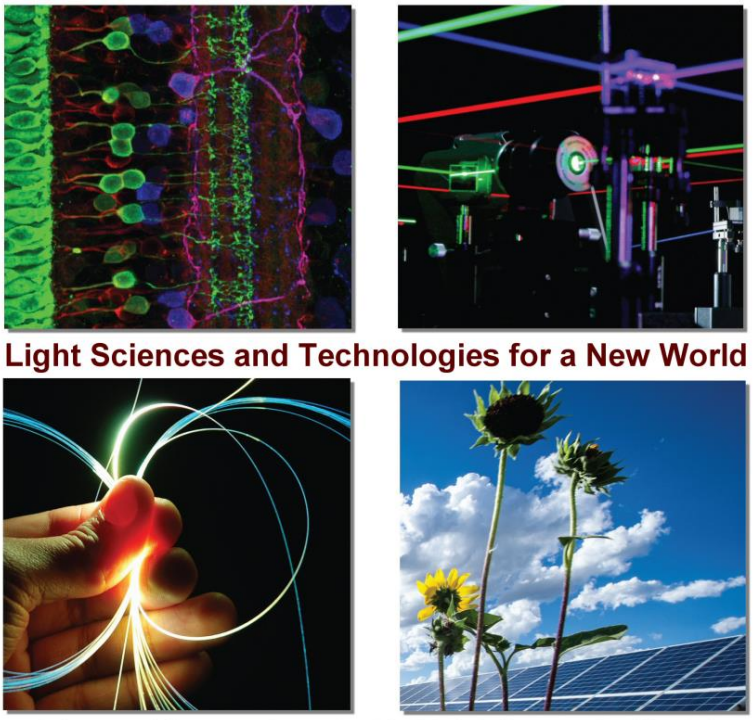
GOBIERNO DE ESPAÑA
MINISTERIO DE EDUCACIÓN, CULTURA Y DEPORTE

UIMP
UNIVERSIDAD INTERNACIONAL MENÉNDEZ PELAYO

Light Sciences and Technologies for a New World

(LiST)

Advanced Course, June 15-19, 2015, Santander, Spain



Key Links:

UIMP:
http://www.uimp.es

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For more details:
http://www.teisa.unican.es/UIMP2015

To see Invited talks and Bios:
www.teisa.unican.es/gif/index.php?option=com_content&task=view&id=904&Itemid=99

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SUMMARY

This Advanced Course has been conceived as a great opportunity to contribute to the education of citizens, to review and actualize knowledge in this **Key or Essential science and technology** for the development of the nations and, at the end of the day, of a new world.

It is also a great opportunity to ensure that policymakers are made aware of the problem-solving potential of Photonics.

Highly renowned Professors and researchers from the most prestigious institutions and, as well, several Presidents of the most reputed international Photonic Scientific Unions will participate in the meeting.

This advanced course has been programed into the frame of the IYL2015. Co-sponsored by SPIE, the attendees will enjoy an exhibition of panels and will also receive several commemorative gifts within their registration documents.

As co-sponsor of this course (LiST), the Hotel Santemar (www.hotelsantemar.com) will offer to all attendees very special accommodation fares: **65** Euros/night and **80** Euros/night per single and double rooms respectively (breakfast included).

Photonics is the science and techniques of generating, controlling, propagating, storage 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, opened up international communication via the internet, enables sustainable development and provides solutions to global challenges in education, energy, environment and agriculture and continues to be central to linking 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

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PROGRAM

Monday, 15

Why light matters for a new world?

10:00 H

Opening Ceremony:TBD

11:00 H

"Light's Twist: an optical technology that matters"

Prof. Miles Padgett, Lead the Quantum Imaging Hub, Vice-Principal for Research**,** University of Glasgow, UK

12:00 H

"Why photonics is essential for the sustainable development of the societies"

TBC

Evening /16:00 H

Round table I: **Light sciences and technologies Impacts**

Prof. Philip Russell,
OSA 2015 President.

Dr. R. Lieberman,
Spie 2015 Elect President

Prof. X. –C. Zhang
Director Rochester's Institute of Optics. University of Rochester (TBC)

Prof. John David Richardson,
Deputy Director of Optoelectronics Research Centre, University of Southampton, UK.

Prof. Jose Antonio Martín Pereda ***(Moderator)***
Real Academia de Ingeniería de España, Universidad Politécnica de Madrid, Spain.

TBC

Tuesday, 16

Light in health care, medicine and the environment

Morning: **Light in health care and medicine**

9:00 H

Optomechanical effects in microstructured fibres

Prof. Philip Russell
OSA President, Director of Max Planck Institute for the Science of Light, University Erlangen-Nuremberg, Germany

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10: 30 H
Cancer Imaging with Light
Prof. Bruce J. Tromberg
Director of Beckman Laser Institute and Medical Clinic, University of California, Irvine

11:30 H
Non-invasive Photonic micro-spectroscopic technologies for health care and medicine
Prof. Jüergen Popp
Director Institute of Photonic Technology, Jena, Germany

Evening: **Light sciences and technologies in the environment**

16:00 H
Terahertz technologies for a more safe and healthy environment
Prof. X.-C. Zhang,
Director Rochester's Institute of Optics, University of Rochester, USA

17:00 H
Light based technologies for a more healthy enviromment
Dr. R. Lieberman
Spie 2015 Elect President, President of Lumoptics LLC, California, United States

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Wednesday, 17

Light in communications and sensing

Morning: **Communication using light**
9:00 H
Título: TBC

10:30 H
Advanced Fiber Technologies for the next generation of Optical Communications systems
Prof. David Richardson,
Deputy Director of Optoelectronics Research Centre, University of Southampton, UK.

11:30 hours
Microwave Photonics: marrying the worlds of radiofrecuency and optics for future 5G communications and beyond
Prof. José Capmany Francoy,
Director iTEAM Instute, Technical University of Valencia, Spain

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Evening: **Sensing using light based approaches**

16:00 H
Sensing Using Light
Prof. José Miguel López-Higuera,
Head of Photonic Engineering Group, Universidad de Cantabria, Spain.

17:00 hours
Towards novel biomedical sensing tools based on the combination of light and nanotechnology
Prof. Romain Quindant
Head of Plasmon nano-optics group, ICFO- The Institute of Photonic Sciences, Barcelona, Spain.

Thursday, 18

Light in Energy and Manufacturing

Morning: **Clean energy and lightning using photonic knowledge and technics**

9:00 H
Título: TBC

10:30 H
Non-imaging optics for renewable energy and lighting
Prof. Juan Carlos Miñano,
Head of Optics Group, CeDInt, Universidad Politécnica de Madrid, Spain.

11:30 H
Solar cells for efficiencies of 50% and beyond
Prof. Carlos Algora,
Head of the III-V Semiconductors Group, Instituto de Energía Solar**,** Universidad Politécnica de Madrid, Spain.

Evening***:*** **Advanced manufacturing using light based technologies**

16:00 H
Advanced laser based manufacturing
Prof. Carlos Molpeceres Álvarez
Head of the Group of Advanced Laser-Based Manufacturing, Centro Laser, Universidad Politécnica de Madrid, Spain**.**

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17:00 H

Ultrafast and ultraintense laser based disruptive applications

Prof. Luis Roso,

Director of Centro de Láseres Pulsados, Salamanca, Spain.

Friday, 19

Education, training and Research

9:30 H

Round table: The needs of education of citizens, professionals and researchers on Light based Sciences and Technologies.

Prof. Maria J. Yzuel *(Moderator)*

Presidenta Comité español del Año Internacional de la luz 2015, Former Pass President of SPIE, Spain

Prof. Manuel López-Amo,

Head Optical-Communications Group Universidad Pública de Navarra Campus, Pamplona, Spain.

Prof. María Luisa Calvo,

Vicepresidenta, Real Sociedad Española de Física (RSEF), Universidad Complutense de Madrid, Spain

Prof. Luis Roso,

Director, Centro de Láseres Pulsados, Salamanca, Spain.

Prof. José Capmany Francoy,

Director iTEAM Instute, Technical University of Valencia, Spain

Prof. Jose Carlos Gómez Sal,

President of the R+D+I Executive Committee of CRUE, Rector Universidad de Cantabria.

High representative of Spanish Government on Science and Technology/TBC

12: 00

Closing ceremony

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