

## WG3 - Technical Meeting 11th - 12th June 2018, Room S.0.2 Building 3 - Milan

**Monday, June 11th**

10.30 **Welcome**

Roberta Ramponi – *Institute for Photonics and nanotechnologies – CNR*

Gianluca Valentini – *Politecnico di Milano*

Stefano Taccheo – *Chair of the COST Action MP1401*

### **Scientific Session (Invited talks)**

11:00 Novel photonic tools for imaging through complex biological media.

Giannis Zacharakis - *Institute of Electronic Structure and Laser – FORTH - Greece*

11:30 Long wavelength Optical Coherence Tomography for Archaeology, Art History and Conservation Science.

Haida Liang - *Nottingham Trent University – UK*

12:00 Fibre lasers: the industrial perspective.

Chiara De Giorgi - *IPG Photonics - Italy*

12:30 Innovative laser-based methods for fabricating balloon expandable and self expandable stents.

Gökhan Demir - *Politecnico di Milano - Italy*

13.00 **Lunch**

### **Scientific Session**

14:30 Tunable High Energy Tm based Laser for Biomedical and Material Processing Applications

Salman Noach<sup>1</sup>, Uziel Sheintop<sup>1</sup>, Eytan Perez<sup>1</sup>, Udi ben Ami<sup>2</sup>

<sup>1</sup>Department of Applied Physics, Electro-optics Engineering Faculty, Jerusalem College of Technology – Israel; <sup>2</sup>Optisiv LTD. Kibbutz Einat – Israel

14:50 Phosphate glass based bioresorbable optical fibers

Ondřej Podrazký<sup>1</sup>, Pavel Peterka<sup>1</sup>, Ivan Kašík<sup>1</sup>, Robert Král<sup>2</sup>, Karel Nitsch<sup>2</sup>, Antonín Cihlář<sup>2</sup>, Aleš Bystřický<sup>2</sup>, Edoardo Ceci-Ginistrelli E.<sup>3</sup>, Diego Pugliese<sup>3</sup>, Nadia G. Boetti<sup>4</sup>, David Janner<sup>3</sup>, and Daniel Milanese<sup>3,5</sup>

<sup>1</sup>Institute of Photonics and Electronics of the Czech Academy of Sciences, Prague, Czech Republic

<sup>2</sup> Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic

<sup>3</sup> Politecnico di Torino, Department of Applied Science and Technology and RU INSTM, Torino, Italy

<sup>4</sup> Istituto Superiore Mario Boella, Torino, Italy

<sup>5</sup> Consiglio Nazionale delle Ricerche, Istituto di Fotonica e Nanotecnologie, Trento, Italy

15:10 Development of devices and structures by femtosecond fiber laser based micromachining for sensing and biomedical applications

Christos Riziotis

*National Hellenic Research Foundation, Theoretical and Physical Chemistry Institute – Greece*

15:30 Recent Advancements in Time-domain Broadband Diffuse Optical Spectroscopy for Biomedical Applications

Sanathana Konugolu Venkata Sekar, Pranav Lanka, Andrea Farina, Alberto Dalla Mora, Paola Taroni, Rinaldo Cubbedu, Antonio Pifferi

*Politecnico di Milano, Dept. of Physics, Milano, Italy*

15:50 Bioresorbable optical fibre Bragg gratings for sensing applications

Diego Pugliese<sup>1</sup>, Daniel Milanese<sup>1</sup>, Davide Janner<sup>1</sup>, Maria Konstantaki<sup>2</sup>, Stavros Pissadakis<sup>2</sup>, Antreas Theodosiou<sup>3</sup>, Kyriacos Kalli<sup>3</sup>, Nadia G. Boetti<sup>4</sup>

<sup>1</sup>DISAT- Politecnico di Torino and RU INSTM, Italy

<sup>2</sup>Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology—Hellas (FORTH) - Greece

<sup>3</sup>Photonics and Optical Sensors Research Laboratory, Cyprus University of Technology - Cyprus

<sup>4</sup>Istituto Superiore Mario Boella - Italy

16.10 **Coffee Break**

16:40 Functional Near-Infrared Spectroscopy at Small Source-Detector Distance using Fast-Gated SPAD Acquisitions: First in-vivo Measurements

L. Di Sieno<sup>1</sup>, D. Contini<sup>1</sup>, A. Dalla Mora<sup>1</sup>, A. Torricelli<sup>1</sup>, L. Spinelli<sup>1</sup>, R. Cubeddu<sup>1</sup>, G. Boso<sup>2</sup>, A. Tosi<sup>2</sup> and A. Pifferi<sup>1</sup>

<sup>1</sup>Politecnico di Milano, Dept. of Physics, Milano, Italy

<sup>2</sup>Politecnico di Milano, Dept. of Electronics, Information and Bioengineering, Milano, Italy

17.00 FLIM of a novel intracellular magnesium probe with an excitation source based a supercontinuum laser

Alessia Candeo, Azzurra Sargenti, Emil Malucelli, Cosimo D'Andrea, Stefano Iotti, Paola Taroni, Gianluca Valentini

<sup>1</sup>Politecnico di Milano, Dept. of Physics, Milano, Italy

<sup>2</sup>Università di Bologna, Department of Pharmacy and Biotechnology, Bologna, Italy

17.20 Laser-based spectroscopy and imaging of cultural heritage: A novel devices and method for Raman spectroscopy

S.Mosca, A.Artesani S.K Venkata Sekar, G. Ghirardello, A.Nevin, D.Comelli, A.Pifferi, G.Valentini<sup>1</sup>

<sup>1</sup>Politecnico di Milano, Dept. of Physics, Milano, Italy

<sup>2</sup>Institute for Photonics and nanotechnologies – CNR, Milano, Italy

20.00 **Dinner**

**Tuesday, June 12th**

***Scientific Session (Invited talks)***

9:30 Laser spectroscopy and imaging for conservation science  
Austin Nevin - *Institute for Photonics and nanotechnologies – CNR, Milano, Italy*

***Scientific Session***

10:00 The Behavior of laser treated surfaces of Titanium Grade 2 foils in aggressive environment

Tadeja Kosec<sup>1</sup>, Damjan Klobčar<sup>2</sup>

<sup>1</sup>Slovenian National Building and Civil Engineering Institute, Laboratory for metals, corrosion and anticorrosion protection, Dimičeva 12, SI-1000 Slovenia

<sup>2</sup>University of Ljubljana, Faculty for Mechanical Engineering, Laboratory for Welding LAVAR, Aškerčeva 6, SI-1000 Ljubljana, Slovenia

10:20 Light management in glass photonics: from structures to applications  
L. Zur<sup>1,2</sup>, T.N.L. Tran<sup>2,3,4</sup>, C. Meroni<sup>5,2</sup>, D. Massella<sup>5,2</sup>, A. Chiasera<sup>2</sup>, A. Chiappini<sup>2</sup>, Y.G. Boucher<sup>6,7</sup>, A. Vaccari<sup>8</sup>, V. Piccolo<sup>3</sup>, S. Varas<sup>2</sup>, C. Armellini<sup>2</sup>, A. Carpentiero<sup>2</sup>, D. Zonta<sup>3,2,9</sup>, B. Boulard<sup>10</sup>, D. Dorosz<sup>11</sup>, B. Rossi<sup>12</sup>, A. Lukowiak<sup>13</sup>, R. Ramponi<sup>14</sup>, G.C. Righini<sup>1,15</sup>, M. Ferrari<sup>2,1</sup>

<sup>1</sup>Centro di Studi e Ricerche "Enrico Fermi", Roma, Italy

<sup>2</sup>IFN-CNR CSMFO Lab. and FBK Photonics Unit, Povo, Trento, Italy

<sup>3</sup>Department of Civil, Environmental and Mechanical Engineering, Trento University, Trento, Italy

<sup>4</sup>Ho Chi Minh City University of Technical Education, Thu Duc District, Ho Chi Minh City, Viet Nam

<sup>5</sup>Department of Physics, Università di Trento, Povo-Trento, Italy

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<sup>8</sup>FBK CMM-ARES Unit, Povo, Trento, Italy

<sup>9</sup>Department of Civil and Environmental Engineering, University of Strathclyde, Glasgow, G11XJ, UK

<sup>10</sup>Institut des Molécules et Matériaux du Mans, UMR CNRS 6283, Université du Maine, Le Mans cedex, France

<sup>11</sup>AGH University of Science and Technology, Krakow, Poland

<sup>12</sup>Elettra - Sincrotrone Trieste S.S. 14, Km 163.5, Basovizza, Trieste, Italy

<sup>13</sup>Institute of Low Temperature and Structure Research PAS, Wroclaw, Poland

<sup>14</sup>IFN-CNR and Department of Physics, Politecnico di Milano, Milano, Italy

<sup>15</sup>IFAC CNR, Metropolitan City of Florence, Italy

10:40 Laser Assisted Ultrafast Scanning Electron Microscopy  
Silvia Pietralunga - *Institute for Photonics and nanotechnologies – CNR, Milano, Italy*

11:00 **Coffee Break**

- 11:30 Laboratory setups for laser-based systems testing  
Dan Sporea, Laura Mihai, Andrei Stancălie, Adelina Sporea  
*National Institute for Laser, Plasma and Radiation Physics Center for Advanced Laser Technologies - Romani*
- 11:50 Monitoring deposit height during Direct Laser Metal Deposition (DLMD) through coaxial laser triangulation  
Simone Donadello  
*Politecnico di Milano, Department of Mechanics, Milano, Italy*
- 12:10 Fiber lasers for micromachining in transparent materials  
Vibhav Bharadwaj  
*Institute for Photonics and nanotechnologies - CNR*
- 12:30 Effect of fiber laser welding on the microstructure characteristics of dissimilar welded joints between T91/TP316H ferritic/austenitic steels  
Ivan Petryshynets<sup>#</sup>, Ladislav Falat, Viktor Puchy  
*Division of Metals Systems, Institute of Materials Research, Watsonova 47, 04001 Košice, Slovakia*
- 12:50 ***Closing Remarks***