

**IUPAP C17: Commission on Laser Physics and Photonics  
Report to IUPAP Council and Commission Chairs Meeting, Taipei, Taiwan, 22-23 October  
2016**

**1. IUPAP C17 2017 Young Scientist Prize**

The call for nominations for the 2017 IUPAP C17: Laser Physics and Photonics Young Scientist Prizes is being launched with a deadline for nominations of 20 December 2016 (see Appendix A). Agreement has been negotiated for the awards ceremony to be held at CLEO-PR 2017 (within Photonics@SG) 31 July to 4 August 2017 in Singapore.

The eligibility for nomination has been set as ten years since the commencement of PhD rather than no more than 8 years post PhD in order to remove an inequity that arises from the different average time spent on a PhD in different parts of the world.

**2. International Year of Light (and Light Based Technologies) 2015**

The final report for the International Year is available on the website <http://www.light2015.org/Home/About/IYL-Final-Report.html> . Overall the year has been judged to have been a resounding success with future benefits to continue to be derived.

An excerpt from the website description of the 272 page report:

“This report aims to give a synthetic account of IYL 2015, first describing its origins and goals, and then providing a summary of the many events and activities that took place worldwide. The report also contains information on organisation and communications, and it is hoped that these details may provide guidance for others who may wish to organize a similar global outreach initiative in the future.

I believe that everyone involved in IYL 2015 can feel immensely proud of what has been achieved. We can also feel confident that many of the partnerships established during IYL 2015 will continue. It is sometimes difficult to see how we as individuals can contribute to solving issues of global importance, but I believe that the International Year of Light has provided a timely reminder that through our commitment to education and outreach, we can really make a difference.

It is now up to us to build on what we have learned and what we have accomplished during 2015 to continue to work together for the betterment of all.

*John Dudley, Chair of the IYL 2015 Steering Committee”*

**3. IUPAP C17 Sponsored conference**

**International Laser Physics Workshop 2016 (LPHYS'16), held in Yerevan Armenia, 11-15 July 2016.** <http://www.lasphys.com/workshops/lasphys16/>

Report of Professor Koryun Oganesan, Chair of Local Organising Committee, edited by Deb Kane

The LPHYS'16 paid tribute to the three major anniversaries:

**100th Anniversary of Alexander M Prokhorov's Birth,**

**100th anniversary of the Optical Society (OSA)**

## 25th anniversary of the Laser Physics Workshop

Alexander M Prokhorov, was one of scientists honoured for the invention of lasers as a Nobel Prize winner in physics of 1964 . He also initiated the first International Laser Physics Workshop held in 1990. Over the following 10 years he was the esteemed leader and chairman of the conference. After his death in 2002, his disciples committed themselves to the ongoing organization of the conference. The conference is held annually, and almost every time in different countries of Europe, America and Asia. The conference website has a map on which you can trace the geography of its routes. This is Russia, Italy, Spain, France, Brazil, USA, Canada, Norway, Germany ...  
<http://www.lasphys.com/workshops/history>



The conference was held for the first time in Yerevan, Armenia, in 2016 (11-15 July) <http://www.lasphys.com/workshops/lasphys16>. It opened on the very day of the 100<sup>th</sup> anniversary of AM Prokhorov's birth. 2016 was also the first year LPHYS has been held in a Commonwealth of Independent States country. The choice of Armenia for 2016 was underpinned by several factors. The main one was that laser physics school in Armenia is still at operating at a high level, despite challenges. Secondly, the President of National Academy of Science of Armenia, Professor Radik Martirosyan, was a graduate student of AM Prokhorov. Living Prokhorov students can be counted on the fingers, so that it Radik Martirosyan was instructed to make a presentation about the famous scientist.

The conference was marked by yet another anniversary - the 100th anniversary of the Optical Society (OSA). Past president of the society - the famous American scientist Professor Joseph Eberle, also called for the conference to be held in Yerevan. For many years cooperation between the Yerevan Physics Institute (now the Alikhanyan National Science Laboratory) and the Moscow Prokhorov Institute of General Physics, Russian Academy of Sciences has continued. This close scientific relationship, and its international recognition, also supported the decision to hold a jubilee conference in Yerevan. Chairman of the local organizing committee of the conference, Prof. Koryun Oganessian, a senior fellow at the Theoretical Department of the Alikhanyan National Science Laboratory (Yerevan Physics Institute) also has many articles co-authored with Prokhorov. The 2016 the conference included 8 parallel Seminars covering topics from "Modern Trends in Laser Physics" to "Quantum Information Science", and one Symposium on "Extreme Light Technologies, Science and Applications". There were 361 participants from 35 countries. 17% of the participants were female. The conference, as noted by the participants, was successful. All aspects of laser physics were lit, new and interesting trends and results in the areas of laser physics, as coherent light sources, nonlinear and quantum optics, laser spectroscopy of atoms, modern trends in laser physics, the study of the optical properties of nanostructures and luminescent substances etc., in the program forum reflected several scientific discoveries of 2015-16 and, of course, the most spectacular of them - heralding a new era in the history of science - the detection of gravity waves by LIGO. Gravitational waves are not relevant to laser physics, but they were able to be registered through the application of the highest achievements of the laser physics, laser engineering and technology.

The core contingent of participants are professors. These prominent scientists bring to the conference their graduate students early career researchers. Many of those who have participated in LPHYS as graduate students, have become renowned scientists in their own right. There is a backbone of some 60 people who have not missed a single conference in the series.

In addition to the high quality scientific program, Armenia, with its ancient architectural monuments and magnificent natural heritage left an indelible impression on all participants. The sponsorship from the International Union of Pure and Applied Physics supported participants from Ukraine, Kazakhstan, Bosnia & Herzogovina, and Russia (two female).



Professor Koryun Oganesan acknowledging sponsors during the opening ceremony of the conference.

#### **4. The 100<sup>th</sup> Anniversary of the birth of Prof AM Prokhorov**

This anniversary has been celebrated around the world, including in Australia, Prokhorov's birthplace. Russia issued a commemorative stamp.

<http://1015fm.com.au/2016/08/queenslander-alexander-prokhorov-meet-australias-forgotten-nobel-prize-winner/>

<http://www.abc.net.au/radionational/programs/breakfast/scientists-celebrate-the-laser/7585798>

<http://lpl.creol.ucf.edu/News.aspx?NewsID=659>

<http://www.diomedia.com/100-years-since-the-birth-of-alexander-prokhorov-russian-physicist-nobel-prize-laureate-d-2002-birth-anniversary-stock-images-62044-11072016.html>

<http://www.photonics-expo.ru/en/news/index.php?id4=7974>

<http://iopscience.iop.org/journal/1555-6611/page/Special-issue-dedicated-to-Alexander-M-Prokhorov>

<http://iopscience.iop.org/article/10.1070/QEL16172/meta>

<http://lpl.creol.ucf.edu/News.aspx?NewsID=659>

[https://www.researchgate.net/publication/307558508\\_Prokhorovman\\_and\\_laser\\_on\\_the\\_100\\_th\\_anniversary\\_of\\_his\\_birth](https://www.researchgate.net/publication/307558508_Prokhorovman_and_laser_on_the_100_th_anniversary_of_his_birth)

[https://www.facebook.com/TheTablelander/photos/?tab=album&album\\_id=1114400621955275](https://www.facebook.com/TheTablelander/photos/?tab=album&album_id=1114400621955275)

<http://postcardpress.ru/en/stamps/2109-100-years-since-the-birth-am-prokhorov-1916-2002-physicist-nobel-prize-laureate.html>

#### **4. Ongoing Work of the Commission**

A member to take over as Chair in 2018, with the support of the current membership, has been identified. Discussions have been initiated on a number of issues relevant to the Commission.

**Appendix A. Call for Nominations IUPAP C17 YSP 2017**



**International Union of Pure and Applied Physics (IUPAP)**  
**Commission 17: Laser Physics and Photonics Young Scientist Prizes**

The IUPAP Commission 17 - Laser Physics and Photonics - is seeking nominations for its biennial Young Scientist Prizes. Two prizes are available for award. One prize is for outstanding contributions of a fundamental nature. The other is for outstanding contributions of an applied nature. Both prize winners will have demonstrated significant achievement, and exceptional promise for future achievement in the areas of laser physics and/or photonics. The recipients must be no more than ten years from the commencement of their PhD (excluding career interruptions) by the deadline for nominations. They must have a PhD.

**Nomination Requirements and Deadline for Submission:**

Nomination for the Prize must be by a senior member of the research community, with one or two additional letters of endorsement by supporters. The deadline for submissions of nominations is 20 December 2016. A complete nomination packet submitted by a senior nominator will consist of:

- A cover letter by the nominator (please indicate clearly whether the nomination is for the prize for fundamental or applied aspects);
- A citation for the Prize (30 words or less referring to the nominee by gender);
- One or two additional letters of endorsement for the nomination, one of which must be from a senior scientist who was not a former supervisor of the nominee at either the graduate or postdoctoral level and who is not a close collaborator of the nominator;
- a one-page statement by the nominee explaining the achievements and the overall significance of the work;
- Up to three salient publications co-authored by the nominee;
- An up-to-date, one page CV of the nominee, which includes the PhD commencement date;
- A list of key publications, including citation statistics; patents, etc.

Nomination packages must be in the form of a single consolidated PDF file or a ZIP archive.

Please send all material via email to the IUPAP-C17-YS Prize Committee Chair, Professor Deb Kane, [deb.kane@mq.edu.au](mailto:deb.kane@mq.edu.au), by the deadline of 20 December 2016.

**The Prize:** Each Prize will consist of 1,000 Euro, a Medal, and a Certificate.

**Prize Selection:** The prize selection committee will consist of C17 commission members. The Prize winners will be announced on the IUPAP website.

**Prize Presentation:** The IUPAP C17 Young Scientist Prizes will be awarded at the 12<sup>th</sup> Conf. on Lasers and Electro-Optics Pacific Rim (CLEO-PR 2017), to be held in Singapore, 31 July-4 August 2017, within Photonics@SG (<http://photonics2017.org/index.php>).

For information: the deadline for submission of abstracts to CLEO Pacific Rim (and OECC and PCG) is December 31, 2016. <http://photonics2017.org/orgcleo.php>

IUPAP welcomes applications from outstanding women and other underrepresented groups.

## Appendix B. Commission Membership 2014-2017

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