

SPIE. STUDENT CHAPTER

Malaviya National Institute of Technology, Jaipur India



2019 SPIE Student Chapter Annual Report



Prepared by:
Aakansha Agarwal
Secretary

Executive Summary:

The MNIT Student Chapter was established in September 2016 and is part of the MNIT Electronics and Communication branch students, which includes student members from SPIE, OSA, and IEEE. We hold quarterly meetings and most activities on and near the main campus of MNIT.

The purpose of the MNIT Student Chapter is to support optics students by providing valuable academic resources, facilitating career development through networking opportunities, and representing the study of light to the public. Along with the development of student who are members of SPIE Student Chapter MNIT, we aim to create awareness among the school level students so that they are exposed to the latest advancements in the technology concerning optics and photonics.

One of the biggest challenges that our chapter faced this year has been organization planning. As many officers graduated in the year in May 2019 resulting in newer members with lesser experience to plan and arrange the events. We are working hard to overcome the same by including more members and training them, so that this problem does not continue in the session 2019-2020. To ensure the knowledge transfer, we hold regular sessions in the supervision of the more experienced members.

Contact Information:

For general questions about our chapter, please email our chapter advisor, Vijay Janyani, at vjanyani.ece@mnit.ac.in

Facebook Page: <https://www.facebook.com/SPIE-Student-Chapter-MNIT-Jaipur-1719962794990023/>

2018 - 2019 Officer Listing:



Prof. Vijay Janyani
Advisor
Professor at ECE Department, HOD of MRC, MNIT, Jaipur
vjanyani.ece@mnit.ac.in



Bipin Kumar Saw
President
PhD Scholar at MNIT, Jaipur
bipin.ece@mnit.ac.in



Chaithanya Kurra
Vice President
PhD Scholar at MNIT, Jaipur
2018rec9029@mnit.ac.in



Aakansha Agarwal
Secretary
2nd year Master's Student, MNIT, Jaipur
2018pwc5408@mnit.ac.in



Lokesh Sharma
Treasurer
PhD Scholar at MNIT, Jaipur
2019rec9145@mnit.ac.in

2019 – 2020 Officer Listing:

Since we recently held elections, the officers are likely to remain the same in the initial part of 2019-2020 session. The next elections will be held in September 2020.

Student and Community Membership

At the time of this report, there are 13 student members affiliated to the MNIT Student Chapter and there are currently about 30 students involved in the MNIT Student Optics and Photonics Group.

Name	Email	SPIE Membership Expiration Date
Ankit Agarwal	2017rec9052@mnit.ac.in	22 June 2020
Aakansha Agarwal	2018pwc5408@mnit.ac.in	19 February 2020
Abhinav Bhatnagar	abhinav.jrf@mnit.ac.in	1 April 2020
Usha Choudhary	2015rec9010@mnit.ac.in	31 January 2020
Jyotsana Singh Gautam	2018pwc5148@mnit.ac.in	19 February 2020
Sharwan Kumar Jangid	sharwanjangid.ece@mnit.ac.in	24 February 2020
Shalini Khare	2019rec9005@mnit.ac.in	20 August 2020
Ashish Kumar	2014rec9522@mnit.ac.in	1 February 2020
Hitesh Kumar Sharma	2019rmr9121@mnit.ac.in	31 October 2020
Chaithanya Kurra	2018rec9029@mnit.ac.in	30 September 2020
Ankur Saharia	2017rec9066@mnit.ac.in	9 October 2020
Bipin Saw	2018pwc5148@mnit.ac.in	20 August 2020
Lokesh Sharma	2019rec9145@mnit.ac.in	14 October 2020

Activities Report

Drawing Competition

Organizer: SPIE Student Chapter MNIT

Date/Time/Location: October 25th between 10:00 a.m. to 12:30 p.m. at Kendriya Vidyalaya-III School, Jaipur

Participants: About 120 school students of classes 6th, 7th and 8th and 2 teachers

- SPIE student chapter organized a Drawing Competition in a primary school Kendriya Vidyalaya-III, Jaipur on 25th October 2018. The theme of the drawing competition was “Light”. The sole purpose of this event was to bring out the creativity and artistic talents among students and motivate them about light.
- The event started with a short speech in the morning assembly by the vice president of the SPIE student chapter Mr. Ashish Kumar who introduced the SPIE student chapter and thanked the principal of the school and the drawing teacher for their cooperation in conducting this drawing competition.
- Students of classes VI to IX actively participated in the competition. Students enthusiastically took part in the competition and made wonderful paintings on the given theme. The students had an enjoyable time painting on the theme and showcasing their creativity and they were very happy and enjoyed drawing and painting the pictures. The sheets were supplied to them by the SPIE chapter.
- Students proved that they do not only excel in academics but also shine in exhibiting their skills by their creative presentation. Some students drew efficient use of solar energy, whereas some students drew applications of light. About 120 students participated in the event.
- The finished products were amazing as the children had let their imagination and created absolute magic. It was indeed a very successful event and a memorable one too as all students proudly displayed their works. The judges for the event were we, the SPIE chapter officials & members, and the drawing teacher. We have taken time and effort to judge, and in this process, we believed that every participant was a winner.
- Next day, early in the morning in the assembly, the winners of the contest were announced, and prizes were given away as a token of appreciation and encouragement. Some photographs of the event are placed below:

Event Photographs



School notice board and SPIE chapter members photo

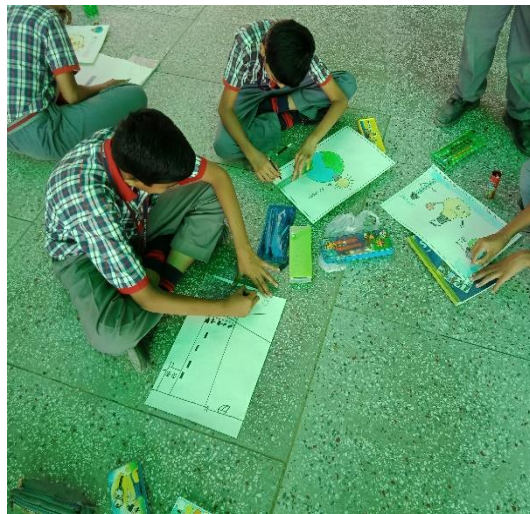


Short speech about SPIE student chapter and drawing competition by Vice President of chapter Mr. Ashish Kumar





Students participating in drawing competition



Students participating in drawing competition



'Judges' having a really tough time to select the best ones from the lot of beautiful drawings !



Distributing the prize by principle



Group Photo with school students



Group Photo with school students

School Visit

Organizer: SPIE Student Chapter MNIT

Speaker: Aakansha Agarwal (1st year Master's Student) and Jyotsana S. Gautam (1st year Master's Student)

Date/Time/Location: February 28th between 10:00 a.m. to 12:30 p.m. at Government Girls Senior Secondary School, Mahatma Gandhi Road, Gandhi Nagar, Jaipur

Participants: About 70 school girls of classes 9th, 11th and 12th and 4-5 teachers

- In India, 28th February is celebrated as National Science Day and we SPIE members organized this visit to promote active involvement of students and teachers in science related activity and inspire tomorrow's young scientists to choose optics as a career.
- The event started with a short speech by the vice president of the SPIE student chapter Mr. Ashish Kumar introducing the SPIE student chapter and thanked the principal and teaching staffs for allowing us to educate the students.
- To encourage scientific thinking and promote better understanding of concepts of optics among students and teachers of high school, we team members described the various optical terms and explained different phenomena such as sources of light, diffraction, scattering, refraction, reflection, interference, polarization of light, total internal reflection, guiding of light inside fiber, optical lenses, LED, laser and optical communication.
- The team created an interactive environment to encourage students to ask questions and to get doubts cleared in different areas of optics and promote their effective participation. All students took keen interest in gaining knowledge and lots of questions were answered by our team. The event was successful and the joy of learning brought to the faces of children.

Event Photographs



Explaining different phenomenon of light



Explaining lens and diffraction phenomenon to students



Demonstrating polarization of light



Demonstrating Total Internal Reflection (TIR) and distributing the prize



Demonstrating Total Internal Reflection (TIR)



Demonstrating Total Internal Reflection (TIR)



Giving souvenir to Principal



Group Photo with school students

School Visit

Organizer: SPIE Student Chapter MNIT

Speaker: Aakansha Agarwal (2nd year Master's Student)

Date/Time/Location: August 5th between 12:00 p.m. to 1:30 p.m. at Kendriya Vidyalaya, No. 1, Bajaj Nagar, Jaipur **Participants:** About 280 students of class IX

- SPIE student chapter MNIT Jaipur organized a visit to a school named Kendriya Vidyalaya, No. 1, Bajaj Nagar, Jaipur on 5th August. Kendriya Vidyalaya is a Central Government School.
- There were about 240 students of class IX who were present in a big hall. The event started with a short speech by the secretary of the SPIE student chapter Mr. Bipin Kumar Saw who gave an introduction of the team and SPIE and thanked the teaching staff of the school for allowing the team members to educate the students.
- The team taught the students about the various optical terms and phenomena such as sources of light, diffraction, scattering, refraction, reflection, interference, the polarization of light, total internal reflection, guiding of light inside the fiber, optical lenses, LED, laser etc. We, the team demonstrated various experiments related with the basic phenomenon of light. The students were excited with these experiments and they are taking interest to understand the basic concepts of light.
- The team created an interactive environment where students had the freedom to interact and had a chance to ask questions. All students took a keen interest in gaining knowledge, and lots of questions were answered by our team. The event was successful, and the joy of learning brought to the faces of children was more than palpable. It was the best moment for the entire SPIE student chapter team as spreading education to children and it can make a big difference in their life which will eventually help in the growth of the country.

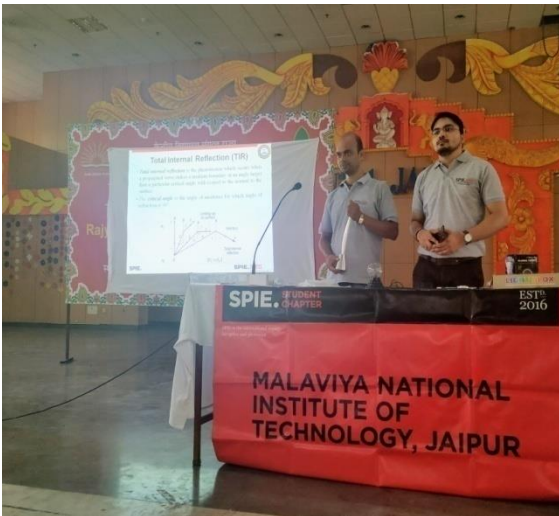
Event Photographs



Introducing about SPIE and Team members



Explaining different optical phenomenon to students



Explaining TIR phenomena to students



Explaining different optical phenomenon to students



Group Photo with school students

Photography Contest

Organizer: SPIE Student Chapter MNIT

Date/Time/Location: 6th November to 8th November, 2019 at MNIT, Jaipur

Participants: Students of MNIT, Jaipur

- SPIE Student Chapter MNIT organized a photography contest with the theme “**LIGHT**” at the technical fest Sphinx 2019, organized in the college.
- As this fest is a platform to a large number of engineering students, we chose this for our photography event.
- We organized this event with the following objectives:
 - Introducing the organization SPIE to the students.
 - Bringing out the creativity of the students.
 - To bring to the notice of the students how they interact and encounter the different sources and properties of light in their daily lives.
 - Bring out the creativity of students
- Planning and event execution:
 - The idea of this contest was given by our chapter’s advisor, Dr. Vijay Janyani, under whose supervision this entire event was organized.
 - For the announcement of the event, a mail was created with the following poster and a pdf with all the rules to be followed.
 - The students registered through a google form in which along with their personal details, they had to give a title and description to the photo they submit.
 - To keep the event simple, we asked the students to take the photo with the camera of their mobile phones.
 - The winners were decided according to the creativity, the justification of theme, along with title and description of the photograph given by the participant.
 - From the designing of poster or google form to the decision making and prize distribution, everything was done by Mr. Bipin K Saw, Ms. Aakansha Agarwal, Mr. Chaithanya Kurra and Mr. Ashish Choudhary.
- The winners were awarded cash prizes of Rs 1500/-, Rs. 1000/- and Rs. 500 to the I, II and III prize winners respectively.

Event Photographs

SPIE Student Chapter MNIT - Digital Camera Photography Contest 2019

Kindly refer to the Rules and Regulations before submitting your entry in this contest

The name and photo associated with your Google account will be recorded when you upload files and submit this form. Not spie_chapter@mnit.ac.in? [Switch account](#)

*** Required**

Email address *

Your email

SPHINX ID *

Your answer

Name *

Your answer

College Name: *

Your answer

College ID: *

Your answer

Submit your photograph(only in JPEG format and <7 MB): *

[ADD FILE](#)

Enter a suitable title for your photograph: *

Your answer

Write a short description of how your photograph is related to the theme of the contest (not exceeding 50 words): *

Your answer

When and where was your photograph taken? *

Your answer

Adjustments made to the photograph and other interesting details (if any):

Your answer

SUBMIT

Never submit passwords through Google Forms.

This form was created inside of Malaviya National Institute of Technology, Jaipur. [Report Abuse](#)

Google Forms

The google form for submitting the photo

GRAB YOUR NEAREST SMARTPHONE AND JOIN US FOR

PHOTOGRAPHY CONTEST

@SPHINX'19

THEME: **LIGHT**



I Prize: Rs. 1500/-
II Prize: Rs. 1000/-
III Prize: Rs. 500/-

FREE REGISTRATION
FOR FURTHER DETAILS REFER TO OUR MAIL



The poster designed for the event

- **Winners:**
- **I Prize:**
- **Title:** Add Sparkle to your life
- **Description:** The beautiful light of every season reminds us that no amount of darkness can conceal a spark of light.
.....Smile, Sparkle, Shine.....



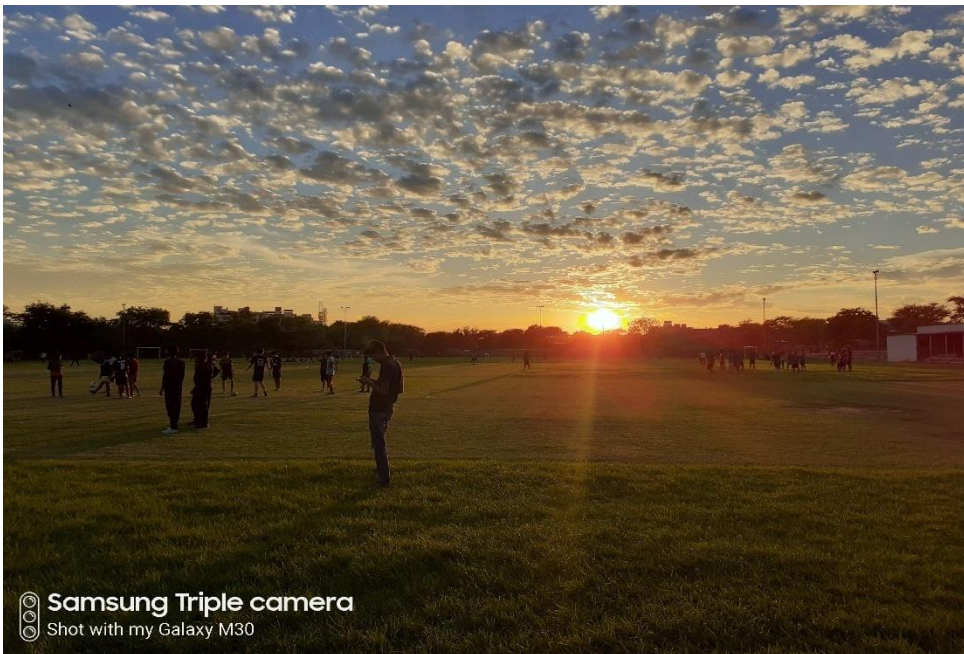
➤ **II Prize:**

- **Title:** Every sunset promises a new dawn, a new hope to rise higher than yesterday.
- **Description:** Change is the only constant thing in this world which can be seen in nature daily. In such an ever-changing world, photograph paves a way to teleport one back to any moment.



➤ **III Prize:**

- **Title:** Sunset at mnit
- **Description:** It is suitable for nature photography

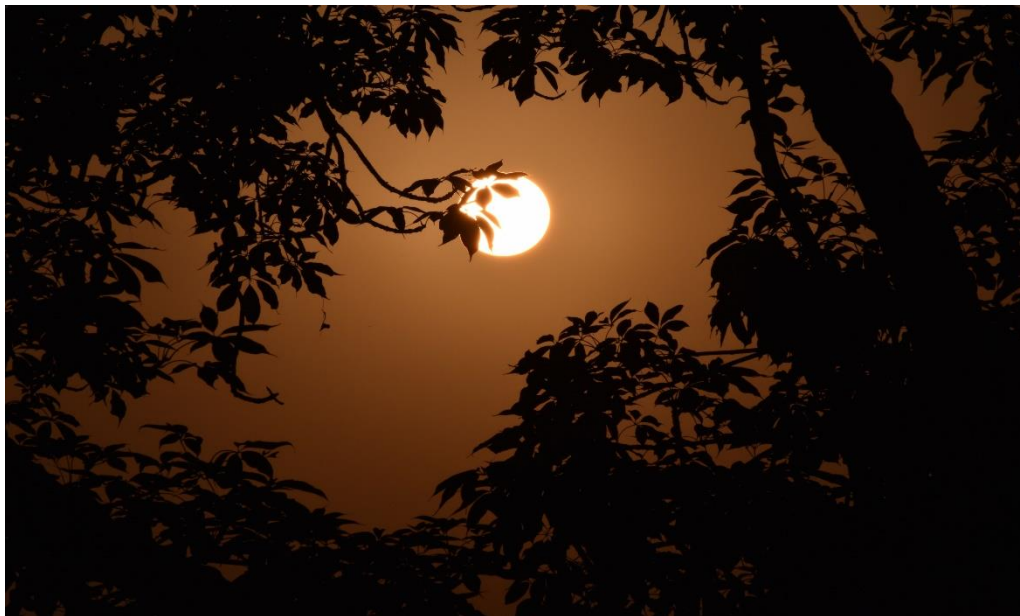


Other worthy photos

- **Title:** Life Under The Serene Sky
- **Description:** The slight darkness of the sunset creates a feeling of joy and tranquillity in us. Thus landscape presents a piece of enchanting beauty, where one can enjoy the serenity of the sunset.



- **Title:** Cosmos Tree
- **Description:** Cosmos that is space and object in space viz. sun. Sun is the important part of any planetary system and of course also important to our lives. Similarly, trees are also important for life. Sun is in centre in my image because it gives life to trees.



- **Title:** Bonfire
- **Description:** The basic form of light source is fire. Bonfire brings not only warmth but also creates the aura of togetherness and affection. The light is what makes us feel good about existence on earth.





Chapter Officers with the event winners

International Day of Light (IDL) Celebration

- SPIE student chapter MNIT Jaipur organized an event in ECE Department, MNIT Jaipur on the dated of 9th August, 2019. The event was mainly aimed to celebrate the International Day of Light, although it was organized a few weeks after the actual IDL dates, on 9th Aug 2019, since the student were busy in the examinations earlier. The main aim was to involve students in the light-based activities, create awareness and interest, and to motivate more members to join SPIE Student Chapter.
- The event started with a short speech by Ms. Akansha Agarwal who gave a presentation on introduction of SPIE. She explained that how SPIE is promoting the importance of lighting technology and spreading awareness of light and energy infrastructure in sustainable development for improving quality of life in the developing world. She gave the information about SPIE peer-reviewed scientific journals, conference proceedings and reference volumes in print and online. She explained that the society provides more than \$4 million in support of optics education and outreach programs around the world.
- After the presentation, the team distributed the foldscope kit to student groups. Students are in the group of two to three students. Each group is making the microscope by following the instruction which is given by SPIE student chapter secretary Mr. Bipin Kumar Saw. After making the microscope these students tried to see the pollen grain samples and the samples provided with the foldscope kit. All students are taking interest to see the samples by microscope.
- The team appreciated to students for their effort put in the making of foldscope. The team created an interactive environment where students had the freedom to interact and had a chance to ask questions. All students took a keen interest in gaining knowledge about SPIE and lots of questions were answered by our team. The event was successful, and the joy of learning brought to the faces of students.

Event Photographs



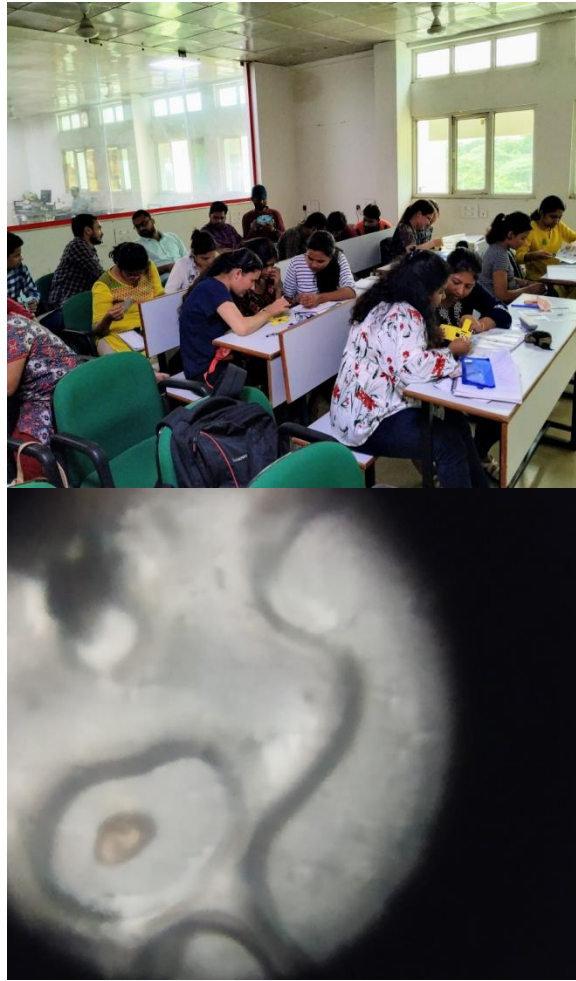
Introducing about SPIE by Ms. Akanksha Agarwal



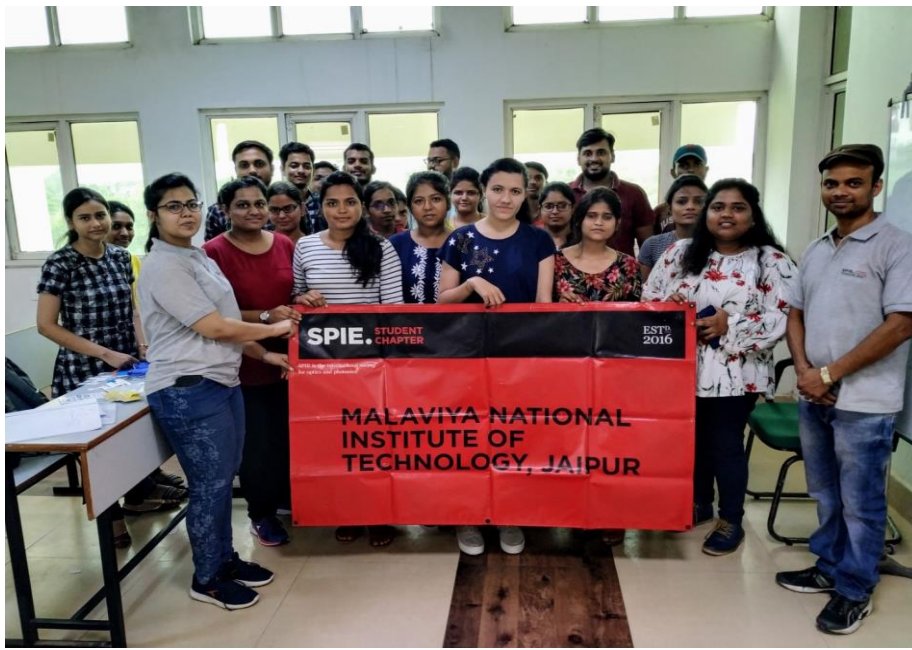
Making Microscope from Foldscope



Making Microscope from Foldscope



Making Microscope and picture from Microscope



Group Photo with students

Student Professional Development and building Industry Connections

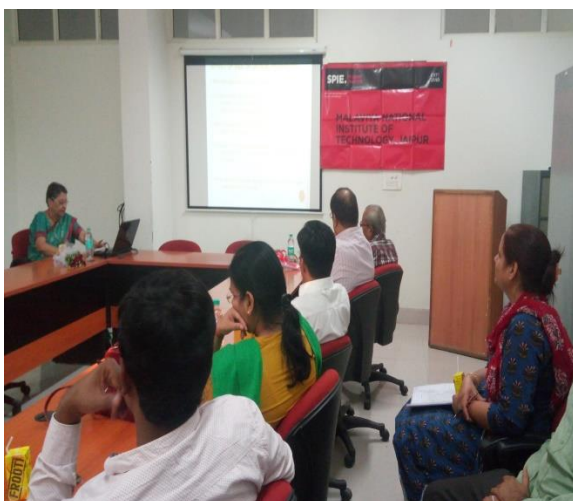
Invited lecture and interaction on Optical Properties of Nanomaterials

- The SPIE student chapter team organized an interactive session with Dr. Madhuri Sharon, who is the Managing Director - S.P.De-Garbage, Managing Director - Monad Nanotech Pvt. Ltd., Mumbai, and Research Director at Walchand Centre for Research in Nanotechnology & Bio-Nanotechnology, Solapur, India. The event was organized on 22nd November 2018 in Committee Room of Electronics and Communication Department at MNIT, Jaipur, Rajasthan.
- About the Invited Expert: Dr Madhuri is currently the Co-PI of two successful research projects funded by the National Telecom Regularity Authority (NTRA) and Information Technology Industry Development Agency (ITIDA). She is in charge for many assignments by Government of India and appointed as an expert in different advisory committee. She has authored many books and received various prestigious awards like "Vijay Shree" award in 1997, "Bharat Gaurav" in 2002, "Lok Vigyan Sanman" of Bundelkhand in 2003, "Indian Leadership Award" for Industrial Development in 2011, "Rashtra Pratibha Puraskar" in 2012, "NMRL Woman of the year" in 2014, "Honour award, 2016" by National Academy of Agricultural Sciences and at present she is nominated for "Excellence in Quality, 2017" by Europe Business Assembly. Her research interests are Nanoparticles and Quantum Dots to deliver drugs for cancer and neurodegenerative disease therapy.
- To begin with, Mrs. Usha Choudhary, SPIE student member addressed the students and faculty members about this event and introduced Dr. Madhuri Sharon, and welcomed her with a bouquet. It was then followed by the interactive lecture of Dr. Madhuri Sharon. During the lecture, Dr. Madhuri explained the optical and physical properties of nanoparticles. After her lecture, the students were given time to interact with the dignitary. Through the interaction, several other information about optical properties of the nanoparticle was discussed. The students came to know about the challenges faced in the Industry. The faculty members and students who are working in similar or allied areas informed about their research work briefly, and obtained expert opinion.
- The event was successful with the presence of audience including the faculty members, Ph.D. scholars, M.Tech students (about 35 in all). It helped students to know about nanoparticle optical properties. The event was very much appreciated by the audience and in fact they wished that she can visit us one more time in future for further discussions. She was presented a memento as a token of appreciation.

Event Photographs



Dr. Madhuri Sharon delivering the talk



Dr. Madhuri Sharon delivering the talk



Faculty members and students attending the lecture



Dr. Madhuri Sharon interacting with the faculty and being presented a memento by Dr.C. Periasamy



Group photograph

Two Week Advanced Course on Principles of Biophotonics

- Department of Electronics & Communication Engineering, Malaviya National Institute of Technology (MNIT), Jaipur (Rajasthan), India organized a 2-week advanced course on *Principles of Biophotonics* from 24th June to 05th July 2019. The international expert for the course was Prof. Alessandro M Deana, Professor in Photonics and Biophotonics, Universidade Nove de Julho, Sao Paulo, Brazil. The course (including the travel expenses of the foreign expert) was funded by the host Institute MNIT Jaipur under the GIAN scheme of Govt of India.
- The course was attended by a large number of participants including Faculty members, Scientists, Research scholars and students across the country. Special approval was obtained from SPIE to allow some of the members of the SPIE student chapter to participate in the course and their fee paid from the grant received for the chapter for the year from the unspent/leftover balance (no additional funding asked from the SPIE Chapter for this purpose). The course was very interesting and relevant particularly for student members of the chapter, since the topic integrates the Photonics with the biology to give the new and emerging research area for the people working in the optics and photonics.
- We gratefully acknowledge with thanks the SPIE headquarter for granting permission for the same as per above arrangement. The course provided lot of new ideas and interest towards photonics to the student members and also propagated the advantages of SPIE student membership to other students in contact.
- The major covered topics were from the basic principles of light and lasers physics; light-tissue interaction up to state of the art in photobiomodulation and photodynamic therapy.
- The course was started with Indian traditional lamp lighting and Prof. Vijay Janyani, the advisor of the Spie student chapter and coordinator of the course, who addressed the participants about this course. Prof. D Boolchandani, Head of the ECE Department briefed about the various departmental activities.
- The course was ended with a feedback session and valedictory function. The certificates were awarded to the participants. The course coordinator and SPIE chapter faculty advisor Prof. Vijay Janyani thanked Prof. Alessandro for spending two weeks with our chapter inspite of his very busy schedule. Prof. Vijay Janyani also showed gratitude to all the participants for their active participation in the course. Prof. Vijay also told the participants that he might plan another such course in the near future.

Special Introductory Lecture on “Biophotonics: Principles, Applications and Collaboration Opportunities

- Prof. Alessandro M Deana also delivered a special invited introductory lecture on “*BioPhotonics: Principles, Applications and Collaboration Opportunities*” under the banner of SPIE student chapter MNIT Jaipur. The lecture mainly gave the overview to the undergraduate and postgraduate students how they can implement photonics in biomedical applications. Prof Deana also discussed various funding and collaboration opportunities for the students to work in this emerging field.
- The event was successful with the presence of a large audience including the faculty members, Ph.D. scholars, M.Tech and B.Tech students. At the end of the special lecture, the president of the chapter Mr. Abhinav Bhatnagar thanked the speaker and extended a vote of thanks to faculties and research students. The event was ended with a high tea.

Event Photographs



Prof. D Boolchandani (Head of the Dept) welcoming the international expert and chapter president inviting the expert for a lecture



Prof Alessandro explaining the light effects



Prof. Alessandro presenting the talk and awarding the certificate to the participant.



Group Photograph 1



Group Photograph 2

Officer Travel Grant Activity

- On behalf of the Board of Directors of SPIE—The International Society for Optics and Photonics, our chapter Secretary Mr. Bipin Kumar Saw has been awarded an officer travel grant to attend the SPIE student chapter leadership workshop during Optics & Photonics International Congress (OPIC) from 21 – 26 April in Yokohama, Japan. The award offers the followings:
 1. A student grant up to \$1450 USD toward travel expenses, lodging expenses.
 2. Full waiver of the student registration fee (valued at \$160 USD).

- Mr. Bipin Kumar Saw attended the full day leadership workshop on 21 April, 2019 which was instructed by Meagan All, Nabila Makhtar and Dr. Catherine Berdanier. Session was started with introduction of SPIE and socializing with each other. It is followed by Meagan All presentation about “How to become a good leader”. She explained that “Time”, “Energy”, “Attention” and “Focus” these four things gives the “clarity” about anything.

- Next presentation was taken by Nabila Makhtar who served as SPIE committee member during 2017-2018. She explained about how to work in a diverse team and japanese culture and lifestyle. She introduced with do’s and don’ts of japanese culture. It is followed by introducing with table mates.

- After lunch, the session was taken by Dr. Catherine Berdanier. The topic of presentation was “The basis for effective technical communication”. She gave a beautiful message to attendees that “Through preparation and practice, we will gain the confidence to effectively message our research to any audience”. She explained that how to envision the needs of an audience, consider their needs, values and their biases. She gave importance to these three terms:
 - Needs: What are the “learning objectives,” or what should people gain from your communication?
 - Values: How do you convince your audience of your expertise? What does this community value?
 - Biases: Are there any topics, approaches, or issues you anticipate with your audience?

- Bipin Saw learned about chapter issues and how to resolve these issues. Such as –

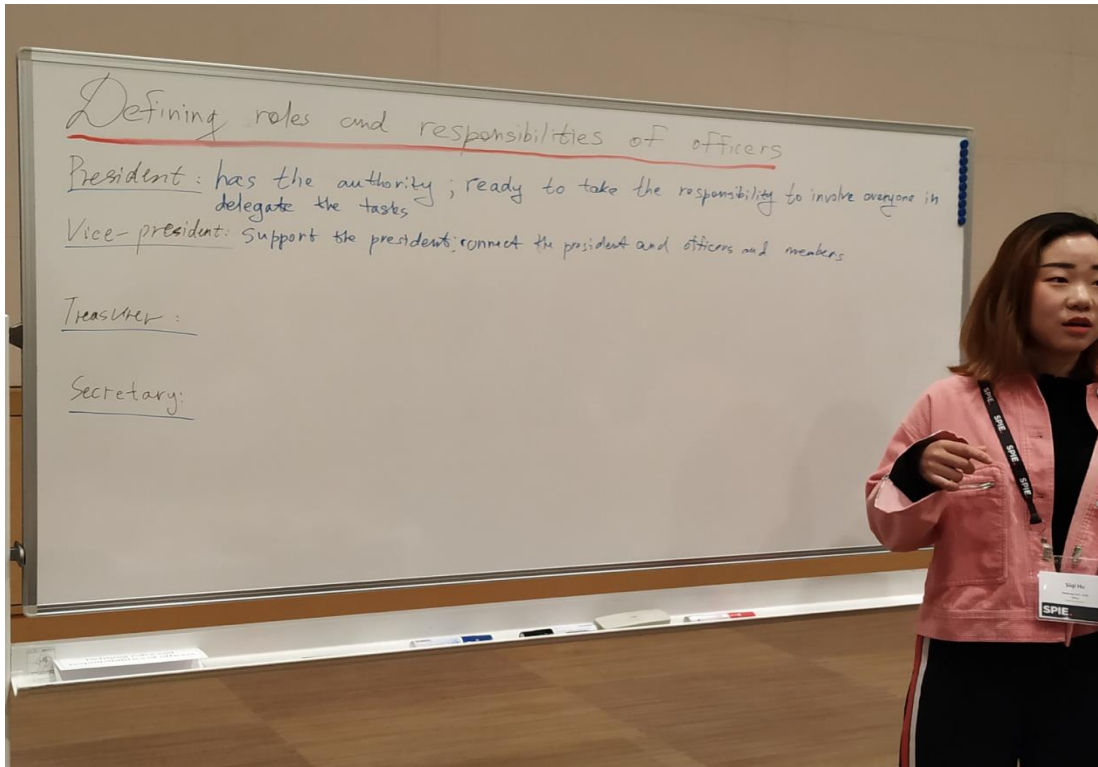
➤ **Completing annual report by due date**



➤ **Training new leaders**



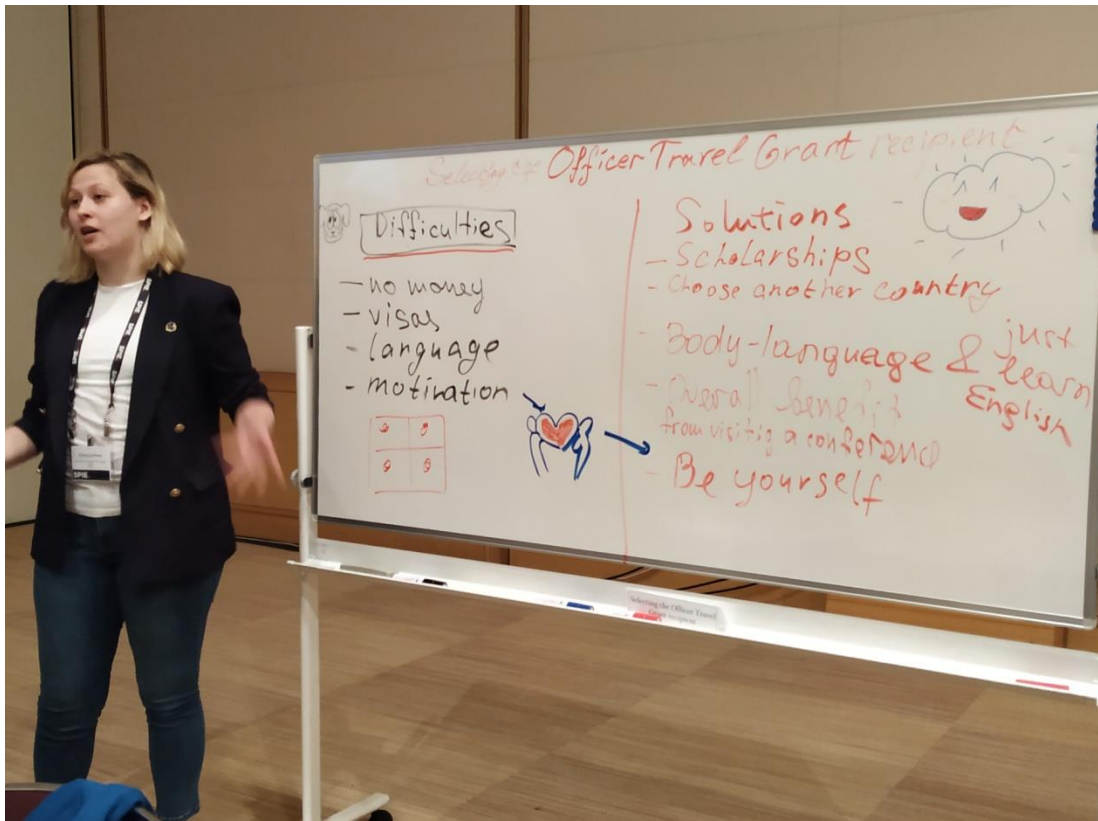
➤ **Defining roles and responsibilities of officers**



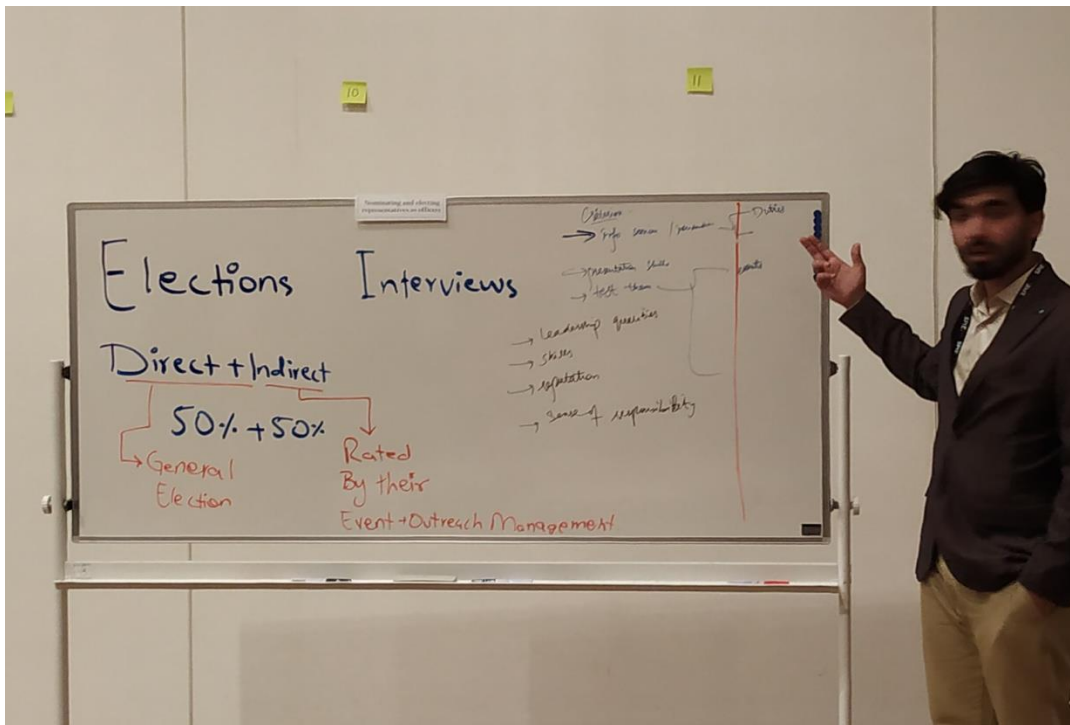
➤ **Recruitment new members**



➤ Selection of officer travel grant recipient



➤ Election interviews



- He also presented the SPIE MNIT Chapter activities throughout the year.



Some photographs during the leadership workshop are-



Mr. Bipin interacted with other chapter officers



Dr. Catherine Berdanier delivering a session on technical writing



SPIE president Jim Oschmann chatting with students during a coffee break



Group Photo



Group Photo

