

## SEASONAL SCHOOL "PHOTONIC TECHNOLOGIES FOR SENSING APPLICATIONS" 2022/2023

January 23<sup>rd</sup> – January 27<sup>th</sup> - 2023

<b>Classroom Training</b>			
<b>Teaching</b>	<b>Teaching Methodology</b>	<b>Impegno orario</b> (relativo all'attività didattica assistita)	<b>University Credits (CFU)</b>
<b>Introduction to the Seasonal School</b>	<b>Frontal lesson</b>	<b>2</b>	<b>0.2</b>
<b>Basic of optical components</b>	<b>Frontal lessons + Laboratory Demo</b>	<b>8</b>	<b>0.8</b>
<b>Optical fiber sensor systems</b>	<b>Frontal lessons + Laboratory Demo</b>	<b>10</b>	<b>1</b>
<b>Imaging sensors for industrial applications</b>	<b>Frontal lessons + Laboratory Demo</b>	<b>8</b>	<b>0.8</b>
<b>Basics of photonic integration</b>	<b>Frontal lessons + Laboratory Demo</b>	<b>6</b>	<b>0.6</b>
<b>Photonic integration for sensing applications</b>	<b>Frontal lessons + Laboratory Demo</b>	<b>4</b>	<b>0,4</b>
<b>1 Industrial Seminar</b>	<b>Frontal Lesson (Rete Ferroviaria Italiana)</b>	<b>2</b>	<b>0,2</b>

- Introduction to the Seasonal School (Fabrizio Di Pasquale, 2 hours)
- Basic of optical components (Claudio Oton, 8 hours)
- Optical fiber sensor systems (Fabrizio Di Pasquale 8 hours, Yonas Muanenda 2 hours)
- Imaging sensors for industrial applications (Carlo Alberto Avizzano, 8 hours)
- Basics of photonic integration (Stefano Faralli, 6 hours)
- Photonic integration for sensing (Claudio Oton 2 hours, Antonella Bogoni 2 hours)

Industrial Seminar (2 hours) "Photonic applications in railway", Ing. Mirko Ermini - RETE FERROVIARIA ITALIANA

**SCHOOL PROGRAM****Monday January 23<sup>rd</sup>**

23 January 09:00-11:00 **INTRODUCTION TO THE SEASONAL SCHOOL "PHOTONIC TECHNOLOGIES FOR SENSING APPLICATIONS"**, F. Di Pasquale

23 January 11:00-13:00 Basic of Optical Components (Optical Fibers), C. Oton

23 January 14:30-16:30 Basic of Imaging Sensors (HW), C.A. Avizzano

23 January 16:30-18:30 Basic of Optical Components (Passive Optical Components), C. Oton

**WELCOME COCKTAIL (Sede Centrale) 18.30**

## **Tuesday January 24<sup>th</sup>**

24 January 09:00-11:00 Basic of Optical Components (Optical Sources), C. Oton

24 January 11:00-13:00 Basic of Imaging Sensors (SW), C.A. Avizzano

24 January 14:30-16:30 Basic of Optical Components (Detectors), C. Oton

24 January 16:30-18:30 Imaging Sensors for Industrial Applications 1, C.A. Avizzano

## **Wednesday January 25<sup>th</sup>**

25 January 9:00-11:00 Optical Fiber Sensor Systems (Basic of Optical Fiber Sensors), F. Di Pasquale

25 January 11:00-13:00 Basic of Photonic Integration 1, S. Faralli

25 January 14:30-16:30 Optical Fiber Sensor Systems (Fiber Bragg Grating Sensors), F. Di Pasquale

16:00 -16:30: TBD

25 January 16:30-18:30 Imaging Sensors for Industrial Applications 2, C.A. Avizzano

## **Thursday January 26<sup>th</sup>**

26 January 09:00-11:00 Optical Fiber Sensor Systems (Raman and Brillouin based Distributed Sensing), F. Di Pasquale

26 January 11:00-13:00 Basic of Photonic Integration 2, S. Faralli

26 January 14:30-16:30 Optical Fiber Sensor Systems (Hybrid Distributed Sensors), F. Di Pasquale

16:00 -16:30: TBD

26 January 16:30-18:30 Basic of Photonic Integration 3, S. Faralli

## **Friday January 27<sup>h</sup>**

27 January 09:00-11:00 Optical Fiber Sensor Systems (Distributed Acoustic Sensing), Y. Muanenda

27 January 11:00-13:00 **INDUSTRIAL SEMINAR**, "Photonic applications in railway", Mirko Ermini (Rete Ferroviaria Italiana)

27 January 14:30-16:30 Photonic Integration for Sensing Applications: LIDAR, A. Bogoni

27 January 16:30-18:30 Photonic Integration for Sensing Applications: FBG READING UNITS ON CHIP & BIO-CHEMICAL SENSING, C. Oton