



UNIVERSITAT
DE VALÈNCIA

Workshop Optical Fibers and Signal Processing

Valencia, Friday 17th November 2023.

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

SPONSORS



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IPN-Bio
H2020-MSCA-RISE-872049

Organizers

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Organizing Committee

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Scientific Committee

Miguel V. Andrés
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Antonio Díez
Martina Delgado



INTRODUCTION

The research group **Optical Fibers and Signal processing (FOPS)** of the University of Valencia organizes the 2023 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.

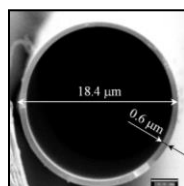
The members of **FOPS group** are organized in three research units:

- 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.



Thin wall capillaries for optomechanics and biosensing.

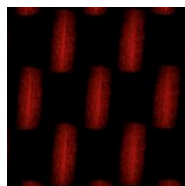


Image of *Arabidopsis thaliana* obtained with lightfield microscope.

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 Transmittance threshold in digital holographic microscopy

Dr. Emilio Sánchez-Ortiga
Polytechnic University of Valencia, Spain.

10:05 Forward Brillouin scattering in optical fibers: fundamentals and applications

Dr. Antonio Díez
University of Valencia, Spain.

10:40 Synthesis of nanomaterials by high throughput pulsed-laser based systems for bioapplicatos and 3D printed miniaturized actuators

Dr. Carlos Doñate-Buendía
University of Wuppertal, DEU/Univ. Jaume I, ESP.

11:15 Coffee break

Chairwoman: Dr. Martina Delgado-Pinar

11:45 Microwave-to-optical transduction using cavity optomechanics

Dr. Laura Mercadé
Polytechnic University of Valencia, Spain.

12:20 2-photon microscopy: the key to visualize transparent tissues

Dr. Juan Manuel Bueno
University of Murcia, Spain.

12:55 Silicon Nitride Photonic Platform for PICs

Dr. Carlos Domínguez
Institute of Microelectronics of Barcelona, Spain.

13:30 Lunch

Afternoon

Chairman: Dr. José Luis Cruz

15:30 Topological phase changes in fiber long period gratings

Dr. Francisco De Zela
Pontificia Universidad Católica del Perú, Perú.

16:05 Tunable photonic devices fabricated by laser processing

Dr. Daniel Puerto
University of Alicante, Spain.

16:40 Ytterbium-doped fiber laser with 'bad' cavity: An extremely simple system with severely diversified operational regimes

Dr. A. V. Kir'yanov and Dr. P. Muniz- Cánovas
Centro de Investigaciones en Óptica AC, Mexico.

17:15 Two-dimensional frequency combs in coherently driven optical Kerr micro-cavities

Dr. Carles Milán Enrique
Polytechnic University of Valencia, Spain.

17:50 Closing remarks

