Winter College on Applications of Optics and Photonics in Food Science

11-22 February 2019
Trieste, Italy

Further information:
http://indico.ictp.it/event/8643/
smr3272@ictp.it

The aim of the Winter College is to offer Ph.D. students and other emerging researchers broad training in the innovative applications of optics and photonics in food and agriculture. Deriving impact through research, development and entrepreneurship in this sector will be explored.

Directors:

S. SUMRIDDETCHKAJORN (NECTEC, Thailand)
A.G. MIGNANI (IFAC-CNR, Italy)
C. SIMPSON (University of Auckland, New Zealand)

Description:

Improving food, from production to processing, is one of the most important and successful contributions of modern optical and photonic innovations. Optical sensing and spectroscopy discoveries have provided huge advances in all areas, from identifying nutritional components, to uncovering contamination by adulterants and pathogens. Tailored light and light-based technologies also are used to better grow plants, purify water, kill pathogens, hatch eggs, and sort sperm and oocytes for herd control. The keen interest in photonics for food and agriculture is global and rapidly growing – a future with smart optics and photonics will succeed in feeding the world's people sustainably. In addition to lectures, there will be tutorials and hands-on activities. An ICTP PREPARATORY SCHOOL will be organized the week before the College (from 4 - 8 February 2019) for a limited number of selected participants.

Topics:

- Optical sensing and spectroscopic analysis, including hyperspectral methods;
- Remote sensing and imaging: fundamentals and applications for precision agriculture;
- Advanced vibrational spectrocopy including Raman scattering and IR absorption, SERS, low frequency Raman and imaging;
- Understanding OCT and laser vibrometery;
- Linear and nonlinear optical methods for sensing;
- Photonics and farming the oceans;
- Photonic advances driving the future of sustainable farming;
- Solutions-focused photonics R&D with real impact beyond the research lab;
- Low-cost spectroscopy for consumer use and limited resource settings;
- Photonics for application to packaging;
- Low-cost spectroscopy for consumer use and limited resource settings.

Local Organizers:

J. NIEMELA (ICTP)
M. DANAILOV (Elettra)

How to apply:

Online application:
http://indico.ictp.it/event/8643/

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Deadline:

21 October 2018

The Abdus Salam International Centre for Theoretical Physics
www.ictp.it
Trieste, Italy