

# SPIE Student Chapter ISP- CELOS

## CHAPTER ANNUAL REPORT, 2010

### Introduction

The ISP – CELOS SPIE student has another successful run in the year 2010. This report includes various activities that were executed during the year 2010. The annual general body meeting was held on 30<sup>th</sup> October 2009 for discussing future activities of the student chapter and for the election of new office bearers. The chapter secretary, Ms. Priyamvada V delivered the welcome speech. The financial report was made public by the treasurer, Mrs. Misha Hari. The staff advisor of the chapter, Dr. V. P. N. Nampoori summarized the new students about the importance of joining the student chapter. The members of the student chapter discussed about the future activities of the student chapter. The chapter decided to celebrate the year 2010 as Laser fest on the eve of completion of 50 years of Lasers. Mr. Siddharth Joshi, Ms. Tintu and Mr. Linesh Mathew were elected as the coordinators of the organizing committee for the Laser Fest 2010.

The second general body meeting of the chapter was held on 25<sup>th</sup> of September 2010. The minutes of the meeting includes the selection

of the convenient date for conducting the Optics Fair and Blood Donation Camp, formation of the placement cell of CELOS and the change of the name of the student chapter to ISP- CELOS SPIE student chapter. Dr. Sheenu Thomas was elected as the staff advisor of the placement cell. Mr.Thomas Benoy took the charge of the Blood Donation camp. The committee for our next Optice to School social outreach program was formed.

## Office Bearers

The office bearers for the year 2010 selected in our first general body meetings held on 30<sup>th</sup> October 2009 are:

President:	Mr. Vineeth Yasarapudi
Vice president:	Ms. Reshma Mohandas
Secretary:	Mr. Upkar Kumar
Treasurer:	Mrs.Nithyaja Balan
Webmaster:	Mr. Siddarth Joshi
Staff Advisor:	Dr. V. P. N. Nampoori

## Members of the Chapter:

Henna Abdulla	Reenu Baby
V. Aparna	Nithyaja Balan
Animesh Aryan	Thomas Benoy

Alok Bharti

Bobby C

Shubham Chandel

S. Heba

Rejeena I

Melby Johny

Siddharth Joshi

K. Keerthana

K. Kiran

Upkar Kumar

Sulakshna Kumari

Hadiya M

Libish M Yogeshwar Mishra

Reshma Mohandas

Ravi Nandan

Aslam P

Divya P

Rakesh P

Pranam Prakash

V. M. Rahman

Kavya Rao

Sooraj S

Rhea Sam

Harikrishnan Sankaramangalam

Soumya Sarang

Deepthi Sashikumar

Sunny Saurabh

Kumar Saurav

Deepak Singh

Radhakant Singh

A. Sreeprasad

Vivek V

R. Vikas

Arjun Vinod

Vineeth Yasarapudi

## Chapter Activities

- ❖ **LASER FEST 2010:** The year 2010 was celebrated as the “LASER YEAR” on the eve of completion of 50 years of the Lasers. The LASER FEST 2010 was inaugurated by Prof. Krishna Dholakia, University of St. Andrews, School of Physics and Astronomy, Scotland on 4<sup>th</sup> of January 2010. The inauguration ceremony was followed by a series of lecture by the professor. The lecture series on Lasers and related topic was conducted throughout the year.



Laser fest poster

- ❖ The list of the lectures is as follows:
  - 1) Applications of High intensity Laser Fields, Prof. Arie Zigler, Hebrew University, Jerusalem, 17<sup>th</sup> December, 2009.
  - 2) Century of Photon and Half Century of Lasers, Prof. C. P. Girijavallabhan, Emeritus Professor, ISP, 22<sup>nd</sup> July, 2010.
  - 3) Fiber Laser, Prof. P Radhakrishnan, ISP, 1<sup>st</sup> July 2010.
  - 4) Dependence of Laser Beam Profile on the Dynamics of LBO, Mr. Sony George, Research Scholar, 8<sup>th</sup> July 2010.



**A student interacting with Prof. Dholakia and Prof. Nampoori**

- ❖ **Annual Photonics Workshop 2010:** The chapter conducted the Annual Photonics Workshop joining hands with the ISP-OSA student chapter and Photonics Society of India(PSI) from the 27<sup>th</sup>-28<sup>th</sup> of February, 2010. The focal theme of this year's workshop was 'Quantum Optics'. As many as 60 researchers from the various parts of the country came down to become a part of the

annual event. The chief guest of the event was the Pro vice chancellor of Cochin University of Science and Technology Mr. Godfrey Louis.



**Pro Vice Chancellor inaugurating the two day workshop**

The two day event also witnessed the presentation of the 'Nalanda Endowment Award' instituted by Prof. N. Devaki for the student who gets the highest marks in the first semester of the Integrated M.Sc. course in Photonics. This year's award went to chapter member Mr. Ajan P.R. The chief guest released the annual magazine of the Photonics Department 'Photonics News – 2010' during the event.



**‘Photonics News- 2010’ being released by the chief guest.**

The following were the main lectures given in the two day workshop:

- 1) Introduction to Quantum Optics, Dr. V.P.N. Nampoory, International School of Photonics.
- 2) Quantum Cryptography with Quantum Optics, Dr. Anil Shaji, Indian Institute of Science Education and Research, Trivandrum.
- 3) Intense field Non-linear Optics, Dr. Reji Philip, Raman Research Institute, Bangalore.
- 4) Lasers and Applications, Dr. S. P. Tiwari, ACREHEM, Hyderabad University.
- 5) Quantum computation with Photons: An overview, Mr. M. Sabir, Department of Physics, Cochin University of Science and Technology.



**Dr. V.P.N. Nampoore delivering the lecture on Introduction to Quantum Optics**

The participants were provided with a platform to strongly interact with all the speakers of the workshop during the intervals. Posters related to the topic were also exhibited in the courtyard of the Institute for the participants.

### ❖ **Special lectures**

Apart from the lecture series on Lasers, several other lectures and talks were organized by the chapter. The professors from reputed institutions were invited for the purpose. Here is the list of the special lectures conducted by the chapter:

- 1) '3D photonic structures using 3D interference', Dr. Joby Joseph (IIT Delhi) on 4th-April-2010.
- 2) 'Optimization of laser-produced plasma sources for extreme-ultraviolet lithography', Dr. S S Harilal, 02-June-2010.



- 3) 'Nanophotonics', Dr. Zubin Jacob, Purdue University United States, 16th Sept-2010.
- 4) Lecture series on Relativity and quantum mechanics, Prof. Ajoy Ghatak, Emeritus Professor, IIT Delhi, 6-12th-Oct -2010.
- 5) 'On Certain Fundamental Problems in Particle physics', V.A Induchoodan Menon, Gujarat University Ahmadabad, 14th-Oct-2010.
- 6) On 'Red Rain – The Evidence of Extraterrestrial Life', Dr. Godfrey Louis, Pro-Vice Chancellor, CUSAT, 21st-Oct-2010.
- 7) 'Flexible Electronics Research at Holst Centre', Dr. M. Rajesh, Researcher, Holst Centre, The Netherlands, 18th-Nov-2010.

❖ **Thursday seminars:** Students and research scholars from ISP and CELOS also took seminars on different topics. These seminars have proved to be of great help for both students and the audience. The purpose behind conducting this program is to enhance the interactive skills among the students. The various Thursday seminars taken by the students during year 2010 are listed below:

- 1) 'Enhancement of fluorescence in Mn doped Zns nanoparticles', by Mr Mathew S, Research Scholar on 22-April-2010.
- 2) 'Fabrication and Characterization of Long Period Grating for Ethanol concentration detection' -by Mr.Linesh J, Research Scholar.
- 3) 'Tsunami of the Second kind- Earth drowning in the ocean of Electromagnetic field' -by Prof. V. P. N Nampoori, Emeritus Professor, ISP, 19th-Aug-2010.
- 4) 'Synthesis and Study of Photodynamic activity of Silver Nanoparticles' by Mr. Pradeep Chandran C, Research scholar.
- 5) 'Ga<sub>5</sub>Sb<sub>10</sub>Ge<sub>25</sub>Se<sub>60</sub> Chalcogenide glass : A multifunctional photonic material', Ms. Tintu R, Research Scholar, 4<sup>th</sup> Nov 2010.
- 6) 'Sub-diffraction-limit imaging by stochastic optical reconstruction microscopy', by Mr. Kailasnath, 25<sup>th</sup> Nov 2010.

❖ **Optics to School:** The motto of the chapter has always been to spread the wonder of Optics around, especially to the underprivileged. With this in mind the chapter members organized its 'Optics to School' program in a school for tribal students on 22<sup>nd</sup> February 2010. The chapter members spent an entire day demonstrating experiments and explaining the optics behind them to about 150 students of the school. The basic optics behind interference, polarization, diffraction etc was explained to the students along with demonstrating the same.



**Chapter's Staff Advisor Prof. V.P.N.Nampoori during one of the sessions.**



**The chapter students explaining schools kids about the Polaroid sheets**



**The 'Optics to School' team with the School students**

Future Activities

- ❖ **Optics Fair:** The chapter has decided to conduct its annual student outreach program 'Optics Fair' in 2<sup>nd</sup> week of January 2011. The plan is to reach to those schools which were not a part of earlier editions of the program. A set of new and interesting experiments has been designed for the purpose.
- ❖ **Optics to School:** We have also planned to continue with another student outreach program of the chapter 'Optics to School' where the students of the chapter visit various schools and demonstrate experiment related to Optics to the students.
- ❖ **Optics Kit:** The overwhelming response to the third edition of the Optics kit has only increased the expectation from the next Optics Kit team. We have been regularly receiving inquiries about our 4<sup>th</sup> edition of the Optics Kit from various institutions across India. We are looking forward to add some new experiments in the kit and make it more attractive.
- ❖ **Annual Photonics Workshop:** The annual workshop on the topic related to Photonics will be conducted in the last week of February, 2011. The aim of conducting these types of workshop is to provide students and researchers from various institutions a platform to present their work. The event will also witness a series of lectures on the selected topic by professors from various reputed institution across the country.
- ❖ **Thursday seminars:** The chapter members will be presenting their work done during their summer internship in weekly seminars.
- ❖ **Industrial tour and study tour:** The chapter will organize visits to the nearby industries and labs to get feel of various experiences for the members in various areas of R&D going on in the field of optics and photonics.

- ❖ **Special lectures:** Like previous year, this year too we have planned to conduct special lectures on topic related to Optics Photonics. The professor of related field will be invited for the purpose.
- ❖ **SPIE visiting lecture program:** The chapter is trying to bring the some best scientists and professors using the fund provided by SPIE under 'Visiting Lecture Program'.

### Financial Statement for the year 2010

Chapter bank account	: A/c No: SB 684 at UBI,  Kalamassery, Ernakulam.
Balance brought forward	: 31863.711
Annual grant from SPIE	: 51920
Contribution from Outreach program	: 12451
<b>Total</b>	<b>: 96234.711(2092.74 US\$)</b>
<b>Expenditure (Indian Rupees)</b>	
Seminar	: 3008.5
GBM	: 700
Invited Talk	: 9953.561

Optics kit	: 11040
Optics fair	: 18000
Contribution to Annual Photonics Workshop	: 10602
Social outreach program	: 10042
Stationary/Printout/Photostat	: 1818
Concession given to SPIE members for taking part in academic and other activities	: 5409
Laser fest	: 8621
Miscellaneous	: 980
<b>Total</b>	<b>: 80174.061(1743.48 US\$)</b>
<b>Balance</b>	<b>: 16060.65 (349.41 US\$)</b>

**(Expected expenditure for the next set of optics kit -Rs. 20000)**

### **Word of thanks**

We are very thankful to the SPIE for all the supports and encouragements. The chapter would also like to thanks all those who have helped chapter to conduct all the activities successfully.