



# NEWSLETTER

COMMISSION INTERNATIONALE D'OPTIQUE • INTERNATIONAL COMMISSION FOR OPTICS

## ICTP hosted 2019 IDL flagship event

**The title of the main event of the International Day of Light in 2019 was “Illuminating Education” and it was oriented to attract attendees from developed as well as developing countries.**



**International  
Day of Light**

16 May

Presentations covered a wide range of topics, from inspiring science to practical career advice. Talks took place at the amphitheatre of the Leonardo Building at ICTP in Trieste. The total number of countries represented was 38.

**In 2017 the UNESCO** declared the 16 of May the International Day of Light. The flagship celebration of the 2019 International Day of Light (IDL) was held in the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste Italy, on the 16 of May, 2019. ICTP is governed by UNESCO, IAEA, and Italy, and is a UNESCO Category 1 Institute. A strong collaboration among UNESCO, ICTP and the International Day of Light Steering Committee in the 2019 flagship event made possible a great celebration.

The IDL was celebrated first in 2018 in the UNESCO Headquarters in Paris and this second time the number of attendees peaked at around 150. These included some of the Diploma students and Masters in Medical Physics students coming from developing countries as well as from neighboring institutions in Trieste. The ceremony was open with a message by video, also written in the program, from Ms. Audrey Azoulay, Director-General of UNESCO. Ms. Azoulay said “Light is a natural phenomenon which science has come to understand and learned to use, and it plays an essential role in all the sciences and their applications.

This message was followed by the welcome addresses of Prof. Fernando Quevedo, Director of ICTP and Prof. Roberta Ramponi, President of the ICO. Prof. John Dudley, Chair of the International Day of Light Steering Committee gave a bright and interesting introduction of the general Aims of the International Day of Light. He made a revision of two previous key points that led to the proclamation of the International Day of Light: Laserfest in 2010 and the International Year of Light (IYL) in 2015. Dudley said that in 2015 there were 13.168 events in 147 countries. The IDL started in 2018 and it is for the coming years. A great number of events are taking place in many countries in May this year (see [www.lightday.org](http://www.lightday.org)).

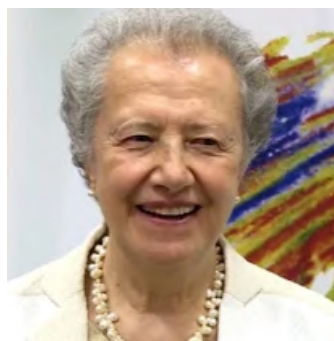
The plenary talk by Sir Michael Berry entitled “Optica Fantastica” was divided into four levels: rays, waves, polarization, and quantum. He said: “light is a topic ideally suited to engage interest and promote science outreach to the public of all ages”. Stephen Pompea, from the National Optical Astronomy Observatory, USA talked about “Astronomy Public Engagement” and described the many activities from the International Year of Astronomy 2009.



*From left to right: Joe Niemela (ICTP) Krisinda Plenkovich (SPIE), Federica Beduini (ICFO), Maria Yzuel (article's author) and John Dudley (IDL).*



The Students & Societies Session was a real highlight where a number of students from the international networks of the IDL partners EPS, IAPS, IEEE, OSA, and SPIE discussed issues both of how they promote science outreach, and how they see their careers in science developing in the future.



**Prof. María Yzuel** participated in the event representing the Spanish Committee of the IDL.

In the same session Rachel Won, International Editor of Nature Photonics, talked on how to make a Career in Science Communications, discussing her experience. To end this session, before lunch, Federica Beduini, from ICFO, Spain, spoke on Participatory Science and the Big Bell Test, a worldwide citizen science experiment that led to over 100,000 people participating in state-of-the art tests of quantum physics.

In the “Science and development” session, under the title “Lighting and the future” consisted of a series of short presentations addressing diverse challenges for science and education. Participants included: Sandro Scandolo from ICTP; Krisinda Plenkovich, SPIE, who presented the relation between Photonics and the goals of UN for Sustainable development; Brian Liebel, Illuminating Engineering Society (IES) Technical Director of Standards; John O’Hagan, Director of Division 6 of CIE and CIE Vice President for Standards who presented the different types of lamps: incandescent, fluorescent, compact fluorescent, and LED Lighting. O’Hagan also spoke on the concerns with lighting. Prajna Khanna, from Signify Foundation gave some important information on the world population: 992 millions of people (one on seven) live off-grid; 3.04 billions rely on solid fuels and kerosene for primary energy needs; 1.5 million die each year from respiratory diseases; they have developed “Light for better learning global program 2018-2019” in support of the UNESCO IYL having the target of lighting up 90 schools.

The second Keynote Talk was given by Prof. Cather Simpson from the University of Auckland, New Zealand, with the title “Using Physics to Feed the Planet”, explaining how a greater understanding of light is changing the way we grow food. Simpson presented the rise of vertical farms and in-doors agriculture for

growing food for an increasing population at the cities. Simpson showed the capability of the enterprise Engender to separate the cells for animals’ sex sorted semen. This technique increases the possibility of having better cows and better life in many countries.

“Disappearing in the dark” was introduced by Jason Socrates Bardi from the American Institute of Physics (AIP) and John Taylor from The Optical Society (OSA), they previewed a new documentary premiering in 2019 on an art installation in Washington, D.C. that opened on the first International Day of Light. This session with Saurabh Narang, an award-winning photographer from India, who presented his work on the Himalayan villages of Spiti Valley and the first International Day of Light celebration at the highest village in the world. In the afternoon was entitled “Career challenges”. Jess Wade from Imperial College London, UK, described her research on next generation OLEDs and also presented the Institute of Physics efforts to improve gender balance in physics classrooms and the UK analysis of women in the work place (11% professors are women).

Amna Abdalla Mohammed Khalid, vice-chair of the Next Einstein forum (NEF) Executive Committee, delivered a presentation on the Aims and Objectives of the NEF community of scientists in creating a unified African scientific identity to enable the robust scientific transformation of Africa through fostering an environment for innovative scientific discovery. The celebration finished with the Closing Remarks by Professor Joseph Niemela from ICTP and the IDL Steering Committee.

**Prof. María Yzuel**  
Former ICO VP and chair of  
the Spanish IDL Committee



# There is always Light around the corner

**The article's author, Dr. Imrana Ashraf, from the Department of Physics, Quaid-i-Azam University, Islamabad in Pakistan, won the ICO/ICTP Gallieno Denardo Award in 2004**



"I would like to acknowledge the constant and unconditional support of Prof. Niemela, towards Hands on optics activities and our out-reach programs. I am also thankful to my collaborators Dr. Raheel Ali, department of Physics Quaid-i-Azam University Islamabad, Pakistan and Dr. Jehan Akbar Department of Physics Hazara University Manshera, Pakistan and of course the students who volunteered their time to make sure it happened smoothly; in particular, Mr. Abdul Rahman, Ms. Sidra Jamil and Mr. Bilal Shafique, PhD students in the Physics Department at Quaid-i-Azam University."

**After the cold period of winter**, the month of March is a real spring season in Islamabad, as beautiful as it can be in any other part of the world. The leafless trees start a new life cycle with fresh green, tiny leaves, fruit trees are full of blossoms and violet patches of wild flowers grow up in grass beds. Quaid-i-Azam University, situated at the foot of the Margalla Hills, shares this Spring season with the rest of Pakistan; its various plants show many shades of green from deep hues to lighter ones.

This beautiful and peaceful atmosphere, with its implicit hope for rebirth, brings a lot of energy to do something positive and useful for the people of Pakistan; in our case especially the young and talented female students in high schools and the university.

Unfortunately, while Nature was celebrating its annual passage from Winter, it was a very tense time for mankind, especially at the Eastern border. Our airspace was closed repetitively during this time and the peace and tranquility was quite fragile. But we Pakistani as a nation, have learned over many such years that life must go on in its own pace. Inviting students from schools, which are far from Quaid-i-Azam University appeared to be problematic at the time, so a decision was made to invite students from a government school located near QAU on the 13<sup>th</sup> of March. The purpose of this activity was to celebrate the International Day of Light in collaboration with The Abdus Salam International Center for Theoretical Physics (ICTP), the Optical Society of America (OSA), The International Society for Optics and Photonics (SPIE) and The International Commission for Optics (ICO).

Dr. Muhammad Ali, the Vice Chancellor of Quaid-i-Azam University, Islamabad, chaired the session. We also had some honorable guests with us from The Abdus Salam International Center

for Theoretical Physics (ICTP), which include Prof. Sandro Scandolo (Head, Scientific Programs, ICTP), Prof. George Thompson (Head Associate and Federation Schemes ICTP) and Prof. Joseph Niemela (Optics Coordinator ICTP).

**Hands on optics:** The activity had been designed to promote Optics, Photonics and its applications among students in Pakistani Government (public) schools. The intent was to allow students to understand, using their minds and their hands, the natural phenomena of light and to develop new perspectives on related natural processes. This particular activity was mainly focused on students of 7<sup>th</sup>, 8<sup>th</sup> standards. An opening lecture was delivered to students about the importance of light and optics in daily life just to get them oriented towards science and society at the beginning. The rest was lots of active learning to let them -if nothing else- enjoy a day of science without any barriers.

While the twin cities of Rawalpindi and Islamabad are convenient for us, in terms of facilities, we also felt it was important to go where fewer other opportunities presented themselves to students. Specifically, we arranged a one-day event "Hands On Optics For Girls", in Mardan Women's University on the 12<sup>th</sup> of April 2019. Mardan is a city in the Khyber Pakhtunkhwa Province of Pakistan, home to the Pakistani Nobel Peace Prize laureate Malala Yousafzai. Located in the Valley of Peshawar, Mardan is the second-largest city of Khyber Pakhtunkhwa, after the nearby city of Peshawar, and is known for the hospitality of its citizens. Mardan is also known for its archaeological importance, particularly because of the Buddhist stupas of Takht-e-Bhai. It was our first Hands on optics activity in that region. Being a conservative part of Pakistan, female education is a challenge.

*It was a successful Spring for many young women in Pakistan, a time to flourish in scientific discovery alongside Nature's display of colors, and a brief moment in which to join others from around the world to experience joy and peace within the UNESCO International Day of Light.*



# OSK celebrates in Busan its 30<sup>th</sup> anniversary

**The Optical Society of Korea held its 30th Anniversary Conference in Busan from 14 till 17 July**



Prof Byoungho Lee from Seoul National University is the current president of the Optical Society of Korea and author of this article.

**The Optical Society of Korea** (OSK) held its conference Optics and Photonics Congress (OPC) in celebration of its 30th Anniversary in BEXCO, Busan, Korea from July 14 till July 17, 2019. The OPC 2019 consisted of two parts: OSK Summer Annual Meeting and the Joint Symposia organized by the OSK, the Optical Society (OSA) and the Optical Society of Japan (OSJ). SPIE sponsored the OSK 30th anniversary conference banquet.

Prof. Donna Strickland (University of Waterloo, Canada), 2018 Nobel Laureate in Physics, and the presidents of ten academic societies – European Optical Society, OSA, SPIE, OSJ, IEEE Photonics Society, Japanese Society for Applied Physics, Chinese Optical Society, Chinese Society for Optical Engineering, Taiwan Photonics Society, Photonics Society of Poland – sent congratulatory letters to OSK.

More than 600 participants shared their recent advances in research and discussed together on optical science, optical technology, digital holography and information optics, quantum electronics, photonics, biophotonics, display, quantum optics and quantum information, and lithography. Korean government recently determined to support group funding on researches on quantum technologies and holography technologies. Hence those topics attracted more audience.

In particular, in celebration of OSK's 30th Anniversary, OPC 2019 organized a panel discussion on "Challenges and Future Directions of Optical Academic Societies" moderated by Dr. Byoungho Lee (President of

OSK). Panelists – Dr. Ursula Gibson (OSA President), Mr. Jim Oschmann (SPIE President), Dr. Susumu Yamaguchi (OSJ President), Dr. Gilles Pauliat (EOS President-elect), and Dr. Malgorzata Kujawinska (SPIE former president and delegate from Photonics Society of Poland) – discussed the roles of the optical societies in advancing research in optics and photonics for the 4th industrial revolution and educating the younger generation in optics. The society leaders agreed to share information and help each other in the activities of making policies of boosting optics and photonics in each country. Some panelists addressed the significance of the roles of ICO and the International Day of Light as global optics and photonics initiatives.

The OPC 2019 also organized the Women in Optics session where Dr. Ursula Gibson, Dr. Malgorzata Kujawinska and Dr. Ray-Hua Horng (representing Taiwan Photonics Society) presented their thoughts and experiences, which was followed by discussion with audience.

Thirty years ago, on October 20, 1989, Korean optical scientists led by late Dr. Sang Soo Lee (former vice-president of ICO) held the general assembly meeting to establish OSK in Seoul, which was followed by a series of efforts for the establishment. The foundation of OSK was finally approved by Korean government on February 20, 1990. Prof. Byoungho Lee (Seoul National University) is serving as OSK President from March 2019 till February 2020 and OSK designated this one year period as the year celebrating its 30th anniversary. The OPC 2019 was a main event for its celebration.

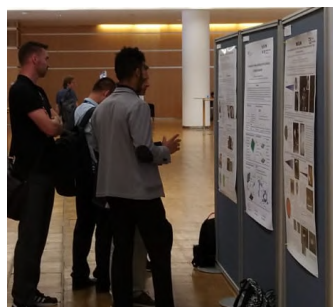
*Group photo of attendants to the congress in Busan where the Optical Society of Korea celebrated its 30<sup>th</sup> anniversary.*





# EOS at the World of Photonics Congress

**The European Optical Society (EOS) organized the Optical Technologies conferences as part of the World of Photonics Congress in Munich, Germany, 24-26 June 2019.**



These conferences included the *Manufacturing, Tolerancing, and Testing of Optical Systems (MOS)*, and *Optofluidics (OF)*. The World of Photonics Congress was once again a meeting place for the international science elite with lectures by Nobel Prize winner Gérard Mourou, gravitational physicist Carsten Danzmann, quantum physicist Anton Zeilinger and other renowned scientists. To bridge the gap between research and industry, the attendees of the conferences had free access to the LASER World of Photonics, the world's leading trade fair for photonics, with 1,325 exhibiting companies. Approximately 34,000 visited the exhibition. The industrial poster session was once again a success for the MOS conference and attracted 13 posters from companies wanting to promote their know-how to the attendees. The posters

were visible all throughout the conference in the conference room. This session will again be organized within the upcoming EOS Topical meeting on Integrated Optics, as well as the EOS Annual Meeting (EOSAM) in Porto, Portugal 2020. The best student papers were awarded for the EOS conferences, sponsored by Springer-JEOS:RP. The Award included a diploma, free submission to JEOS:RP open access journal, as well as a book price of the winner's choosing. Upcoming EOS events are the Diffractive Optics congress in Jena (Germany) from 16 till 19 next September and the Integrated Optics conference in Joensuu (Finland) 26-28 November. More information can be found in the EOS website: [europeanoptics.org](http://europeanoptics.org).

**Elina Koistinen**  
EOS Executive Director

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## Forthcoming events with ICO participation

Below is a list of 2019 upcoming events with ICO participation. For further information, visit the new ICO web at <http://e-ico.org/node/103>.

### 4–7 September 2019

**Optisud: ICO-IUPAP Meeting on Optics & Applications to Sustainable Development**  
Carthage, Tunisia  
Contact: Prof. Mourad Zghal  
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### 23–27 September 2019

**RIAO-OPTILAS-MOPM 2019 Iberoamerican optics meeting**  
Cancún, Mexico  
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[riao2019@cio.mx](mailto:riao2019@cio.mx)  
[www.riao.org.mx/optilas\\_2019/](http://www.riao.org.mx/optilas_2019/)

### 20–24 September 2020

**Optics 2019: 7<sup>th</sup> International Symposium on Optics & its applications**  
Yerevan-Ashtarak, Armenia  
Contact: Narine Gevorgian  
[gevorgyan.narine@gmail.com](mailto:gevorgyan.narine@gmail.com)  
<http://www.ift.uni.wroc.pl/~optics2019/>

### 19–22 October 2019

**ICOL 2019: International conference on Optics and Electro-Optics**  
Dehradun, India  
Contact: Sh. Sudhir Khare  
[info@icol2019.com](mailto:info@icol2019.com)  
<http://icol2019.com>

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