



Institute of Food Sciences
National Research Council of Italy



**Second International Course on
Advanced Fluorescence Applications in Biotechnology & Biology
3-4 May 2017, Avellino, Italy**

Agenda

Wednesday, May 3rd

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| 9.00 - 10.00 | Participants registration |
| 10.00 - 10.30 | <i>Introduction to the Course</i> |
| 10.30 - 11.30 | <i>Introduction to Fluorescence</i> <ol style="list-style-type: none">Interaction of light with matterAbsorption of lightFluorescence emissionJablonski diagram |
| 11.30 - 11.45 | Coffee break |
| 11.45 - 13.00 | I. <i>Characteristic of Fluorescence</i> <ol style="list-style-type: none">SpectraQuantum YieldLifetimeAnisotropy |
| 13.00 | Packed Lunch |
| 14.00 - 15.00 | II. <i>Fluorescence Measurements</i> <ol style="list-style-type: none">Spectrofluorometers |

2. Fluorometers
3. Set-ups and formats
4. Corrections in fluorescence measurements

15.00 - 16.00 *III. Time-Resolved Fluorescence*

1. Time-Domain
2. Frequency-Domain
3. Lifetime Measurements
4. Anisotropy Decays

16.00 - 17.00 *IV. FRET*

1. Energy transfer in linked D-A systems
2. Demonstration of 3D FRET
3. Energy transfer in labeled macromolecules
4. Applications of FRET

Thursday, May 4th

10.00 - 11.00 *Fluorescence Techniques*

- a. Multi-Photon Excitation of Fluorescence
- b. Stimulated Emission Depletion (Light Quenching)
- c. Metal Enhanced Fluorescence
- d. Surface Plasmon Coupled Emission

11.00 -11.15 Coffee break

11.15 - 12.45 *Fluorescence in clinical diagnostics*

12.45 - 14.15 *Fluorescent proteins: lighting up life with the animal model C. elegans*

14.15 Group Picture and Packed Lunch

15.00 - 16.30 *Fundamentals of High-content screening for drug discovery*

16.30 - 17.30 *Fluorescence-based biosensors for advanced analyses*

17.30 - 18.00 Closing Remarks

Course Instructors

Ignacy Gryczynski is Professor and Director of Microscopy Core Facility in the Department of Cell Biology and Genetics, University of North Texas, Fort Worth, Fort Worth, TX, USA.

Sabato D'Auria is Director of the Institute of Food Science ISA-CNR, Avellino and Head of the Laboratory for Molecular Sensing at ISA-CNR, Avellino, Italy.

Francesco Baldini is a Senior Scientist at IFAC-CNR, Florence and Head of the Chemical & Biochemical Optical Sensors Group, Florence, Italy.

Elia Di Schiavi is a Scientist at IBBR-CNR, Naples and Head of the Laboratory of Neurobiology of *C. elegans*, Naples, Italy.

Angela Panarella is a post-doc at the High-content Screening Facility of the Telethon Institute of Genetics and Medicine (TIGEM), Pozzuoli, Naples, Italy.

Course Organizer

Sabato D'Auria, Director of ISA-CNR, Avellino Italy.

Course Coordinator

Olga Fierro is a Scientist at ISA-CNR, Avellino and the Head of the Laboratory of Organic Synthesis, Avellino, Italy.

Course Informatics assistance

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