Annual Report
October 2017- October 2018

Officers
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Secretary: Sufyan Huma
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Current member of the SPIE chapter
1. Fangfang Wei
2. Sanjay Kumar Keshri
3. Irfan Muhammad
4. Xiaokang Lian
5. James Walshe
6. Wei Han
7. Hai Huang
8. Vishnu Kavungal
9. Sankalp Agarwal
10. Graceson Antony
11. Sufyan Huma

Chapter Activities

Outreach Activities

1) Transition Year Student’s Workshop DIT, 23th Feb 2018.

Target audience: Transition year students (age 15-17 years)

In Ireland the Transition Year (TY) is a one-year programme taken after Junior Cycle and before the two-year Leaving Certificate programme. It is designed to
act as a bridge between the Junior Certificate and Leaving Certificate programmes. It is available to all second-level schools and currently some 550 schools offer the programme. Transition Year may be optional or mandatory for students depending on the school’s policy. Each school designs its own Transition Year programme, within set guidelines, to suit the needs and interests of its students. In establishing its own distinctive programme content, the school takes into account the possibilities offered by local community interests.

During the transition year students typically spend time with industry, academia, community services, etc in order to identify possible career choices and identify the most suitable choices of subject in the Leavening Certificate Programme. The College of Sciences and Health hosts A one-week programme for transition year students who are interested in Science. The School of Physics, Clinical and Optometric Sciences is organising lab visits and demonstrations as part of this programme.

Six students involved with the DIT SPIE student chapter participated in the event this year. We demonstrated below mentioned experiments to transition year students and they really like the experiments also we got really good feedback from them.

<table>
<thead>
<tr>
<th>Rate of the experiments</th>
<th>Group No.</th>
<th>Rate out of 10 from different groups</th>
<th>Sum of scores</th>
<th>Average score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of experiments</td>
<td></td>
<td>1  2  3  4  5  6  7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invisible Experiment-Rochester cloak</td>
<td>6  6  8  8  10  9  (8)</td>
<td>55</td>
<td>7.85</td>
<td></td>
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<tr>
<td>Pepper gram</td>
<td>6  7</td>
<td>9 (9)  9  10  9</td>
<td>59</td>
<td>8.43</td>
</tr>
<tr>
<td>Transmission and absorption-Gummy bear</td>
<td>7  6  8  9  9  10  7</td>
<td>56</td>
<td>8.0</td>
<td></td>
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<tr>
<td>Invisible glass experiment</td>
<td>7  6  10  10  10  10  10</td>
<td>63</td>
<td>9.0</td>
<td></td>
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<tr>
<td>Laser vs. LED experiment</td>
<td>7  7  8  9  9  9  7</td>
<td>56</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>View through diffraction glass</td>
<td>7  8  10  9  9  10  8</td>
<td>61</td>
<td>8.7</td>
<td></td>
</tr>
</tbody>
</table>
2) SciFest @ DIT 13th April 2018

The SciFest programme consists of a series of one-day STEM (Science, Technology, Engineering and Maths) fairs for second-level students. The aim of the programme is to encourage an interest in, and love of, the STEM subjects. The programme is designed to be as inclusive and accessible as possible. Established in 2008 the programme is now implemented at four distinct levels.

Dublin Institutes of Technology, DCU and St Mary's College, Derry host one-day SciFest STEM fairs which are open to all second-level students. A SciFest fair consists of a competition and exhibition of projects, a prize-giving ceremony, and may also include a selection of science talks, science demonstrations in the college laboratories and advice on careers in STEM and courses available in the college. SciFest@College affords students the opportunity to visit a third-level college, view the facilities and get information on the various STEM courses available. The fact that the event is regionally based and has open and free entry means that SciFest is both accessible and inclusive. The project also has a cross-border aspect as St Mary's College in Derry also hosts a SciFest fair and some students from
schools in Northern Ireland cross the border to participate in fairs in the Republic.

3) Switch On Stem (secondary school event) @ DIT 2nd May 2018

We provide opportunities for 5th and 6th class pupils from local schools to engage with DIT through a range of events including College Awareness Week, Maths Week, Engineers Week and Tech. Week.

Children participate in a workshop or activities themed on the above and all workshops are linked to modules being undertaken by DIT students in SPIE/OSA chapters.

Pupils from the schools also get a tour of the campus and get the opportunity to talk to current DIT students about College Life.
Annual Meeting of Chapter members

Chapter also arranged annual meeting to meet all chapter members and discuss the upcoming activities.

Pictures: DIT SPIE chapter students meeting

Team building activities

Last year, we organised a paintball as team building activities on 28th March 2018. Good teamwork is essential in paintball. Our SPIE student chapter team worked together to make strategies and plans, and then be able to coordinate them.

Picture: paintball team building activity of DIT SPIE chapter student
**Officer Travel Grant**

SPIE Optics + Photonics 2018 (Travel Grant Activity)

Fangfang Wei successfully applied for the SPIE travel grant to, SPIE Optics + Photonics 2018, San Diego, California. During this conference time the DIT SPE chapter president attended different workshops for chapter officers. The Student Chapter Leadership Workshop was a wonderful opportunity to meet not only with other officers from all over the world and to learn about the challenges they have to face in their chapters.

Picture: SPIE Optics + Photonics 2018 student leadership workshop

In the meeting, these was an experiment setup for a public exhibition. Chapters from over the world bring their fantastic experiment setup and show it to public for all age. Demonstrate and talk to people in other groups, which was very useful for chapter outreach activities.
Visiting Lecturer 2018

Prof. Brian Culshaw is going to give a talk to our chapter on 23th November on the topic of Fiber Optics in Sensing and Measurement. The SPIE visiting lecture event will have more than over 30 attendants, including 3 professors. The SPIE visiting lecture event has been advertised in collaboration with the School of Physics, Clinical and Optometric Sciences, DIT. The lecturer has chosen based on the research interest of members of the chapter in optical sensors. It will be a very informative experience to meet Prof. Brian Culshaw and students will enjoy hearing about his research work.

A introduction of Prof. Brian Culshaw from his profile:

Area of Expertise

Photonic devices and systems; Fibre optic sensing technologies and applications; smart structures; environmental monitoring; technology transfer; Photonics opportunities

Biography

Brian Culshaw graduated from University College London with a BSc in Physics and thereafter a PhD in Electronic and Electrical Engineering, specialising in microwave semiconductors, completed in 1969. He spent 1970 in the US as a post-doc at Cornell, joining the staff of the then Bell Northern Research immediately afterwards and evolving into microwave system design, especially for long haul transmission.

He returned to UCL as a post doc after three years in Ottawa joining the academic staff at UCL in 1975 thereafter developing an interest in fibre optics for sensing and measurement. With many co-workers, he produced some basic results in the use of phase modulation in sensors and the interferometric architectures to demodulate them. A sabbatical year with John Shaw at Stanford in 1982 gave an opportunity to contribute to basic research in fibre gyros. These interests in fibre sensing evolved into applications in ultrasonics, NDE, smart structures, advanced materials technologies, environmental sensing and MEMS. He has
founded or co-founded three small companies, of which two survive!

He moved to Strathclyde University in Glasgow in 1983 as professor of optoelectronics, and since then has also become involved in a number of professional activities including multi partner national and international research project management, conference organisation and journal editing. His work with professional societies includes serving as President of SPIE during 2007.

At Strathclyde, he served six years as vice Dean (Engineering) in the UK's largest Engineering Faculty and has completed a five year term as Head of Department. He is currently professor emeritus at Strathclyde.

New Officers election

We hold an election on 17th November 2018 for officers 2019. The new officers will be:

**Advisor:** Izabela Naydenova
**President:** Sufyan Huma
**Vice President:** Brian Rogers
**Secretary:** James Walshe
**Treasurer:** Sanjay Keshri

Finances of DIT SPIE Student Chapter

We began with €0 from last year’s budget.

**Income:**
2017 Balance €0
SPIE Chapter Activity Grant – 16/02/2018 € 394.94 ($ 500 Dollar) Present Total € 24.77 Euro

**Expenses:**
Snacks for annual SPIE member meeting -22/02/ 2018 € 59.79 Euro
Team building activities(paint ball) - 28/03/ 2018 € 198 Euro
Outreach activities transition year and Switch on stem - 112.38 (Buying equipment and other expenses)
- Transition year workshop-23th Feb 2018, € 35 Euro
- SciFest -13th April 2018 € 36 Euro
- Switch On Stem(*secondary school event*) -2nd May 2018 € 41.38 Euro

Total € 370.17 Euro
End balance: € 24.77 Euro
We will invite visiting lecturer for the year 2019 and also we are having transition year student event on 28th of November.

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https://twitter.com/IEO_Centre/