STUDENT CHAPTER ANNUAL REPORT
2014

SPIE Student Chapter

Department of Physics

Vidya Jyothi Institute of Technology

Aziz Nagar Gate CB Post Hyderabad 500075 AP INDIA

SPIE
(SOCIETY OF PHOTO-OPTICAL INSTRUMENTATION ENGINEERS)
Vidya Jyothi Institute of Technology (VJIT), Hyderabad was established in 1999 to impart quality technical education to the aspiring young students in the fields of Engineering. The vision is to provide the nation with an institution that fosters the development of imaginative, constructive, sincere and futuristic professionals.

VJIT has a sprawling and lush green campus with an area of 12 acres. State of the art laboratories have the latest equipment and a pool of well qualified professors who can provide a direction and orientation to the students in their learning process to discover a path of their own and to learn from within. The students are trained completely so as to make them competent individuals capable of handling their careers and lives effectively.
CHAPTER ACTIVITIES

Optics Education and Outreach

A small amount from the activity grant received from SPIE has been set aside for Optics Education and Outreach. A number of outreach programs at nearby schools were organized. The program aimed to create awareness and interest in various phenomena related to Optics and photonics. The targeted group was mainly underprivileged school children. The student members actively took part in preparing models and hand-outs for the event. The student members prepared some models to make the students understand the basic concepts like reflection, refraction, dispersion etc. The members also utilized the kit provided by SPIE to explain the principle of convex and concave lens. Posters and optical kits were given to the schools for future reference.

Photos from the outreach program at a rural school
Optics outreach program at an Orphanage
A visit by students of a local school

The chapter invited students from a local school to the laboratory to create awareness and understand the lab related activities. They students got an opportunity to visiting the Optics lab at Physics department. The chapter members created a lot of interest in Physics among the school children. This activity was arranged as a part of celebration of IYL – 2015.
Visiting Lecture Program

On 21 Dec 2014, SPIE Student Chapter of Dept. of Physics, VJIT, organised the 3rd Visiting lecture programme. The session began with Dr A Padmaja, Principal, VJIT who briefed the audience about the SPIE activities conducted for the past three years. She also spoke about the importance of research activities that can be carried out in the areas of photonics and optics and urged the students to participate in National & International conferences and to interact with the experts.

DR. Hiroshi Yoshikawa, Opto-Electronics Lab, Dept. of Computer Engineering, College of Science and Technology, Nihon University, Japan delivered a lecture on “Computer generated holography for 3D Display”. He explained about Holography which enables three-dimensional images (holograms) to be made. It involves the use of a laser, interference, diffraction, light intensity recording and suitable illumination of the recording. The image changes as the position and orientation of the viewing system changes in exactly the same way as if the object were still present, thus making the image appear three-dimensional. Highlighted about Computer Generated Holography (CGH) and showed some holograms of digitally generating interference patterns. A holographic image can be generated by digitally computing a holographic interference pattern and printing it onto a mask or film for subsequent illumination by suitable coherent light source.

This program was sponsored by SPIE student chapter. Students felt that the lecture was highly informative and useful. Students expressed their gratitude for SPIE and VJIT for this rare opportunity of having interaction with a foreign university professor. The lecture motivated the students to do research work in the field of holography.
Dr. Hiroshi Yoshikawa talking about a hologram

Dr. Hiroshi Yoshikawa displaying a hologram
Dr. Hiroshi visit to the Physics Lab

Students interacting with Prof. Hiroshi
Research activities by chapter members

Chapter members are carrying out research work and actively participating in research activities. SPIE Student Chapter Members Mr. Badrinath Vadakkapattu Canthadai, Mr. Kumar Ravi, Mr. P. Anurag Reddy and Mr. M. Esakki muthuraju are working on developing Surface Roughness Sensor, Tilt sensor, Refractive index sensor. For the first time, SPIE Chapter established a research lab named Fiber Optic sensor Research Lab in Dept. of Physics.

Chapter members working on a developing a surface roughness sensor
Chapter members working on a surface roughness sensor

Tilt sensor setup developed by the a student chapter member
Refractive index sensor setup
Research papers presented by SPIE Student members

Research papers presented by student chapter members during the academic year - 2014 at SPIE Conferences.

SPIE DSS 2014
Baltimore, Maryland, United States

*Intensity insensitive one-dimensional optical fiber tilt sensor*
Badrinath Vadakkapattu Canthadai, Dipankar Sengupta, Vengalrao Pachava, et al.,

SPIE Optics + Photonics 2014
San Diego, California, USA

*Outcome Based Learning of Optics in schools*
M. Esakkimuthu Raju, Badrinath Vadakkapattu Canthadai, Kumar Ravi.

*Study of surface roughness of corroded metals using plastic optical fiber sensor*
M. Esakkimuthu Raju, Badrinath Vadakkapattu Canthadai, Kumar Ravi, Vengalrao Pachava, Dipankar Sengupta
2014 Optics Outreach Games Winners
First Place - "Fun with Optics",
Vidya Jyothi Institute of Technology Chapter (India)
Officer Bearers

Mr. Badrinath Vadakkapattu Canthadai (President)

Mr. Kumar Ravi (Vice President)

Mr. Anurag Reddy (Secretary)
Mr. M. Esakki muthuraju (Treasurer)

Dr. Dipankar Sengupta (Advisor)
Financial Statement

Chapter Bank Account:

Name of the Account: SPIE Student Chapter, VJIT
Account No: 3063101002754
IFSC code: CNRB0003063
MICR: 500015057

Bank Address: CANARA BANK, Himayatnagar, Moinabad Mandal, Ranga Reddy Dist., Andhra Pradesh, 500075

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening Balance</td>
<td>Rs.2067.00</td>
</tr>
<tr>
<td>Amount received Chapter Activity</td>
<td>Rs.43783.74</td>
</tr>
<tr>
<td>Amount spent for Optics Outreach activity</td>
<td>Rs.23300.00</td>
</tr>
<tr>
<td>Closing Balance</td>
<td>Rs.20483.74</td>
</tr>
</tbody>
</table>
Future Plans

- To accelerate more research activities in the chapter.
- To initiate wider research activities in areas like spectroscopy, Laser and Photonics.
- To workout the feasibility of conducting FOCUS conference.
- To include more members in the chapter.
- Inviting the optics related industries to the college.
List of student members as on 30.3.2015

<table>
<thead>
<tr>
<th>S.No.</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M Esakkimuthu Raju</td>
</tr>
<tr>
<td>2</td>
<td>Badrinath Vadakkapattu Canthadai</td>
</tr>
<tr>
<td>3</td>
<td>Kumar Ravi</td>
</tr>
<tr>
<td>4</td>
<td>Anurag Reddy P</td>
</tr>
<tr>
<td>5</td>
<td>Anirudh Akella venkata</td>
</tr>
<tr>
<td>6</td>
<td>Swarna Mani Allamraju</td>
</tr>
<tr>
<td>7</td>
<td>Lahari A</td>
</tr>
<tr>
<td>8</td>
<td>Amereswar B</td>
</tr>
<tr>
<td>9</td>
<td>Mohan Prasanth C</td>
</tr>
<tr>
<td>10</td>
<td>Aparna D</td>
</tr>
<tr>
<td>11</td>
<td>Akhila Devi G V</td>
</tr>
<tr>
<td>12</td>
<td>Swathi K</td>
</tr>
<tr>
<td>13</td>
<td>Sneha M</td>
</tr>
<tr>
<td>14</td>
<td>Sri Krishna Rekha M</td>
</tr>
<tr>
<td>15</td>
<td>Sai Saranya T</td>
</tr>
</tbody>
</table>
Annual report prepared by

Mr. M. Esakki Muthuraju
Research scholar,
Dept. of Physics
SPIE ID: 3498091
Mail ID: esakki.raju@gmail.com