

## **Bi - Annual Report 2005 and Outlay of Future Activities**

**International School of Photonics SPIE Student Chapter  
Cochin University of Science & Technology  
Cochin 682 022, INDIA**

**About the Chapter:** The International School of Photonics SPIE (ISP – SPIE) Student Chapter has been constituted in December, 2004 by 12 student members of SPIE and subsequently received the official recognition in January, 2005. The chapter was formally inaugurated on 27<sup>th</sup> February, 2005, the founding day of the International School of Photonics, by Prof. R. Pratap, Emeritus Professor of Cochin University of Science and Technology. The chapter has held four General Body Meetings (GBM) and three executive meetings since January, 2005. GBMs were held on January 18, January 27, February 18, and April 8. First GBM elected the office bearers and the second and third brought the new members and probable members together to draft out the future plans for the chapter. The GBMs gave recognition to various plans for the working of the chapter and constituted various committees to organize or assist in organizing various activities of the chapter. Apart from this, a get together was arranged for the chapter members and faculty of the department on the 15<sup>th</sup> of March, 2005 to interact with a National Committee, comprised of leading scientists and academicians in the country, on its visit to the department on that day.



**Chapter Members with Guests and Professors after the Inaugural Function**

**Current Strength:** 91 members including Ph. D., M. Phil, M. Tech, and M. Sc students of ISP.

**Office Bearers for 2005-2006:** Prof. Dr. V. P. N. Nampoori – Staff Advisor  
Mr. Jijo P. Ulahannan – President  
Mr. Rajesh M – Vice – President  
Mr. Thomas K. J. – Secretary  
Ms. Sheeba M. – Treasurer

### **Various Committees and Members under the Chapter**

#### **1. Programme Committee**

Mr. Rajesh M. (Chair)  
Mr. Lyjo K Joseph  
Mr. Harish Natarajan S. K.  
Mr. Praveen Ashok Cherian  
Mr. Sourabh Raj  
Mr. Adil Masood  
Ms. Deepa Kamath  
Ms. Gopika Ramanandan  
Ms. Renjini Regunandan  
Mr. Varun Gupta  
Mr. Sanjay Priyadarshi

#### **2. Publicity Committee**

Mr. P. P. Saratchandran (Chair)  
Mr. Agile Mathew  
Mr. Deepak V.  
Mr. Aneesh Krishnan  
Mr. Nitish Kumar

#### **3. Membership Committee**

Ms. Sheeba M. (Chair)  
Ms. Jibi John  
Mr. Deepak V  
Mr. Nitish Kumar  
Mr. Ahmed Thasleem  
Ms. Priya Rose T.

#### **4. Placement Cell**

Mr. Jijo P. U. (Chair)  
Mr. Vinu V Namboodiri  
Mr. Manoj V Mathew  
Mr. M. P. Surjith  
Mr. Aneesh Krishnan

## **Financial Status**

**Chapter bank account: A/c No. SB 23517** at the Federal Bank Ltd, Edappally,  
Cochin 682 024, INDIA

| <b>Income<br/>(Indian rupees)</b>               |                        |
|---|------------------------|
| Balance Brought Forward:                        | 0.00                   |
| Donation from Dr. V. P. N. Nampoori             | 1000.00                |
| Donation from M. Tech Students                  | 450.00                 |
| Donation from M Phil Students                   | 100.00                 |
| Donation from M. Sc Students                    | 1800.00                |
| Donation from Mr. Jijo P. U                     | 2500.00                |
| <b>Total (as on 20<sup>th</sup> May, 2005):</b> | <b>Rupees. 5850.00</b> |

| <b>Expenditure<br/>(Indian rupees)</b>              |                        |
|---|------------------------|
| Printing Cost for Receipt Book:                     | 460.00                 |
| Courier Service Charge:                             | 827.00                 |
| Banner printing charge for Open House:              | 950.00                 |
| Honorarium paid for 'Rendezvous with the Industry': | 2500.00                |
| Balance Carry Forward (at hand & with the Bank):    | 1113.00                |
| <b>Total (as on 20<sup>th</sup> May, 2005):</b>     | <b>Rupees. 5850.00</b> |
| Total Approximately in USD (@ \$ 1 = 43.3886 INR):  | <b>\$ 134.83</b>       |

## **Activities held prior to May 20, 2005**

### **1. Weekly Seminars:**

Envisaged to bring various people working in different fields within the department, this seminar series has given a good platform for students to give discuss various aspects of research before an open forum. Following seminars were given so far under this activity.

1. Thursday, February 17, 2005: "Effects of Parameter Fluctuations in Coupled Chaotic Systems" by Mr. Manu Punnen John (Chapter Member and Doctoral Student).
2. Wednesday, May 18, 2005: "Experimental Methods in Laser Produced Plasma" by Mr. Manoj V Mathew (Chapter Member and M. Tech Student).

### **2. Monthly Special Lectures:**

The chapter arranges a special talk to be given on selected dates of every month by a Professor or other experienced hands in the fields of research and teaching. The following lectures were given under this activity:

1. Friday, March 11, 2005: "Stoke's Parameters: Theory and Applications" by Dr. V. P. N. Nampoori (SPIE Member & Chapter Staff Advisor).
2. Thursday, April 7, 2005: "Geometric Phases in Physics" by Prof. V. M. Nandakumaran, Professor, International School of Photonics.
3. Wednesday, May 11, 2005: "Surviving Techniques in Spectroscopic Labs" by Prof. C. P. Girijavallabhan, Dean of the Faculty of Technology and Professor Emeritus, Cochin University of Science and Technology.
4. Thursday, May 12, 2005: "Inverse Dynamics" by Prof. R. Pratap, Professor Emeritus, Cochin University of Science and Technology.

### **3. Visiting Lecturer Programme:**

Aimed to bring the expertise of Professors and Scientists visiting the university, the chapter organizes interactive session for the chapter members and the expert. Talks in this series were given as follows:

1. Wednesday, March 16, 2005: "Emerging Nanostructured Optoelectronic Materials – the CAT Experience" by Dr. L. M. Kukreja, Scientist, the Centre for Advanced Technology (CAT), Indore, India.

### **4. 'Rendezvous with the Industry':**

In the modern world research and education in science and technology cannot survive without active interaction, if not collaboration with related industries. The chapter has envisaged an interactive lecture series named 'Rendezvous with the Industry', to be given away by Scientists and Entrepreneurs in related fields of interest. Under this programme, leading scientists from industrial R&D will be invited to present their ideas and to discuss with the students about various benchmarks and demands of industrial research.

Dr. Ir. Peter J.T van der Donk with the Technology Center Car Refinishes - Colorimetry of the International Research Center of Akzo Nobel Car Refinishes India

Pvt. Ltd, was the scientist who visited the university to give the first ever lecture in this series. Dr. Peter has introduced various novel ideas about the field of Colorimetry during his talk titled "AN INVISIBLE REPAIR OF EFFECT COATINGS: MATCHING THE OPTICAL PROPERTIES OF PAINT". The talk held on Friday, the 6<sup>th</sup> of May, 2005, drew overwhelming interest from the students and teachers of the University and has culminated in research collaboration between the department and the industrial firm, Akzo Nobel Car Refinishes India Pvt. Ltd. The success of the programme was quite evident when Akzo Nobel, one of the world's leading industries in the field has evinced interest in establishing research collaboration with the International School of Photonics in the field of Colorimetry and Optics, the first to do so in India by the leading Dutch firm.

### **'Year of Physics and One Hundred Years of Photons' Celebrations**

The year 2005 is special for Physicists, especially those who work in the field of Optics and Photonics. The chapter has planned several activities to celebrate the year and some events have already been organized.

#### **1. Annual Photonics Workshop**

The chapter has joined hands with the International School of Photonics in organizing a two day National Workshop in Photonics on the 27<sup>th</sup> and 28<sup>th</sup> of February, 2005. About 100 participants comprising of University and college teachers, researchers and scientists, and students with various background in science and engineering participated in this workshop with the focal theme: "One Hundred Years of Photons."

#### **2. Open House Exhibition**

To exhibit the works and achievements of science before the public, the chapter has joined hands with the International School of Photonics and the Cochin University of Science and Technology (CUSAT) in conducting two open house exhibitions for the general public and students from school and colleges on the 26<sup>th</sup> and 28<sup>th</sup> of February, 2005. The latter coincided with the National Science Day of India on which the University celebrates as 'CUSAT Day'. The turnout was very good during these days and many were impressed with the world of lasers, fiber optics and other wonderful experiments demonstrated by the chapter members with the aid of wonderful posters and demonstrations. Wonderful posters were displayed in plenty for effective demonstration of modern ideas and technologies in optics and photonics. The exhibition on 28<sup>th</sup> February was rated as the best in the University along with that of the Department of Ship Technology in the University. This was quite an achievement for the chapter since all the members worked in unison to make the event wonderful and effective for the general public, which in turn was the first public event organized by the chapter.

### **3. Video Show**

To present Einstein's ideas of Gravitational Waves and the General Theory of Relativity before the young students and people from other disciplines, the chapter has organized a DVD presentation on Thursday, 31<sup>st</sup> March, 2005, titled 'VIRGO: Whispers from the Violent Universe' about the giant interferometric project to detect gravitational waves. The show was very useful for the young students to understand many of the scientific and technological marvels behind many big scientific experiments. Students also came to realize the immense potential for future works and jobs before them in the fields of optics and photonics if not in all walks of science and innovative technology.

### **4. Philosophy Day**

To commemorate the birth day of the great Indian Philosopher 'Sri Sankara', the chapter joined hands with the nation in celebrating the 13<sup>th</sup> of May, 2005, as 'Philosophy Day'. Apart from remembering the contributions of Indians to Philosophy and Science, the day was noticed by two talks on 'Scientific Philosophy'. Prof. C. P. Girijavallabhan, Dean of the Faculty of Technology and Professor Emeritus of the University gave a remarkable lecture "On Reality". The second lecture was titled "The Works of Thomas Kuhn and Karl Popper", threw light on modern scientific philosophical ideas formulated and taught by the great philosophers. The day was very useful for young students and scholars to understand their goals and means of a profession in science.

## **Social Outreach & Student Services Programs**

### **1. Voluntary Blood Donation Camp**

Chapter members were very enthusiastic to conduct a voluntary blood donation camp on the 'World Health Day' on the 7<sup>th</sup> of April, 2005. This camp organized in collaboration with the Cochin Branch of the Indian Medical Association (IMA), was a big success though it was arranged within a notice of just two days. 38 students donated their blood to the city blood bank and in return the chapter will get voluntary help from IMA blood bank in case of any medical urgency in the future.

### **2. Open Lab Programme for Visiting Students from Schools and Colleges**

Chapter members are always enthusiastic to demonstrate various experiments and facilities at the department to the students of schools and colleges visiting the University from time to time. Students from various institutions in the state are welcome to visit the labs throughout the year. On the 9<sup>th</sup> of May, 2005, half day was reserved for the young school children spending their summer vacation in the University doing many projects in the various fields of science.

### **3. Project Consultancy and Guidance**

The chapter has an active cell comprising its graduate students to provide consultancy and guidance to graduate and undergraduate students in science and technology to design and develop good projects in the fields of optics, photonics and optoelectronics. The programme is helpful to the students from various science and engineering colleges within the state of Kerala.

#### **4. Placement Cell**

To the assist the chapter members to find good industrial and academic placements after their graduation, the chapter has constituted a placement cell under the stewardship of the chapter president. The cell through its dedicated webpage brings out the career profile of aspiring graduates to attract the necessary attention from industries and higher education institutions.

**5. Training Programmes:** The chapter has designed some training programmes meant for students as well as teachers from schools and colleges. The following lecture has been conducted for the M. Tech students of the department on April 7, 2005:

"Fiber Optic Sensors for Industrial Applications" by Mr. Rajesh M, doctoral student of the department and the chapter vice-president.

#### **Activities Planned for the Coming Year**

Simultaneously with the continuation of regular activities planned in the past, the chapter will be indulging in many more activities in the coming year as listed below.

- 1. 'Year of Physics and One Hundred Years of Photons' Celebrations:** Various programmes are planned till December, 2005, as part of the celebrations. Quiz competitions, Essay writing competitions, Colloquiums, etc. for students of schools and colleges in the state are some of the programmes planned to be organized by the chapter spanning over five months starting from July, 2005. Raman Day Celebrations and Spectra 2005 to be held on the 7<sup>th</sup> of November, 2005 will be the grand finale of the celebrations.
- 2. Industrial Visits & Study Tour:** The chapter will organize visits to the nearby industries and research labs to get hands on experience for the members in various areas of R&D going on in the field of optics and photonics. These will be organized with study tours and leisure trips for the chapter members for refreshing their minds from the labors of handwork. June is the month fixed by the chapter GBM for the first trip in this programme.
- 3. SPIE Visiting Lecturer Programme:** Under this programme, the chapter will actively work to bring some best scientists and academicians to interact and deliver lectures on various topics of current and subjective topics to the student community in the University.
- 4. Optics & Photonics to Schools and Colleges:** This will be the prime activity of the chapter under the social outreach programme which will give thrust in spreading awareness about the relevance of optics and photonics careers among school and undergraduate college students throughout the state of Kerala. To make this a wonderful reality, the chapter has constituted a production unit to design various experiments and demonstrations to be presented to the schools and colleges the chapter team visits. This unit will work in tandem with the programme committee and the publicity committee to launch the activities in the coming academic year starting from June, 2005.
- 5. Training Programmes:** The chapter will organize various training programmes and workshops in modern trends in optics and photonics for both school and college teachers, students from science and engineering colleges apart from conducting research level workshops in the national level.