

**Annual Report**  
**SPIE Student Chapter, National Institute of Technology Goa**  
**India**

**April 2013 - April 2014**

**Officers**

<b>Advisor</b>	Prof. G R C Reddy
<b>Co-Advisor</b>	Dr. P S Reddy
<b>President</b>	Mr. V.Pavan Kumar Achary
<b>Vice President</b>	Mr. Chandrashekhar
<b>Treasurer</b>	Mr. Satish Elavala
<b>Secretary</b>	Mr. Sharadchandra
<b>Event Coordinator</b>	Mr. I.V.Anudeep Kumar Reddy
<b>Outreach Officer</b>	Mr. Nithin Stanley
<b>Membership Officer</b>	Mr. B.Venkateshwaralu

# SPIE Student Chapter, NIT Goa

The Society of Photo-Optical Instrumentation Engineers, known as SPIE opened its Student Chapter at NIT Goa to promote research and disseminate knowledge in the field of Optical Engineering. The Chapter is encouraging students to be a part of SPIE by acquainting them with the ideas and objectives of SPIE.

## Highlights of the NIT Goa SPIE Student Chapter

- The SPIE Student Chapter at National Institute of Technology Goa was inaugurated by Prof. S R Shetye, who was the then Director of National Institute of Oceanography, Goa, on 8th May 2012 with a goal of promoting Optics and Photonics at the undergraduate level.
- The very first activity of the chapter started with a QUIZ contest, where more than 100 students participated, followed by a few technical programs.
- Student lecture series was held in the month of October in 2012. Lectures on the topics such as ‘**Artificial Intelligence**’, ‘**Advantages of Digital Communication over Analogue Communication**’, and ‘**Mathematical Techniques in Engineering**’ were delivered by the 3<sup>rd</sup> Year students.
- A Guest lecture on ‘**Autonomous under water vehicle and autonomous under water profiler**’ was delivered by **Mr. Sanjeev Afzulpurker**, principle scientist, National Institute of Oceanography, Goa.
- A Group Discussion competition was conducted on 9<sup>th</sup> August 2013.

## **OPTICAL FLARE 2013:**

**Optical Flare 2013:** A National Workshop on Optical imaging and sensing, Optical Communications & Networking; Display Technology; Nano, Bio and Opto-Electronics; Remote Sensing; LASERs and its applications was conducted for the first time in Goa. Eminent researchers and educationists from reputed institutions of National Importance like IISc Bangalore, IITs, NITs and IISER Kolkata were invited as speakers, who enriched the participants on current Applications of Optics and Photonics Engineering. The workshop provided a major opportunity to the students at Undergraduate and Postgraduate level. In addition, it provided an occasion for the younger members of the community to interact with some of its leading figures.

A total of 280 participants registered for this workshop from 20 Institutes across the Nation. Most of them were SPIE Student Members. In order to promote Optics and Photonics, The SPIE Student Chapter at NIT Goa made the registrations free of cost for all the SPIE Student Members.

### **Following is the list of all the delivered lectures**

<b><u>LIST OF TOPICS</u></b>	<b><u>DELEGATES</u></b>
Albert Einstein & His Year of Miracles	Prof. Ajoy Ghatak
LASERs: A Brief History	Prof. Ajoy Ghatak
Fiber Optics: A Brief History	Prof. Ajoy Ghatak
Introduction to Optics and Photonics	Prof. R M Vasu
Non Linear Optical Effects	Prof. K Thyagarajan

Sensing the World around us	Prof. Balaji Srinivasan
Micro-Opto-Electro-Mechanical Systems	Prof. T Srinivas
Recent Developments in Optical Communications and Networks	Prof. T Srinivas
Polarized Light in Bio photonics Research	Dr. Nirmalya Ghosh

### **Student Chapter Activities from April 2013 to April 2014**

#### **LASER MISSION 10X:**

LASER MISSION 10X started with an ambition to stimulate the young minds of upcoming generation of goa towards science and Technology.



Details of this program were presented in prestigious **NIT Conclave**, which has drawn national interest in producing young intellectuals. Under this activity, our volunteers have visited more than **70** schools and presented over **110** experiments.

**List of some schools visited and the student members who made it successful**

<b>Schools</b>	<b>Event Date</b>	<b>SPIE Students</b>	<b>Remarks</b>
Smt. Indirabai V.Bhat Dhavalikar High School Dhawali, Ponda-Goa 403401.	10-10-2013	Mr. Amey Kamat, Mr. Tanay Gahlot, Mr. Prabhav Siddhaye, Mr. Nihar Madkaikar	Interesting & very good workshop
Shri Shantadurga High School Bicholim-Goa	12-10-2013	Mr. Shivprakash Gupta, Mr. Shubham Ghatwal, Mr. Pankaj, Mr. Dwane Almedia, Miss. Saisha, Mr. Ravi Sharma	Thanks to “Young Sparks” for very good workshop
Vivekanand Vidyalaya Shirshire-Bori, Ponda-Goa	28-09-2013	Mr. Viresh, Mr. Tejas Raut Dessai, Mr. Vaibhav Rasam, Mr. Prashant, Mr. Abhilash, Mr. Sarwaswa Tandon	Interesting & efficient

V.D & S.V.Wagle High School Mangeshi, Mardol-Goa	18-10-2013	Miss.Aditi Bhat, Mr.Amey Kamat, Mr.Tanay Gablat	Excellent Workshop
Smt. Chandrabhaga Tukoba Naik High School Curchorem-Goa	24-08-2013	Mr.Tejas Raut Dessai & team	Valuable Workshop & informative

Expenses of activities under this program are borne by the student chapter.

**Expenses includes:**

➤ **Travel grants**

This includes to and fro charges between Institute and Schools.

➤ **Experiment Expenses**

Equipment that are useful for experiment are provided.

➤ **Food Allowances of Volunteers**

Food which includes, lunch and snacks, is covered.

**LMTx volunteers teaching school students:**



**Students demonstrating various concepts at different schools**





## **SPIE-Activities**

Many personality development programs are initiated under Student Chapter that helped many of our institute to excel in their career opportunities.

Following Programs were conducted:

- Quiz Competition
- Group Discussions
- Article Writing
- Debates
- Student Lecture series

## **Prize Distribution for winners in Group Discussion**

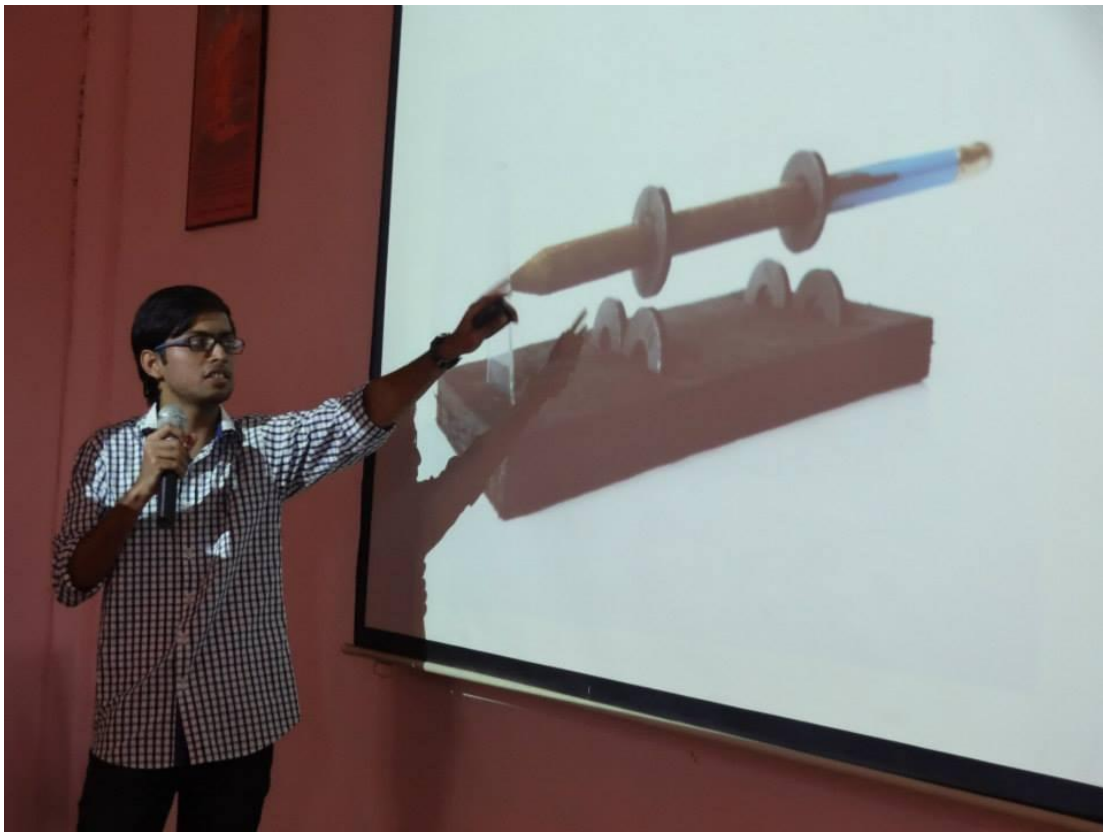




## **Student Lectures**

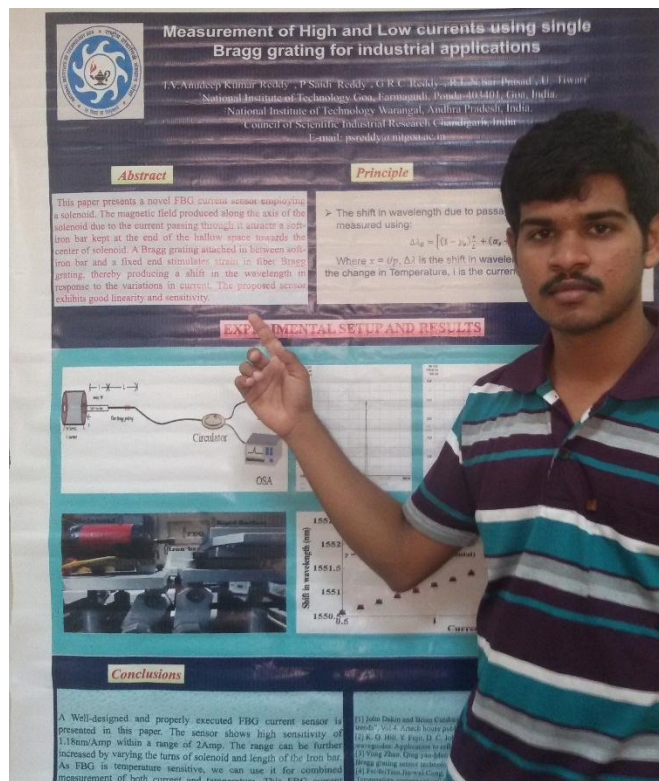
All the students of our institute actively took part in student lecture series. Any student of institute, who is interested in sharing a thought is encouraged by program called Student Lectures. This lectures are conducted every week. Many interesting topics are discussed during such sessions. A good number of students take part in these sessions. This activity is supported by SPIE student chapter.

### **Student lecture on Magnetic Levitation by Abhilash Mandal:**



## Research Oriented Activities

Our Student cum officer of the chapter I.V.Anudeep Kumar Reddy represented our institute in the International Conference on Optics and Optoelectronics held at Dehradun, Uttarakhand, India. A poster presentation on **Measurement of High and Low currents using Bragg grating for industrial applications**, was given at DRDO, Dehradun.



“Current”, which is one of the fundamental factors in physics can be measured using various kinds of sensors. Anudeep developed a FBG sensor that can measure very low current (in milli-ampere) as well as high current (ampere). Its main advantage when compared to other sensors is that, FBG sensor is immune to electromagnetic radiations, sensor is small in size, very fast response etc. He received a very good response during his poster presentation.

## Future Plans

We are planning to organize a National Workshop on “**Applications of Light in all branches of engineering**” during second week of September 2014. As a part of this committee has already started its proceedings regarding getting sponsorships. This workshop will be followed by cultural activities.

The Chapter is promoting membership in SPIE by acquainting the student community with ideas, purposes and objectives of SPIE.

The Chapter is making meaningful contribution to the development of Optical engineering in the country.

Laser mission will be continued with new student members and new schools.



# Financial Statement

## Chapter Bank Account Details:

**Name of the Account:** The Director NIT Goa and President SPIE

**Account Number:** SB/01/001892, **IFSC Code:** CORP0001328, **MICR Code:** 403017045, Corporation Bank, Farmagudi Branch, Ponda, Goa-403 401

S.No	Details	Deposit (in ₹ )	Date
1	Opening balance	5000.72	29.04.2013
2	Annual Grant Received from SPIE	1,88,945.00	25.02.2014
3	Interest	347.00	01.02.2014
Total (in ₹ )		194,292.72	

**Expenditure:** From 29.04.2013 to till date

S.No	Details	Withdrawn	Balance
1	Logistic expenses	4,000.00	190,292.72
2	SPIE Event (Group discussion, Article writing and quiz)	6,055.00	1,84,237.72
3	Technical paper presentation by Mr. I V Anudeep Kumar Reddy at International conference on Optics and Optoelectronics at Dehradun, India	7,748.00	1,76,489.72
Closing Balance (in ₹ )			1,76,489.72

Closing balance of the NIT Goa SPIE Student Chapter is: Rs. 176,489.72

The financial statement contains the totals of the expenditure under various subheads. Details of expenditures are available with the chapter along with the bills and payment vouchers.