

## ESCUELA

VII International School  
on Light Sciences and  
TechnologiesCore: Light in  
Communications,  
Sensing and  
Lighting**Horario y dirección de contacto**

Mañana de L a V: 9.00 a 14.00 h

**Santander**Campus de Las Llamas  
Avda. de los Castros, 42  
39005 Santander  
Tf.: 942 29 87 00**Madrid**C/ de Isaac Peral, 23  
28040 Madrid  
Tf.: 91 592 06 31 / 33**A partir del 17 de junio**Mañana de L a V: 9.00 a 14.00 h  
Tarde de L a J: 15.30 a 18.00 h**Santander**Palacio de la Magdalena  
39005 Santander  
Tf.: 942 29 88 00alumnos@uimp.es  
www.uimp.es

## Patrocinio



## Colaboración



Este curso es susceptible de ser reconocido como formación permanente del profesorado para el personal docente de los centros que imparten las enseñanzas reguladas en la Ley Orgánica 2/2006, de Educación, en base al artículo 21 y 29 de la Orden EDU/2886/2011, de 20 de octubre, por la que se regula la convocatoria, reconocimiento, certificación y registro de las actividades de formación permanente del profesorado.

Código 650G - ETCS: 2,5

**Dirección**

José Miguel López-Higuera

Professor in Electronics and Photonics and Head of the  
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University of Cantabria, Spain**Secretaría**

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Photonics Engineering Group  
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Photonics is the science and technique of generating, controlling, propagating, storing and detecting light waves and photons, which are particles of light. Photonics is the field of Light Sciences and Technologies. Light plays a vital role in our daily lives and is being an imperative cross-cutting discipline of science in the 21st century. It has revolutionized medicine, made possible international communication via the internet, enabled sustainable development and provided solutions to global challenges in education, energy, environment and agriculture. It continues to be a key discipline to link cultural, economic and political aspects of the global society. Today, it is widely accepted that the present century will depend as much on Photonics as the 20th century depended on electronics.

The United Nations Organization (UN) has recognized the **key or essential** role of Light Sciences and Technologies to raise global awareness and proclaimed 2015 as the International Year of Light and Light-based Technologies (IYL 2015). Aware of the key role of Photonics in the economies and in the societies of the XXI century, the UIMP has decided to create the **"International School on light Sciences and Technologies (ISLIST)"**.

This International school is envisioned to be a worldwide top International forum (third week of every June) on Light Sciences and Technologies in the framework of a "special top university" that is recognized as the "university of universities" and in a privileged environment "the Royal Magdalena Palace" in Santander, Cantabria, Spain. Each edition of this international school will have an intensification or main core in a specific application area and additional current hot topics. **Light in communications, sensing and lighting** is the core of this 2024 edition: VII-ISLIST.

It must be noticed that by changing the consecutive core, students and professional have the opportunity to receive and share knowledge, technique, visions, experience etc. several times from about 50 different top international lecturers, along their career. It is envisioned as a key value of ISLIST and it was, certainly, corroborated objectively from answers, of the previous edition attendee's surveys as you can observe on the final reports.

**Goals**

**International School on light Sciences and Technologies (ISLIST)**, has been conceived as a great opportunity to: i) **review, actualize and improve** the knowledge of **scientists, professionals and technicians**; ii) **contribute** to the education and to **enhance** the motivation of students (specially of **PhD students**); iii) **offer** an ideal frame for **networking** and also to contribute to the education of the **citizens**; iv) **ensure** that **politymakers, entrepreneurs**, and other "key actors" will be aware of the problem-solving potential of Photonics.

**Apertura matrícula**Desde el día 8 de abril de 2024  
(plazas limitadas)Solicitud  
online



## Lunes 17

- 10.15 h Opening Ceremony  
Opening Lecture
- 11.00 h The Next Generation of Optical Communications: will be massively Parallel  
**Peter Winzer**  
Founder and Chief Technical Officer, CTO, Nubis Communications
- 12.10 h Next Generation of Photonics Integrated Circuits as key for communications and sensing  
**Michael Leeby**  
Chief Executive Officer, CEO, Lightwave Logic, San Francisco, USA

### Light in Communications

- 15.30 h Programable Integrated Photonic Circuits: what?, why? and when?  
**José Capmany**  
Director, iTEAM Institute, Technical University of Valencia, Valencia, Spain
- 16.40 h Microwave Photonics  
**José Capmany**



## Martes 18

### Light in Communications

- 09.30 h Hollow Core Optical fibres: a revolution-nary technology for optical commu-nications, quantum applications and laser delivery  
**Francesco Poletti**  
Head of Group, Optoelectronic Research Centre, University of Southampton, UK
- 11.00 h Optical communications in space: Currents and trends  
**Elisabetta Rugi Grond**  
CEO, Thales Alenia Space, Switzerland, Switzerland  
Director, LIFI Research Development Centre, University of Strachclyde, Scotland, UK
- 12.10 h Optical Wireless Communication - a green wireless communication technology with high potential and great prospects  
**Ton Koonen**  
Emeritus professor, University of Technology, Eindhoven, Netherlands

### Light in Communications

- 15.30 h Round Table I  
Light in Communications: Challenges to face on Optical Communications  
**Michael Leeby**  
**Ton Koonen**  
**Elisabetta Rugi Grond**  
**Peter Winzer**  
Moderación  
**José Miguel López-Higuera**



## Miércoles 19

### Light in Sensing

- 09.30 h Sensing Using Light: doctrinal conception, currents and trends  
**José Miguel López-Higuera**
- 11.00 h Optical Fibre Sensors for Radiotherapy Dosimetry: Challenges and Opportunities  
**Sinead O'Keeffe**  
University of Limerick, Ireland, Optical Fibre Sensors Research Institute, Ireland
- 12.10 h Cold atom quantum sensors for field applications  
**Vincent Menoret**  
Head of Quantum Sensors R&D , Exail Quantum Systems, Institut d'Optique d'Aquitaine, Talence, France

### Light in Sensing: Laboratory On Site

- 15.30 h Advanced photonic and optofluidic devices fabricated in glass using femtosecond lasers for Lab-On Chip sensors  
**Roberto Osellame**  
Director, Institute of Photonics and Nanotechnologie-CNR, Milano, Italy
- 16.40 h Lab On Fiber: a key enabling technology for precision medicine  
**Andrea Cusano**  
Head, Optoelectronic and Photonic Group Università degli Studi del Sannio, Benevento (UniSannio), Italy



## Jueves 20

### Light in Sensing

- 09.30 h Optical sensing technologies for key environmental measurands in the I4.0 era  
**Kennet Grattan**  
OBE, FREng, Royal Academy of Engineering, Director of Instrumentation & Sensors Research Centre, City University of London, UK

- 11.00 h Engineered surfaces and devices for the display and imaging industries

#### **Valerio Pruneri**

Head, Optoelectronic Group, Instituto de Ciencias Fótónicas, ICFO, Barcelona, Spain

- 12.10 h Distributed Acoustic Senors (DAS) for Seafloor Seismic Monitoring: from earthquakes to tsunamis

#### **Sonia Martín López**

Co-Head of Photonics Engineering Group, of Alcala de Henares, Spain

### Light in Sensing and Lighting

- 15.30 h Round Table II  
Challenges to face in optical sensing technologies and lighting

#### **Kennet Grattan**

#### **Roberto Osellame**

#### **Mariana Figueiro**

Director, Light and Research Center, (LHRC), Icahn School of Medicine, Mount Sinai, NY, USA

#### **Mark Rea**

Former Director, Lighting Research Cener Rensselaer Polytechnic Institute. Now at Icahn School of Medicine at Mount Sinai, New York, USA

Moderación

**José Miguel López-Higuera**



## Viernes 21

### Light in Lighting

- 09.30 h Light's effects on human health, well-being, and behaviours  
**Mark Rea**
- 11.00 h Principles of Indoor and Outdoor Lighting for Healthy Environments  
**Mariana Figueiro**
- 12.15 h Closing Remarks



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