays fabricated by proton beam writing | NISHIKAWA, Hiroyuki |
| 11:30 | [128] Development of embedded Mach-Zehnder optical waveguide structures in PDMS thin films by proton beam writing | KADA, Wataru |
| 11:50 | [74] Fabrication of Three-dimensional SU-8 Microchannels by Proton Beam Writing for Microfluidics applications: Fluid Flow Characterisation | ALSHEHRI, Saad |
| 12:10 | [31] 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)

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

- Conveners: Vizkelethy, Gyorgy

| time | [id] title | presenter |
|-------|--|-------------------|
| 14:00 | Invited: [13] Development of Diagnostic Method for Deep Levels in Semiconductors using Charge Induced by Heavy Ion Microbeams | OHSHIMA, Takeshi |
| 14:30 | [42] Radiation Hardness of n-type SiC Schottky Diodes | PASTUOVIC, Zeljko |
| 14:50 | [7] Ion Electron Emission Microscopy at LNL | SILVESTRIN, Luca |

Refreshment - (15:10-16:00)

Session 9 - International collaborations and initiatives - Auditorium (16:00-17:45)**- Conveners: Rigato, Valentino**

| time | [id] title | presenter |
|-------|--|-------------|
| 16:00 | Invited: [140] 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**

Friday 11 July 2014

Session 10 - Nuclear Microprobe Applications: Geology and Environmental Science

- Auditorium (09:00-10:30)

- Conveners: Kristiansson, Per

| time | [id] title | presenter |
|-------|--|--------------------|
| 09:00 | Invited: [105] High-Speed PIXE: Fast Elemental Analysis with a Colour X-Ray Camera | BUCHRIEGLER, Josef |
| 09:30 | [58] Deuterium/Hydrogen microscopy in astrogeological material. | ROS, Linus |
| 09:50 | [56] Measurement of ratios of oxygen isotopes with pNRA at a microprobe beamline. | BORYSIUK, Maciek |
| 10:10 | [99] 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)

- Conveners: Castelli, Lisa

| time | [id] title | presenter |
|-------|--|----------------------|
| 11:00 | Invited: [142] Evidences for an Afghan provenance of lapis lazuli utilized for glyptic by ancient Egyptian combining micro-PIXE and XRF results | RE, Alessandro |
| 11:30 | [124] Correlation between Ionoluminescence signal and the manufacturing conditions of the clay bodies of ancient tiles | CORREGIDOR, Victoria |
| 11:50 | [28] Implementation of ionoluminescence in the IBA micromapping setup of AGLAE facility | PICHON, Laurent |
| 12:10 | [47] A comparative study of Etruscan and Tartesic gold jewels by micro-XRF | SCRIVANO, Simona |

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