

## Mailvaganam Memorial Oration – 2013

Mailvaganam Memorial Oration is an annual event organized by the Institute of Physics - Sri Lanka in memory of Late Prof. Mailvaganam.

This year's lecture will be delivered by

**Prof. I.K. Perera,**

*Chair and Senior Professor of Physics, former Vice Chancellor University of Sabaragamuwa on*  
**The LASER – Sensation of the Century**

**Date: December 13, 2013**

**Time: 5.00 p.m.**

**Venue: Physics Lecture Room III, 2nd Floor, Department of Physics, University of Colombo.**

### **Summary:**

At a time when the computing world is shifting from Desktops and Laptops to tablet-style devices with touch-screen interfaces coupled with wireless networks, technological advances are providing avenues for scientists to achieve remarkable innovations.

Some of these innovations are;

- the exploration of the Universe for discovering Earth like planets that could harbour life,
- the detection of the highly elusive particle "The Higgs Boson", with assistance from the billion dollar construction of the accelerator - Large Hadron Collider, that may eventually bring about the unification of the four basic forces and further still
- the probable use of Gravitational Waves, an entirely different form of energy, predicted by Einstein's general theory of relativity, to probe the Cosmos that may even change our views of the Universe forever.

Of these developments in Science & Technology, the birth of the 'Laser' in the year 1960 can still be considered unique and will easily lay a claim to being a sensation historically, since it is in the forefront of all present and even probable future scientific endeavours and fields of research.

Leading among the significant advances expected in the near future is the European Laser Fusion Project entitled "HiPER" – the probable construction of a Peta-watt laser facility that can well be considered as the "holy-grail" in fusion research, capable of generating an enormous amount of environmentally clean energy, without even generating greenhouse gases. This will well be followed by the development of the X – ray Laser at the DESY Laboratory in Hamburg, Germany, and when it switches on it will be providing glimpses of ultra short pulses of spatially coherent X rays to perform cutting edge research in all basic and applied scientific disciplines that will help to push the frontiers of Physics. Then high on the agenda of the Future Lunar Missions that has been given the green-light by the US government in the hope of sending humans back to the moon, is the upgrading of the laser – reflector array that was placed on the moon by the Apollo 11 Astronauts in 1969, thus continuing the use of Lasers in studies relating to high precision ranging, interior structure of the moon and also Earth – Moon interactions.

Lasers are also expected to play a major role in probing for Gravitational Waves, a research programme designed to explore and further study the Universe and which may provide evidence to predict whether the entire space surrounding our Earth comprise a single Universe in a vast empty cosmos extending up to infinity or whether there are several such Universes – more specifically termed as the 'Multi-verse'.

These along with many other applications confirm that the development of the Laser represents one of the most spectacular scientific and technical advances of the 20th century.

***ALL ARE WELCOME***