

## **Commission C15: Atomic, Molecular and Optical Physics**

Report (May 2018 – October 2018) to the IUPAP Council & Commission Chairs meeting

Submitted by Roberto Rivarola (Chair)

### **C15 officers:**

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### **C15 Activity:**

The major activities from May 2018 to October 2018 are categorized into the following items.

#### **1. IUPAP C15 Young Scientist Prize**

The IUPAP Young Scientist Prize in Atomic, Molecular, and Optical (AMO) Physics, corresponding to the year 2018, was presented during the 26<sup>th</sup> International Conference on Atomic Physics (ICAP 2018) held in Barcelona, Spain from July 22<sup>nd</sup> – 27<sup>th</sup>, 2018. The scientist selected by the Commission C15 was Alexey Gorshkov, who obtained his Ph.D. degree from Harvard in 2010 and is at present a staff scientist of NIST and at same time a fellow of the Joint Quantum Institute and of the Joint Center for Quantum Information and Computer Science from the University of Maryland, in USA. The prize was awarded “for his outstanding contributions on quantum properties of interacting cold atoms, cold dipolar matter, quantum optics, quantum transduction, and quantum simulation”. We should mention that a total of 36 eligible candidates of very high level, from all around the world, have been nominated for the prize.

#### **2. Conference Support**

The following conferences were supported by IUPAP in 2018:

Type- A conference:

**The 26<sup>th</sup> International Conference on Atomic Physics (ICAP 2018)**

Location: Barcelona, Spain

Date: 22<sup>nd</sup> – 27<sup>th</sup> July 2018

Local Chair: Maciej Lewenstein (The Institute of Photonic Sciences (ICFO), Spain)

Type- B conference:

### **The 19<sup>th</sup> International Conference on the Physics of Highly Charged Ions**

Location: Lisboa, Portugal

Date: 3<sup>rd</sup> - 7<sup>th</sup> September 2018

Local Chair: José Paulo Santos (Universidade Nova de Lisboa, Portugal)

### **3. The presence of IUPAP in ICAP 2018**

IUPAP had a relevant presence in ICAP 2018, with its participation in different activities. We should mention that 6 Nobel Prizes attended this conference.

- On Monday 23<sup>rd</sup>, Dr. Alexey Gorshkov, the above mentioned 2018 IUPAP YSP winner, gave a lecture on his recent scientific contributions on “Information propagation and entanglement generation with long-range interactions”, after a brief introduction of the YSP 2018 winner by the C15 Chair. A video of this presentation has been posted on the ICAP 2018 webpage: <https://www.youtube.com/watch?v=FL7JQoamR74>.
- On Wednesday 25<sup>th</sup>, as a part of the conference dinner a medal and a certificate were offered by the C15 Chair to the YSP 2018 winner. An amount of 1,000 euros had been received by the winner before this date. Photos on this ceremony are registered in the Gallery of the Section Media of the ICAP 2018 webpage.
- On Thursday 26<sup>th</sup>, a meeting of the C15 took place with members attending ICAP 2018. The Chair of the Local Organizing Committee, Dr. Maciej Lewenstein, was invited to participate. Different items considered in the C&CC meetings hold in Sao Paulo and Singapore were discussed, in particular on the conditions and rules applied for the organization of future conferences, with emphasis on the necessity to increase the women participation as invited speakers and in Advisory, Program and Local Committees. Furthermore, it was commented that the gender subject should be considered in the future selection of IUPAP Commission Chairs and Officers. The C15 Chair expressed that applications of type B conferences for IUPAP support are welcome in years where only one C15 conference is held. Also, it was decided that all information related to nominations for YSP calls must remain under a confidential character. The ICAP 2018 Chair gave a report informing on how the IUPAP support was used for the conference.
- We should mention that also on Thursday 26<sup>th</sup> an IUPAP Lecture Public was given on “The New International System of Units (SI)” by Professors William D. Phillips (Nobel Prize 1977) of National Institute of Standards and Technology and Wanderlei Bagnato from University of Sao Paulo.

### **Future schedule:**

- An application for IUPAP support was received:

Type- A conference:

### **XXXI<sup>st</sup> International Conference on Photonic, Electronic and Atomic Collisions**

Location: Deauville, Normandy, France

Date: July 23<sup>rd</sup> -30<sup>th</sup>, 2019

Local Chair: Dominique Vernhet (Institut de NanoSciences de Paris, France)

- The YSP prize has been awarded annually alternating between the two major “flagship” conferences of the AMO Physics field regularly supported by IUPAP, ICPEAC (International Conference on Photonic, Electronic, and Atomic Collisions) or ICAP (International Conference on Atomic Physics). At the beginning of next year, the C15 commission will start with the process of selection of the 2019 YSP. It is planned that the YSP winner, following the tradition, will give a lecture at the XXXI<sup>o</sup> ICPEAC to be held in Deauville and will receive a medal and a certificate at the banquet of the conference. Also, a check of 1,000 euros will be sent to the awarded.