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## AFFILIATE OF NATIONAL AND INTERNATIONAL ORGANISATIONS

### 3.1. University of Delhi @ ANDC SPIE Student Chapter

Faculty Advisor: Dr Amit Garg

#### SPIE Office bearers:

1. President- Mr Aman Tyagi, B.Sc. (H) Electronics III Yr
2. Vice-President- Ms Shruti Yadav, B.Sc. (H) Electronics III Yr
3. Secretary- Mr Prahlad Prajapat, B.Sc. (H) Electronics III Yr
4. Treasurer- Mr Phulender Singh, B.Sc. (H) Electronics III Yr
5. Technical Officer- Mr Yash Varshney, B.Sc. (H) Electronics III Yr
6. Editorial Officer- Mr Anurag Saxena, B.Sc. (H) Electronics III Yr

#### SPIE Activities

##### SPIE Codestreak Challenge

**Date/Time/Location:** February to April 2020, 60 days, Online platform Codechef or Hackerrank.

**Participants:** Chapter members

A 60 days code streak challenge was conducted from February 2020 to April 2020. In this challenge chapter members had to learn any programming language and had to complete a task every day on Codechef or Hackerrank or any similar platform for 60 days.

##### International Day of Light 2020 celebration

**Date/Time/Location:** May 16, 2020, 9 am - 6 pm, Online mode Google meet.

**Participants:** Around 210 students from all over India

While the whole nation was under lockdown, SPIE student chapter at University of Delhi Acharya Narendra Dev College organized thrilling events online on the occasion of International Day of Light on May 16, 2020, to cheer up the students and participants. Following the official theme of SPIE, we named the event as 'Laser Turns 60'.

The following 3 events were organized in the IDL2020 celebrations.

1. Online treasure hunt
2. Photography contest
3. Blog writing competition

##### Optics Education Outreach Programme 2020

**Date/Location:** June 15-30, 2020, Online mode Google Meet

**Participants:** School students

Like every year, this year also our chapter performed an outreach activity with school students to promote optics at school level. As due to COVID-19 global pandemic almost all schools have opted for online mode of teaching, in this outreach activity a new pedagogical technique was introduced to teach optics to 6-12 standard students via online mode of teaching. This activity introduced participating students to some optical phenomena through specially made videos by chapter members. Students did not have any access to laboratory materials to perform any practical activity. Considering this, all the activities were designed so they could perform them easily at their own homes. All selected activities introduced the practical aspect of the concepts illustrated in the videos. Some of the activities are written below:

1. Hollow Prism
2. The Broken Pencil
3. Pinhole Camera

##### NI LabVIEW Online Basic Training

**Speaker:** Mr Devendra Dhawan

**Date/Time/Location:** June 23-27, 2020, 12-1 pm, Online mode Google Meet.

**Participants:** Students and chapter members

To enhance the employability of our chapter members, a 5 days hands-on workshop on 'NI LabVIEW Online Basic Training' was conducted from June 23-27, 2020. The whole training was divided into 5 topics. One topic was covered each day from basic to different techniques and components in LabVIEW. It is a graphical programming language that makes the implementation of Virtual Instruments very easy and convenient. In the training sessions, Mr Devendra Dhawan, Technical manager and co-founder of Touch TECHNO introduced all the topics thoroughly and assigned different tasks for each day.

##### Android App Development with Flutter

**Speaker:** Mr Amit Srivastava

**Date/Location:** July 13-17, 2020, Online mode Google Meet

**Participants:** Chapter members

After a successful conduction of LabVIEW training, our chapter organized another training session. This time it was an online webinar session of 5 days about Hybrid Mobile App Development with Flutter which was conducted from July 13-17, 2020, via Google meet. This session was conducted with Amit Srivastava founding member and a mentor at Brain Mentors Pvt Ltd. Brain mentors is an online platform for IT and programming.

##### Talk on 'Enhancing Wireless Communications Using Photonics'

**Speaker:** Dr Anmol Choudhary, Assistant Professor, Department of Electrical Engineering, IIT Delhi

**Date/Time/Location:** September 20, 2020, 2-3 pm, Online mode Google Meet

**Participants:** 50

An interactive and educational session was organized under the banner of SPIE ANDC Research Programme (SARP). Dr Amol Choudhary delivered a talk on 'Enhancing Wireless Communication using Photonics'. Around 50 Undergraduate Students from different Colleges attended the Session.

#### **Talk on 'Capturing Images Through The Ages Glimpses of the Journey from Galileo's Telescope to Mobile Cameras'**

**Speaker:** Prof. Anurag Sharma, IIT, Delhi

**Date/Time/Location:** October 18, 2020, 11 am -1 pm, Online mode Google Meet

**Participants:** 50

A talk on 'Capturing Images through the Ages: Glimpses of the Journey from Galileo's Telescope to Mobile Cameras' was organized with Dr Anurag Sharma as the resource person. Dr Anurag Sharma is an Indian physicist and a professor at the Department of Physics of the Indian Institute of Technology, Delhi. The session started with the beginning of optics in ancient times and evolution of these techniques with time, further he talked about the telescopes and different type of cameras in 18th century followed by the modern technologies of capturing pictures and telescopes that are used nowadays even to peek far into the distant galaxies.

This session was followed by an article writing competition on the same topic. We received many well-written articles. Dr Anurag Sharma himself judged all the articles and announced the winning article entry. The winner was rewarded a prize money of INR 1000 and a certificate of excellence. All the participants were awarded with certificate of participation.

#### **SPIE Orientation Programme 2020**

**Date/Location:** November 18, 2020, Online mode Microsoft Teams

**Participants:** Freshers' of the college

To introduce the freshers to their college, its societies, departments, laboratories and faculty staff, a student orientation session was organized by the college. In this session, a slot of our chapter was reserved. A video of our chapter was made by some chapter members who gave a brief introduction of SPIE and our chapter and also displayed benefits of joining SPIE as a student member. It also exhibited all the events, activities, workshops and excursion trips organized by us.

#### **Notable Students Participations-**

1. Three teams from our chapter of 5 members each participated in Smart India Hackathon 2019(SIH). SIH is a national level competition which invites college students to participate and devise solutions for industrial problem statements. One of the participating teams made it to the grand finale.
2. Two teams of some chapter members participated in e-Yantra Robotics Competition 2019 (eYRC) organised by IIT Bombay. One of the teams cleared the preliminary stages and received the competition kit. The team went on further in the competition and managed to be one of the top 50 teams.

#### **Quiz competition on Nobel Prize in Physics**

**Date/time/location:** January 31, 2021, 10:30 am – 11:45 am, Online mode Google Meet

**Participants:** - Chapter members and College students.

Amid this pandemic our chapter organized a Quiz competition for the Nobel Prize in Physics on January 31, 2021 from 10:30 am to 11:45 am. The Quiz was organized on an online platform - **KAHOOT** and around 90 students participated in this quiz from different colleges together with our SPIE members. Objective of organizing this quiz was to increase the interest of students in research and physics.

#### **A talk on 'All about writing a Research Paper'**

**Speaker:** Dr Amit Garg

**Date/Time/Location:** February 28, 2021, 11.30 am - 1 pm, Online mode Google Meet

**Participants:** Chapter members and College students

On the occasion of National Science Day, SPIE Student Chapter University of Delhi at Acharya Narendra Dev College organized an illuminating talk on the topic 'All You Need to Know about Writing a Research Paper' on February 28, 2021. About 70 students joined the talk.

#### **National Science Day Quiz**

**Date/Location:** February 28, 2021, Online Platform Quizizz

**Participants:** Chapter members and College students

National Science Day in India is celebrated to commemorate the discovery of **Raman Effect** by the Indian Physicist Sir C.V. Raman on February 28, 1928. About 50 participants participated in an online quiz conducted on the online platform, **Quizizz**. The participants were tested for their knowledge of general science and on the history of National Science Day. The top three ranking participants were awarded special gift hampers and certificates.

#### **Photo and Reels Contest**

**Date/Location:** February 21-March 04, 2021, Instagram

**Participants:** Chapter members, College and School students

A Photography and Instagram Reels contest was announced on February 21, 2021. The participants were expected to submit Photographs and Reels showing any **scientific phenomenon in our everyday lives** in an interesting manner. The contest concluded on March 04, 2021 with two winners, each winning a gift hamper and a winner's certificate. This contest was held to promote science to the general public by showcasing how everyday phenomena are packed with very interesting science at their core.

#### **Data Science with Python**

**Industry Partner:** Brain Mentors Private Limited

**Speaker:** Mr Ravikant Tyagi from Brain Mentors

**Date/Time/Location:** March 03 to March 07, 2021, 4-6 pm, Online mode Google Meet

**Participants:** Chapter members and College students

An online workshop on 'Data Science with Python' was organized in collaboration with Brain Mentors Pvt Ltd. as the industry partner. Key Learning Objectives included Data Analysis on Covid -19 and IPL, Face Detection and Recognition, Face Mask Detection using Machine learning.

**Organizing team for all the above events:** Mr Prince Sharma, Mr Aman Tyagi, Ms Shruti Yadav, Mr Prahlad Prajapat, Mr Anurag Saxena, SPIE Team, and Dr Amit Garg

### **3.2. Science Setu Programme@ANDC**

**Coordinators:** Prof. Urmi Bajpai, Dr Anupama Shukla and Prof. Seema Makhija

Acharya Narendra Dev College, University of Delhi along with Translational Health Science and Technology Institute (THSTI), Department of Biotechnology, Ministry of Science and Technology, Govt. of India organized a Science Setu Program on March 17, 2021.

This year Virtual Science Setu event was organized on 'Viruses & Immunity'. This event was held on March 17, 2021.