IEEE INTERNATIONAL SCHOOL OF IMAGING (I2SI)

Preliminary Program

September 16-18, 2015

Macau, China

In conjunction with IEEE International Conference on Imaging Systems and Techniques (IST)
Sponsored by: IEEE Instrumentation and Measurement Society, University of Macau, and the TC 19 Technical Committee on Imaging Systems

http://ist2015.ieee-ims.org/

IEEE is the world's largest professional association, with nearly 500,000 members, dedicated to advancing technological innovation and excellence for the benefits of humanity. IEEE creates and promotes advancement of knowledge and world-changing technologies from computing and aerospace, to medical devices, healthcare, telemedicine, communications, sustainable energy systems, nanotechnology, robotics, and more.
The objectives of the IEEE International School of Imaging (I2SI) is to explore physical, engineering, molecular, biochemical and imaging principles, aimed to the advancement and generation of new knowledge related to the design, development, and applications of imaging and spectroscopy technologies, medical diagnostics, biocomputing, pharmaco-imaging, molecular and omics technologies, remote sensing, robotics, space instrumentation, and material characterization. Engineers, scientists and medical professionals from Industry, Government, Academia, and Healthcare who want to bridge technology and clinical disciplines in the multidisciplinary areas of imaging systems, pattern recognition, image processing, biocomputing, spectroscopy and medical diagnostic device industry, are invited to attend the School and interact with major worldwide experts, aimed at advancing the science of imaging, the development of novel visualization technologies, to increase the understanding of pathophysiology and metabolism, characterize and measure therapeutic efficacy of drugs; mass-spectrometry-based-*omics* technologies, remote sensing, autonomous aerial and underwater vehicles, ladars, lidars, space instrumentation, semiconductor inspection, material characterization; exploring multifaceted design principles and new applications of imaging that would lead ultimately to novel devices and technologies, standards and metrology with unsurpassable image quality, scalability, reconfigurability, high throughout, and miniaturization capabilities.

At this stage, the IEEE International School of Imaging focuses on the following areas

<u>Medical diagnostics</u>

- Translational imaging and theranostics
- Bioinformatics
- Immunohistochemical digital imaging
- Imaging devices, processing and pattern recognition
- Neuroimaging
- Imaging in drugs and medicine, drug characterization
- Cancer detection
- Molecular imaging and biology
- Spectrometry-based-*omics* technologies

<u>Imaging Devices, Modalities and Techniques</u>

- Cameras, microscopy, spectroscopy
- Displays
- Miniaturization
- Cancer detection
- Optical Imaging, bionanophotonics
- Tomographic imaging technologies (MRI, CT, SPECT, PET, multimodalities)
- Robotics, and surgical guidance imaging
- Terahertz imaging
- Image processing and pattern recognition
- Electric Computed Tomography (ECT)
- Millimeter waves, microwaves, inverse scattering imaging
- Image processing and pattern recognition
- Emerging imaging trends

<u>Remote Sensing</u>

- Remote sensing, surveillance, ATR, ladars & lidars
- Autonomous aerial and underwater imaging systems
- Advanced space instruments and satellite imaging
- Sensors for aerospace applications
- Image processing and pattern recognition

<u>Visualization, Inspection, Characterization</u>

- Semiconductor wafers, solar cells, nanomaterials, biomaterials and composites
- Active-passive sensors and illumination technologies
- Pharmaceutical and food processing vision inspection systems
- Image processing and pattern recognition

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Location:

Lying 65km to the west of Hong Kong, Macau is a city of duality. Its fortresses, churches and the culinary traditions of its former Portuguese colonial masters speak to a uniquely Mediterranean style on the China coast. These are intermixed with the customs, alleys, temples and shrines of its Chinese heritage. On the other hand, the Special Administrative Region (SAR) of Macau is the 'Vegas of the East', the only place in China where gambling is legal.

Macau has earned the title of the Oriental Las Vegas as it is a gamblers' paradise, however, it is also a beautiful city with clear streets, gardens and picturesque hilly landscapes. A wander around the city is a fantastic experience!

The University of Macau is the only public comprehensive university located in Macau, being the leading tertiary institution of the city which has excellence in teaching, research and service to the community. Founded in 1981, it is the oldest higher educational institution in Macau, as well as the largest university in the city in terms of faculty size and programs offered.

The Conference will take place at the University of Macau