STUDENT CHAPTER ANNUAL REPORT, 2013

SPIE Student Chapter at the Physics Department
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

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.
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 optics and photonics. The targeted group was mainly underprivileged kids and underprivileged schools. The student members actively took part in preparing models and handouts for the event. The student members came up with fun experiments, easy activities, interesting facts and other resources related to optics for the kids. At the end of the event a quiz was conducted and optical kits were given out to kids who answered correctly. This was mainly to increase their enthusiasm and interest towards optics and photonics. Posters and optical kits were also left with the schools for future use by kids. We received a good response from the kids all through and look forward to continue with a potential to impact a large audience.

Photos from the outreach program
Workshop on Optics – ‘SPECTRA 2013’

On November 9 and 10 a workshop was conducted on optics - “SPECTRA 2013”. This event had invited talks of renowned Professors from various reputed institutions like Indian Institute of Information Technology Hyderabad (IIIT-H), BITS Pilani-Hyderabad Campus (BITS-PHC), Jawaharlal Nehru Technological University Hyderabad (JNTUH), JNTUH College of Engineering (JNTUH-CE) and Osmania University (OU).

The gathering is being addressed and the participants are welcomed

The event starts with a prayer
Prof. S.M. Zafarullah inaugurating the workshop by lighting a traditional lamp in the presence of other guests of honor

The workshop was inaugurated by Prof. K. Venugopal Reddy (Centre), Head, Dept. of Physics, OU. During his talk he highlighted the various fields of optics and career opportunities in the field of Optics.
Day 1- I session

The inaugural session was followed by the invited talk of Dr. C.P. Vardhani, Head, Dept. of Physics, Osmania University College for Women. Her talk focused on the beauty, power and impact of physics. She also gave a brief overview of how Optics and Photonics plays a crucial role in different spheres of life.

Dr. C. P. Vardhani greeted with a bouquet of flowers
Day 1- II session

In the afternoon session of day one, Dr. Kannan Ramaswamy, BITS-H, presented his talk on Nano plasmonics. He explained the fundamentals and applications of plasmonics in different fields. He also performed an interesting experiment that demonstrated the propagation of electromagnetic waves through metals.

Dr. Kannan Ramaswamy during his demonstration on electromagnetic waves
Dr. T. Sreekanth being presented with a memento

The second day of workshop started with the invited talk of Dr. T. Sreekanth, Head, JNTUH-CE. His lecture was focused on basics of Lasers, the different types and their various applications. He also highlighted the research opportunities in the field of Photonics for the benefit of the soon to graduate students.
Day 2 - II session

The afternoon session of day two was conducted by Dr. Suryanarayana, Professor, IIT-H. He emphasized the research methodology and research areas in the field of nanophotonics and magnetic nanoparticles. He also spoke on the properties and applications of magnetic nanoparticles especially in the field of medical diagnostics.
Participants listening with keen interest and making note of important points

Students bonding over food and optics
End of the workshop

More than 60 students participated in this program and greatly appreciated the deep insights provided by the distinguished speakers. The students also got an opportunity to interact with accomplished scholars and researchers from various universities and learn from their experiences. It opened the young minds to new thoughts, ideas with a lasting impact which pushed the enthusiasm, confidence and interest of the students.
Visiting Lecture Program

The guest for the program was Dr. Sarun Sumriddetchkajorn who is Principal Researcher/Director at National Electronics and Computer Technology Center (NECTEC), Thailand. He is director of the Intelligent Devices and Systems Research Unit (IDSRU) and plays an important role in photonics research and development in Thailand. His achievements in applying Photonics and Micromechanics to Biomedical Devices and Telecommunications and his commitment in diffusing the interest for Optics and Photonics in Thailand deserves a special mention. As part of the SPIE visiting lecture program he delivered a lecture on ‘Photonics in Agriculture’.

Dr. Sarun being greeted by Prof. E.M. Raju with a memento
With increased economic activity, high population growth rate and environmental concerns, there is a great need to revive and revamp the agriculture sector in our country. Dr. Sarun introduced the audience to the term Precision Agriculture, which is about whole farm management with the goal of optimizing returns on inputs while preserving resources; and emphasized on the major problems confronting agriculture today including, but not limited to, population pressure, smaller holdings, depleted nutrient levels in soil, poor storage facilities, inefficient and lack of modern technology.

Dr. Sarun interacting with the students
He stressed on how a multidisciplinary approach can be applied to agriculture and elaborated specifically on how photonics can be used to revolutionize the agriculture sector. He also cited various examples of studies, research and commercial scale implementation of various techniques that have been tried and successfully tested around the world.

Dr. Sarun with a few student members
The audience listened to his speech with rapt attention and appreciated every bit of insight they gained during the session, which was evident in the rousing applause the speaker received at the end of his lecture. He encouraged the students to pursue higher studies. He also gave a quick outlook on the possibility for them to build a long term career in this field.
Future Plans

- Setup regular meetings with industry experts and academic scholar.
- Plan visits to industries, research and testing laboratories.
- Organize student chapter exchange program.
- Work for local outreach programs in the community, schools and colleges.
- Promote the chapter in the college.

List of 12 current student members

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<tr>
<th>S. No.</th>
<th>NAME</th>
<th>E mail</th>
<th>SPIE ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M Esakkimuthu Raju</td>
<td><a href="mailto:esakki.raju@gmail.com">esakki.raju@gmail.com</a></td>
<td>3498091</td>
</tr>
<tr>
<td>2</td>
<td>Badrinath Vadakkapattu Canthadai</td>
<td><a href="mailto:badrinath.14feb@gmail.com">badrinath.14feb@gmail.com</a></td>
<td>3498997</td>
</tr>
<tr>
<td>3</td>
<td>Rahul Anand</td>
<td><a href="mailto:emailrahulanand@ymail.com">emailrahulanand@ymail.com</a></td>
<td>3534051</td>
</tr>
<tr>
<td>4</td>
<td>V Arjun</td>
<td><a href="mailto:v.arjun.28nov@gmail.com">v.arjun.28nov@gmail.com</a></td>
<td>3534044</td>
</tr>
<tr>
<td>5</td>
<td>C Ashwin</td>
<td><a href="mailto:ashwin_sonam@yahoo.com">ashwin_sonam@yahoo.com</a></td>
<td>3534028</td>
</tr>
<tr>
<td>6</td>
<td>P Avinash Kumar</td>
<td><a href="mailto:pakanati.avinash@gmail.com">pakanati.avinash@gmail.com</a></td>
<td>3527302</td>
</tr>
<tr>
<td>7</td>
<td>Vinay Bennur</td>
<td><a href="mailto:vinaybennur@rocketmail.com">vinaybennur@rocketmail.com</a></td>
<td>3527303</td>
</tr>
<tr>
<td>8</td>
<td>Dundi Vinayak Doddipatla</td>
<td><a href="mailto:dundivinayak@gmail.com">dundivinayak@gmail.com</a></td>
<td>3532522</td>
</tr>
<tr>
<td>9</td>
<td>Varun Teja Kalluru</td>
<td><a href="mailto:varunkalluru444@gmail.com">varunkalluru444@gmail.com</a></td>
<td>3533534</td>
</tr>
<tr>
<td>10</td>
<td>Kumar Ravi</td>
<td><a href="mailto:gamemasterravi@gmail.com">gamemasterravi@gmail.com</a></td>
<td>3534049</td>
</tr>
<tr>
<td>11</td>
<td>A Ravikiran Reddy</td>
<td><a href="mailto:admala.ravi@gmail.com">admala.ravi@gmail.com</a></td>
<td>3527304</td>
</tr>
<tr>
<td>12</td>
<td>C Vamsi Krishna</td>
<td><a href="mailto:vamsi.c111@gmail.com">vamsi.c111@gmail.com</a></td>
<td>3527298</td>
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OPTICS AND PHOTONICS
WORKING FOR A BETTER AND BRIGHTER WORLD

Annual report prepared by

Badrinath Vadakkapattu Canthadai
SPIE ID: 3498997
Email: badrinath.14feb@gmail.com