



# THE 5<sup>th</sup> LASER IGNITION CONFERENCE 2017

LIC '17

20-23 JUNE 2017, NOVOTEL Hotel, Bucharest, ROMANIA

NATIONAL INSTITUTE FOR LASER, PLASMA and RADIATION PHYSICS, Magurele, ROMANIA



**LIC:** An international forum for discussion on various aspects of laser-induced ignition, including novel giant-pulse micro-lasers, measurements and characterisation of plasma induced by laser ignition, new phenomena of laser breakdown or advanced combustion systems, packing of laser systems for harsh combustion environments and their applications. The purpose of this meeting is to share information on laser ignition and related sciences and technologies. The conference will be held at NOVOTEL BUCHAREST CITY CENTRE HOTEL, Calea Victoriei 37B, Bucharest, Romania, on June 20-23th, 2017 with the sponsorship from the European Union, the Micro Solid-State Photonics Group of the Laser Society of Japan and in cooperation with Optical Society of America and several academic societies and associations.

**SCOPE:** Combining regenerative and classical fossil energy sources is a major issue to be addressed in order to find solutions to the challenges of modern societies with respect to technology advances and low carbon footprint at the same time. Fossil energy sources will remain on the tableau due to their energy density and the mobility of combustion engines for cars, power trains, aviation, space and energy cogeneration, but only an efficient and low fuel usage will allow those to contribute to a low carbon footprint mix of energy. Laser-based ignition is believed to be a major contributor to efficient fossil fuel usage and thus a lower carbon footprint of mankind due to the variability and shape-ability of laser pulses that replace the electric spark to ignite the gas-fuel mixture. But a number of technological challenges need to be proved before laser spark plugs can realistically be adopted. The **5th Conference** aims to presents the latest developments in laser and laser technologies for the feasibility of laser ignition in practical combustion systems. The latest developments in non-laser ignition systems and studies that enhance our understanding of the ignition process will also be presented. Included in this conference are guest lectures from leading authorities on ignition technologies.

## TOPICS

### **A: DEVELOPMENTS IN LASER & LASER TECHNOLOGIES - APPLICATIONS IN LASER IGNITION**

- Micro solid-state photonics: advanced laser crystals, ceramics and micro-domain controlled materials;
- Giant micro-photonics: mega-watt class giant pulse generation, laser damages phenomena;
- High power devices: high power VCSELs, DFB and VBG based diodes, fiber and fiber lasers etc.
- Integration approaches for harsh environmental suitable laser systems.

### **B: ADVANCED IGNITION SYSTEMS FOR TRANSPORTATION APPLICATIONS**

### **C: LASER IGNITION SYSTEMS FOR STATIONARY NATURAL GAS ENGINES**

### **D: LASER IGNITION IN AEROSPACE APPLICATIONS**

### **E: MEASUREMENT TECHNIQUES FOR INDUCED PLASMAS, IGNITION & COMBUSTION PROCESSES**

### **F: ROUND TABLE DISCUSSIONS** - Standardization, Legislative, Political and Social-Ethical Challenges for Laser Ignition

### **P: POSTER SESSION**

## PROGRAM COMMITTEE

- PAVEL Nicolaie *National Institute for Laser, Plasma and Radiation Physics (INFLPR), Romania*
- TAIRA Takunori *Institute for Molecular Science (IMS), Okazaki, Japan*
- BECKERT Erik *Fraunhofer Institute for Applied Optics and Precision Engineering (IOF), Jena, Germany*

General Chair  
Program Chair  
Program Chair

## STEERING COMMITTEE

- AKAMATSU Fumiteru *Osaka University, Japan*
- WASHIO Kunihiro *Paradigm Laser Research Ltd., Japan*
- GUPTA Sreenath *Argonne National Laboratory, USA*
- BRÜGGEMANN Dieter *University of Bayreuth, Bayreuth, Germany*
- BÄRWINKEL Mark *University of Bayreuth, Bayreuth, Germany*
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- BÖRNER Michael *German Aerospace Center, Hardthausen, Germany*
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PREVIOUS LIC Conferences: <http://lic.opicon.jp/>

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