



NEWSLETTER

COMMISSION INTERNATIONALE D'OPTIQUE • INTERNATIONAL COMMISSION FOR OPTICS

The ICO & OWLS World Congresses in the Times of the Covid-19

Prof. Alexander Heisterkamp from the Gottfried Wilhelm Leibniz University Hannover (Germany) is the Secretary General of the International Society on Optics Within Life Sciences (OWLS)



Prof. Heisterkamp is the leader of the biophotonics group at the Institute for Quantum Optics in Hannover.

Not surprisingly, like any one of us around the globe the thoughts of the chairs and the board of ICO and OWLS 2020 circle around the corona crisis and the impact on society and onto the life of every single one of us. We debate about when and to which date to move our conference and what we possibly might be facing in the coming months and year. Certainly, the world will be a different one, once this crisis has passed.

However, as an optics community, any of us may offer solutions to such a crisis, which might not be the short time solutions we currently need, but could help in fighting pandemic threats in the coming future. Photonic technologies are found in nearly every aspect of our modern life, such as manufacturing, sensing or laser surgery. Even more in a large part of molecular medicine and the life sciences in general, optical technologies play a key role in studying diseases and answering diagnostics questions, such as the

positive corona infection diagnosis via qPCR with subsequent optical readout or the antibody test using plasmonic technology.

This is why we are convinced, that a coming ICO and OWLS congress should also discuss and further focus on additional topics like optical pathogen detection and diagnostic tools for low resource settings, which can provide valuable means in a future fight against another pandemic threat. Extending our research might offer affordable ways for the people around the globe to fight upcoming pandemic threats and jointly tackle these worldwide problems. We will keep you updated on any news related with the celebration of ICO25 OWLS16 congresses in Germany.

**Prof. Alexander Heisterkamp
Chair of OWLS-16 Congress**



Members of the biophotonics group at the Institute for Quantum Optics in Hannover

Awarding Optical Telecommunications in Malaysia

Dr Kok-Sing Lim is the recipient of ICO/ICTP Gallieno Denardo Award 2020.



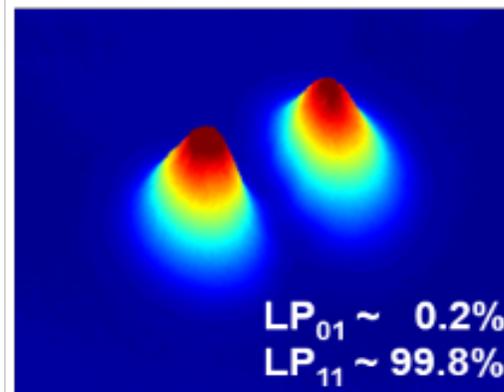
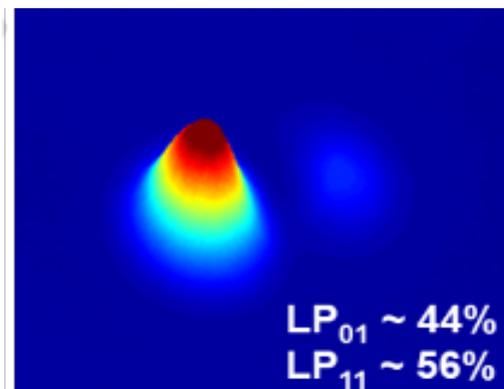
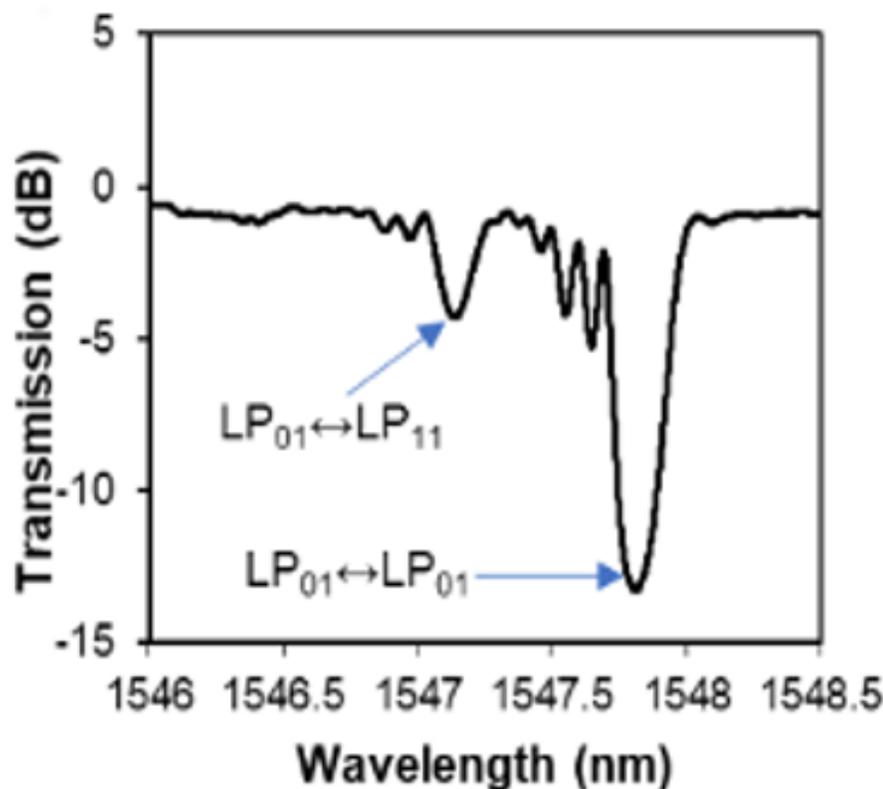
Dr. Lim is now Senior Lecturer at Photonics Research Centre, University of Malaya in Kuala Lumpur, Malaysia.

Dr. Kok-Sing Lim works in the field of mode-division multiplexing (MDM) technology specifically in the development of an optical system for efficient mode excitation and management in few-mode fibre (FMF). The orthogonality of various linearly polarized (LP) modes in the FMF is the key enabler for a greater transmission capacity per fibre. It is a potential solution to the transmission bottleneck in single-mode fibre (SMF). There is a pressing need for developing the basic FMF-compatible components that serve similar purposes of their SMF-counterparts such as coupler, isolator, fibre Bragg grating and etc. Dr Lim and his group members focus on the development of few-mode fibre Bragg grating (FM-FBG) for spatial mode filtering and mode conversion [IEEE Photonic Tech L, 27(16), 1713-1716, 2015]. The presence of multiple LP modes in the fibre gives rise to the excitation of multiple Bragg resonant wavelengths, the results of self-mode coupling and cross-mode coupling among the LP modes in the FM-FBG. The self-mode coupling resonant wavelengths can be used as selective mode-pass/stop filters with good rejection ratios (90-99%) whereas the cross-mode coupling

resonant wavelengths can be used for mode conversion between two different LP modes. These optical properties can be exploited for a higher level system such as optical delay line [IEEE J Quantum Electron 54(5), 1-7, 2018].

Besides MDM technology, Dr Lim is also interested in optical fibre sensor technology, optical measurement and medical laser devices. Apart from the faculty responsibilities, he is actively involved in some industrial projects related to his expertise in fibre-optic sensing and non-destructive test. At the same, he promotes the adoption of optical and photonic technology in other engineering sectors and industry in the country. He is a corporate member of the Institute of Engineers Malaysia (IEM), a registered Professional Engineer in telecommunication discipline with the Board of Engineers Malaysia (BEM).

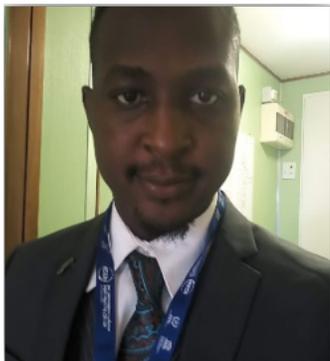
Prof. Mourad Zghal
Chaired the committee for the
ICO-ICTP Gallieno Denardo Award



Left: Transmission spectrum of an FM-FBG under LP_{01} mode excitation. Right Top: A corrupted LP_{11} beam profile with a modal purity (Experiment). Right Bottom: The transmitted beam through an FM-FBG at the $LP_{01}LP_{01}$ self-mode coupling resonant wavelength. The modal purity is greatly improved to 99.8% after the 'mode' filtering.

ICTP awards open doors of hope

Akinwumi Akimpelu was awarded at the Winter College in Optics at ICTP.



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Akinwumi Akimpelu got his career path boosted when he was selected to participate at the 2020 Winter College on Optics at ICTP as an affiliate, co-sponsored by ICTP and Covenant University in Ota (Nigeria). This was the first time he will travel out of his country. Some of his most fascinating experiences were the practical sessions on interferometry and optics or the visit to the Elettra Synchrotron facility. Akinwumi took part in one of the poster sessions and he was given a second place award sponsored by the International Commission for Optics ICO and The Optical Society. This award has opened a door of hope for Akinwumi as , after the ceremony, some international researchers showed interest in collaborating with him.

Akinwumi has a Bachelor of Technology with Honors in applied Physics from Ladoke Akintola University of Technology, Ogbomoso (Nigeria) and he worked on Einstein Field Equations with Professor Odunudun. In 2016, he earned his first Master of Science degree from University of Ibadan, Nigeria in Solid State Physics under the supervision of Dr. Omololu

Akin-Ojo. In addition, during this MSc program, he worked on numerical simulation and modeling of solar cells in two Dimensions. After successful completion of first MSc studies, in 2018, Akinwumi got a lecturing/research job at Covenant University where he put in for another MSc in renewable energy and material science. He has co-authored more than twenty six (26) publications in the first two years of working in Covenant University and the award has highly motivated him “to work harder and make impact in science” in his own words. Akinwumi is so grateful to science because it has changed his people’s perspective: “The part of Nigeria he grew up believe that only medical doctors can make headway in life, but ICTP has proven them wrong”. He is an excellent example of how hard work, talent and determination, coupled with international organization is allowing science to flourish in developing countries.

Prof. Joe Niemela

Is the local organizer of

ICTP’s Winter College in Optics



Akinwumi Akimpelu , receives the award at ICTP from Anthony M. Johnson, former OSA President.

Forthcoming events with ICO participation

Due to the international covid-19 crisis, information on the pending events sponsored by the International Commission for Optics will be updated in the ICO website: <http://e-ico.org>

Responsibility for the correctness of the information on this page rests with the International Commission for Optics (ICO); <http://www.e-ico.org/>. **President:** Prof. Roberta Ramponi, Director IFN-CNR, Politecnico di Milano, Italy; roberta.ramponi@polimi.it. **Treasurer:** Prof. Joseph Niemela, International Center for Theoretical Physics, Italy; niemela@ictp.it. **Secretary:** Prof. Humberto Michinel, Universidade de Vigo, Spain; hmichinel@uvigo.es. **Associate Secretary:** Dr. Frank Höller, Carl Zeiss AG, Germany; frank.hoeller@zeiss.com

