Optical Fibers and Signal Processing Group (FOPS)

Workshop

Optical Fibers and Signal Processing

Joint Meeting with the IPN-Bio School

Valencia, Friday 3rd December 2021.

Venue: *Salón de Grados Lise Meitner, Facultad de Física, Campus de Burjassot, Valencia*.

SPONSORS

Universitat de València
PROMETEO/2019/048

Universitat Jaume I
PROMETEO/2020/029

IPN-Bio
H2020-MSCA-RISE-872049

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INTRODUCTION

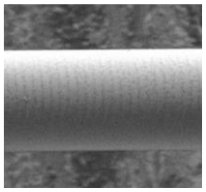
The research group **Optical Fibers and Signal processing** (FOPS) of the University of Valencia organizes the 2021 edition of this workshop, with the participation of the Photonics Research Group (GROC) of the University Jaume I, the Holography and Optical Processing Group (GHPO) of the University of Alicante, and the consortium of the IPN-Bio European Project.

The members of **FOPS group** are organized in three research units:

- The **3D Imaging & Display Laboratory** (3DID Lab),
- The **Laboratory of Fiber Optics** (LFO),
- The **Diffractive Optics Group** (DiOG).

The research of the group is focused on:

- Three-dimensional computational imaging. Application to the capture and display of macroscopic and microscopic scenes.
- Fabrication, modeling and design of photonic crystal fibers and special fiber components for lasers and new light sources, sensors and microwave photonics.
- Development of new diffractive optical elements for different applications like intraocular and contact lenses, optical trapping, and optical encryption.



Bio-Bragg grating patterned onto a 5 µm microfiber.

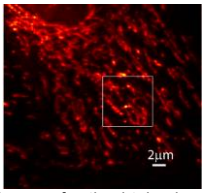


Image of actin obtained with structured illumination microscope.

GOALS

- Dissemination of group activities.
- Strengthening and promotion of scientific collaborations.
- Review of research lines and recent advances.
- Strengthening the collaboration between research groups and industry, particularly in the *Comunitat Valenciana*.

PROGRAM

Morning

9:00 Registration and welcome

Chairman: Dr. Genaro Saavedra

9:30 Multi-perspective 3D microscopy
Dr. Manuel Martínez Corral
University of Valencia, Spain.

10:05 enLIGHTened biophotonics: optical fiber-based biosensors
Dr. Martina Delgado-Pinar
University of Valencia, Spain.

10:40 Dual-comb interferometry for sensing and metrology applications
Dr. Vicente Durán
University Jaume I, Spain.

11:15 Coffee break

Chairman:Dr. José Luis Cruz

11:45 2D Materials Integrated Nonlinear Photonics
Dr. Zhipei Sun
Aalto University, Finland.

12:20 Rigorous numerical analysis of optical elements composed by liquid crystal
Dr. Jorge Francés Monllor
University of Alicante, Spain.

12:55 Small period long period grating fabricated using femtosecond laser inscription and sensing application
Dr. Kaiming Zhou
Aston University, United Kingdom.

13:30 Lunch

Afternoon

Chairwoman: Dr. Martina Delgado

15:30 Biophysical systems analyzed on a one-by-one basis by optical manipulation
Dr. J. Ricardo Arias-González
Polytechnic University of Valencia, Spain.

16:05 Development of equipment for the characterisation of specialty optical fibres
Dr. David Robinson
Arden Photonics Ltd., United Kingdom.

16:40 Non-linear Optical Response in Semiconductor Nanowires
Dr. He Yang
Summa Semiconductor Oy, Finland.

17:15 Temporal tailoring of ultrashort pulses in CPA high-power Yb fibre lasers
Dr. Sergio Rota
Fyla Laser, S. L., Spain.

17:50 Closing remarks

REGISTRATION: Please, send an e-mail to Amparo Pons (amparo.pons-marti@uv.es). Deadline: 12th November 2021