



Annual Report

**Centro de Investigaciones en Óptica, A. C.
(CIO)**

SPIE Student Chapter

November 2009

Centro de Investigaciones en Óptica, A. C.
Loma del Bosque #115, Lomas del Campestre
Z. C. 37150, Leon, Guanajuato, Mexico
Phone: (52) 477 441 4200
Fax: (52) 477 441 4200

Contents

1. Introduction
2. Current Members List
3. Chapter Activities: January – November 2009
 - 3.1 PhD. María Yzuel Meeting
 - 3.2 Science and technology week: lecture for children
 - 3.3 Science club for children and Science Museum
 - 3.4 EXPLORA PARK: Child's Day!
 - 3.5 Link with the Industry
 - 3.6 Student's Colloquiums
 - 3.7 Student's Seminars
 - 3.8 Meeting with researchers at CIO and Consultancy
 - 3.9 SPIE Leadership Workshop 2009
 - 3.10 Woman in Science: Sixth Year
 - 3.11 Workshop for medium and high school students
 - 3.12 Symposium Optics in the Industry
 - 3.13 Visiting Lecture: PhD. Rachel Won
 - 3.14 Barbecue with students: Recruiting Members
 - 3.15 Event at EXPLORA PARK: World Guinness Record
4. Planned Activities for the future
 - 4.1 Optomechatronics Workshop
 - 4.2 Astronomy Workshop
 - 4.3 Elections 2009
5. Financial Information
6. Current Chapter Officers: Contact Information

1. INTRODUCTION

This year was very dynamic in the SPIE Student Chapter at CIO: new ideas in order to get a better diffusion about science and optics from the chapter members were proposed. We worked very hard in different activities, in different places and with different people. To spread-out the Science, especially Optics, in all levels, was our principal goal this year.

These activities would benefit and strengthened the Chapter as a whole and our institution. In addition to the activities proposed and implemented during 2008, with the aid of the CIO Student Chapter, we were carrying out diverse tasks to fulfill the Chapters three main objectives. We were encouraging members to participate in SPIE's international conferences and we started a new activity called: Student's Colloquium as well.

For new student recruitment purposes, we have popularized the Chapters activities and outreach. Furthermore we have underlined the importance and benefits of an active involvement in Chapter activities.

2. CURRENT MEMBER LIST

During this year we still the chapter with the quantity of 28 members; some of our members are carrying on research in foreign universities at the moment and probably forgot to renew. Other students this month received their grade as Master in Science or Doctorate Degree. This is the current list of members:

Name

- 1 Mariana Alfaro (*Miss*)
- 2 Manuel Briones Reyes (*Mr.*)
- 3 Jorge Caballero Mendoza (*Mr.*)
- 4 Erick Camacho Lazaro (*Mr.*)
- 5 Guillermo Cardenas-Sevilla (*Mr.*)
- 6 Cesar Carrillo Delgado (*Mr.*)
- 7 Francisco Chavez Gutierrez (*Mr.*)
- 8 Victor Contreras Loera (*Mr.*)
- 9 Victor Flores Munoz (*Mr.*)
- 10 Maximiliano Galan (*Mr.*)
- 11 Armando Gomez-Vieyra (*Mr.*)
- 12 Enoch Gutierrez-Herrera (*Mr.*)
- 13 Miguel Leon (*Mr.*)
- 14 Yolanda Lopez Domínguez (*Miss*)
- 15 Orlando Medina Cazares (*Mr.*)
- 16 Luis Meza (*Mr.*)
- 17 Gilberto Munoz (*Mr.*)
- 18 Miguel Navarro Rodríguez (*Mr.*)
- 19 Jorge Parra Michel (*Mr.*)
- 20 Leonardo Perez Mayer (*Mr.*)
- 21 Victor Hugo Romero Arellano (*Mr.*)
- 22 Saul Ruiz Berbena (*Mr.*)
- 23 Eduardo Septien Olmos (*Mr.*)
- 24 David Serrano-Garcia (*Mr.*)
- 25 David Solis Santana (*Mr.*)
- 26 Alicia Torales-Rivera (*Miss*)
- 27 Diego Torres (*Mr.*)
- 28 Paulino Vacas-Jacques (*Mr.*)

3. Chapter Activities

During this period, we continued organizing several activities proposed and implemented during the last administration: chapter meetings, science club for children, student seminars, and we made new activities as well.

3.1 *PhD. María Yzuel Meeting*

On March 2nd in Centro de Investigaciones en Optica it takes the meeting between the SPIE student chapters in Mexico from INAOE, ITESM (campus Monterrey), ITESM (campus Leon), CIO and PhD. Maria Yzuel. We talked about different topics to increase the activities in Mexico in order to diffuse the Optics. Around 70 students from different chapters attended the meeting. The schedule was:

1. Opening by PhD. Fernando Mendoza (Director at CIO)
2. Lecture gave by PhD. Maria Yzuel titled: Characterization and analysis of liquid crystal screens deposited over Si: application to diffractive optic
3. Talk to promote SPIE around the world by PhD. Maria Yzuel offered to all students.
4. Lecture gave by PhD. Gonzalo Paez titled: Skills necessities to manage research projects with the industry.
5. Round table session with all students and chapters officers.
6. Event official picture.
7. Food and closing.

This event was organized by SPIE-CIO student Chapter, ending at 16:00 hours with the handed acknowledgment over to PhD. Maria Yzuel by PhD. Eric Rosas, president of AMO (Academic Mexican Optics).



Figure 3.1.1 PhD. María Yzuel acknowledgment with PhD. Fernando Mendoza and PhD. Erick Rosas



Figure 3.1.2 Official Picture with all the participants



Figure 3.1.3 Round Table session with students chapters from INAOE, TEC Monterrey and CIO

3.2 Science and Technology week: Lecture for children

On April 22 the SPIE-CIO chapter takes part in the sixth week of Science and Technology at Silao, Guanajuato, giving a lecture with some easy experiments offered to children from elementary school. This talk has the objective to promote the interest in science, especially optics, for children. The topic was titled: 'Fibers Optics, what are they and why are useful'.



Figure 3.2.1 giving a lecture for elementary school children



Figure 3.2.2 showing some experiments with fiber optics

3.3 Science Club for Children and Science Museum

Science Club for Children and Science Museum are two projects managed by the “Committee for Science Divulgration” at CIO. These activities aim to awaken the children’s interest towards science, and physical phenomena as a whole. The Chapter members, as well as those not pertaining to it, contribute with experiment explanations. Furthermore, they clarify any doubts that may arise.

On January 28th some chapter members contributed with experiment explanations in the topic of the month called: “Communications Rally” and continuously participate in the science museum at CIO with explanations. Here we would like to express our gratitude to Ph. D. Cristina Solano, responsible for both projects.



Figure 3.3.1 Member of the chapter in the Science Museum



Figure 3.3.3 Science club for children

3.4 EXPLORA PARK: Child's day!

The SPIE-CIO chapter offered help to diffusion committee of this research center in the annual event that is organized in the Explora Park in Leon city. The event was on April 25 with the topic: 3D images. It was a little workshop where the children made their 3D-glasses and they saw many kind of images, learned about this effect and enjoyed the creativity and the enthusiasm of the expositors.



Figure 3.4.1 SPIE student chapter CIO at EXPLORA PARK



Figure 3.4.2 Members showing some experiments and giving some explanation to parents and children

3.5 Link with the industry

At May 13rd SPIE-CIO members visited “Tenis con Imaginación”. It is a company that produces children’s shoes. Students attend the visit giving professional opinions about general problems related with technology trying to improve the quality and process on the production company. This is the first step to get in the industry.



Figure 3.5.1 Student Chapter at “Tenis con Imagination”



Figure 3.5.2 some member of the chapter visiting the industry

3.6 Student's Colloquiums

We discuss topics about general concepts in physics, mathematics and optics like: Vector Analysis, Fourier Transform and Wave Equations and we selected hot topics from Magazines about physics and advances in science around the world, as well. To strength the basic concepts in new students and to spread out novel topics in the field of optics, is the purpose of this activity.



Figure 3.6.1 Discussing about optics and photonics



Figure 3.6.2 Members from the chapter at Student's Colloquium

3.7 Student's Seminars

Sharing their experiences and talking us about what are they doing or what they did, maybe in a stay abroad or in other laboratories of the country, some students and researchers from CIO give a lecture to all student community and members from the chapter.



Figure 3.8.1 Lecture offered by MsC. Daniel Ceballos



Figure 3.8.2 Lecture offered by PhD. Francisco Villa



Figure 3.8.3 Lecture offered by PhD. Gloria Vazquez

3.8 Meeting with researchers at CIO and Consultancy

Some members from student chapter offer their help to students giving consultancy in some courses in order to strength several concepts and topics. Depending on time and experience, advanced students offers this assistance. The SPIE student chapter at CIO organized a meeting between newcomer students and researchers in order to help them to select the best topic for their research thesis and to show a general vision about what are doing at CIO. Around 13 researchers and 30 students participated in this activity.



Figure 3.8.1 Consultancy offered by Jorge Oliva (Member SPIE)



(a)



(b)

Figure 3.8.2 (a) PhD. Daniel Malacara and 3.8.2 (b) PhD. Cristina Solano giving some lectures to newcomer students

3.9 SPIE Leadership Workshop 2009

The last august, the SPIE-CIO student chapter went to the event called: Student Chapter Leadership Workshop. This workshop helped us to share experiences and exchange information in the academic and professional lives between students from different countries. The goal of this event, for us, was the acknowledgment to our web-page in Chapters website competition. We won the second place of this competition. Besides, CIO won a grant for this year through Dr. Cristina Solano in order to organize different activities along the year to spread out the science at all levels.



Figure 3.9.1 SPIE Student Chapter Leadership Workshop 2009



Figure 3.9.2 (a) Winners of the second place in web site competition and 3.9.2 (b) Winner of grant with PhD. Maria Yzuel

3.10 Women in Science: Sixth Year

We happily collaborated in the logistic of the event Women in Science, like every year, which was held at the CIO, August 19-21, where more that 900 posters were presented. Details can be found at the event webpage http://www.cio.mx/6_enc_mujer/nuevo_index.htm.

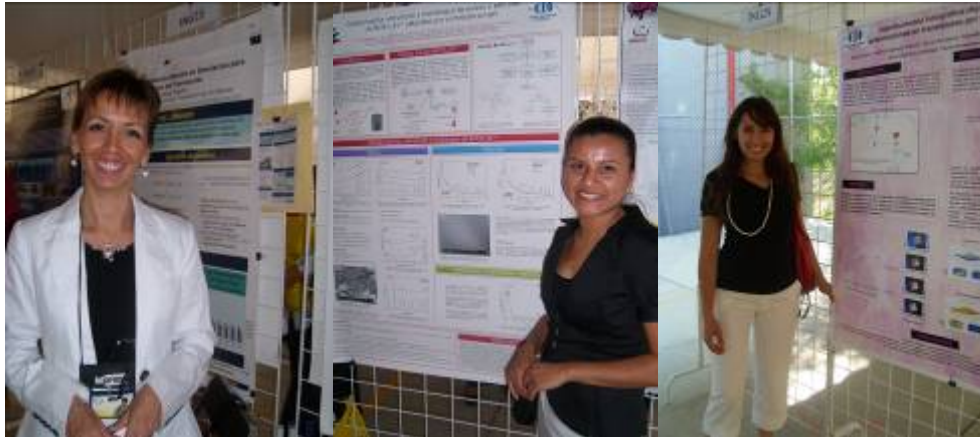


Figure 3.10.1 Women in poster session at event Woman in Science



Figure 3.10.2 Conference at event Woman in Science



Figure 3.10.3 Member from the chapter helping during the event.

3.11 Workshop for medium and high school students

In order to spread and generate scientific skills and knowledge on youth people SPIE-CIO Student Chapter organized the High School and Medium School Optic Workshop 2009! The 3rd annual Optic Workshop was prepared from Tuesday September 1st to Thursday September 3rd with around 120 high school local students assisting to small talks about some optical phenomenal like diffraction light and image formation using simple lenses. Laboratory explanations were prepared in order to generate a scientific way to think on youth people besides understanding the nature of light. Students interact in experiments and demonstrations like interferometers and waveguides and learn about wave nature of light and reflection. Practical explanations for a simple microscopy and telescopes help us to demonstrate real and virtual images on an easy and funny way. Holograms, polarization experiments also were discussed.



(a)



(b)



(c)



(d)

Figure 3.11.1 (a) and (b) members from the chapter showing some experiments, (c) participants of the event and (d) introducing the concepts

3.12 Symposium Optics in the Industry

This year, the SPIE student chapter at CIO takes part in the event organized in Guadalajara, Jalisco on September 11 and 12 in the VII Symposium of Optics in the Industry. In a meeting between members from other chapters, it was an exchange sharing our experiences during the year in different activities. We were participating along the two days in the conferences, poster session and promotion the activities from the chapter.



Figure 3.12.1 Symposium Optics in the Industry



Figure 3.12.2 SPIE student chapter at CIO participating in the meeting between chapters

3.13 Visiting Lecture: PhD. Rachel Won

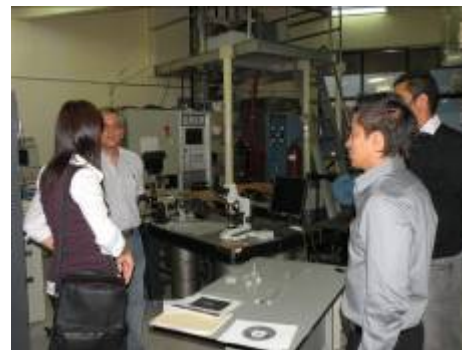
SPIE student chapter organized the conferences at CIO titled: “Submit a paper and Nature Photonics”, where the invited speaker was PhD. Rachel Won (associate editor at Nature Photonics), who kindly accepted to visit our center this year. The lecture took place at CIO from September 21 and 22. The schedule include: visiting laboratories, conferences, poster session and round table.



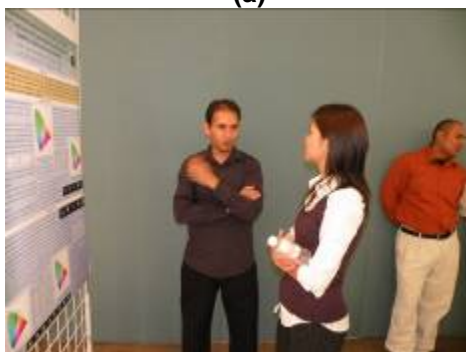
Figure 3.13.1 PhD. Rachel Won at CIO



(a)



(b)



(c)



(d)

Figure 3.13.2 (a) Giving the lecture, (b) visiting our laboratories, (c) poster session from the students and (d) round table with students

3.14 Barbecue with students: recruiting members

On October 23 the SPIE student chapter at CIO organized a meeting between students in order to recruit members and reported them the activities made along the year and to invite them to participate in the next activities. Around 80 students, members and no-members, were in this meeting.



Figure 3.14.1 Students at CIO in the activities report



Figure 3.14.2 PhD. Oracio Barbosa (advisor from the chapter) talking with the students



Figure 3.14.3 Students during the barbecue at CIO

3.15 Event at EXPLORA PARK: World Guinness Record

On October 24, SPIE student chapter at CIO support an activity organized by different organizations including the Committee for Science Divulagation at CIO. This activity consisted in to watch the moon at the same time using a Telescope fixed. Members from the SPIE student chapter help them in order to guide in the correct use of the Telescope. This event took place in different places at Mexico including the EXPLORA PARK in the city of Leon, Guanajuato.



Figure 3.15.1 Member from the SPIE student chapter at EXPLORA PARK



(a)

(b)

(c)

Figure 3.15.2 (a) Showing some experiments, (b) members guiding a telescope and (c) telescopes at EXPLORA PARK

4. Planned Activities for the Future

Following the line of divulgation that we have established, running promotion activities will be supported by Student Chapter members. We will continue with the student's seminars and hands on workshop for high school students, workshops for members and the elections for the new leaders in the chapter 2010-2011.

4.1 Optomechatronics Workshop

The next month, on November 21 and 28, we are planning to organize the optomechatronics workshop in order to have a link with the industry. This workshop will offer several lectures and will show some experiments related with some problems in the industry.

4.2 Astronomy Workshop

A future activity is the first Astronomy Workshop, which one will take place at CIO. We are planning that students build a telescope, giving the theory and to carry out practice. We would like to have the experience and in a near future to spread out at all the community.

4.3 Elections 2009

This year is ending. The new leaders from the chapter at CIO need to be elected. On November we will organize the elections in order to have the new representatives at SPIE student chapter and to continue the activities for the period 2010-2011.

5. Financial Information

During December 2008 the Chapter received the annual transference of funds from SPIE. The initial balance for this report is \$15,000 MXN (Mexican Pesos), that is to say \$1,100 USD (1 USD = 13.64 MXN, rate at date received it).

SPIE STUDENT CHAPTER

BALANCE SHEET 2009 (MxN)

Dates	Revenues	Expenses	Description	Total
December 2008	15,000	0	Initial Balance Found from SPIE	15,000
January 2009	0	1,600	Food with members and new leaders	-1,600
March 2009	0	1,264	Meeting PhD. Maria Yzuel	-1,264
July 2009	0	401	Student's Colloquiums	-401
August 2009	0	630	Student's Seminars	-630
September 2009	0	6,359	Visiting Lecture and Symposium	-6,359
October 2009	0	1,636	Recruitment and activities report	-1,636
			Total Expenses	11,890
			FINAL BALANCE	3,110

6. Current Chapter Officers

President

MSc. Guillermo Alejandro Cárdenas Sevilla
memorias@cio.mx

Vice-President

MSc. Victor Ulises Lev Contreras Loera
ulises@cio.mx

Treasurer

MSc. David Octavio Solis Santana
dsolis@cio.mx

Chapter Advisor

PhD. Oracio Barbosa Garcia
barbosag@cio.mx

Centro de Investigaciones en Óptica, A.C. Loma del Bosque #115 Col. Lomas de Campestre C.P. 37150 Leon, Gto. Mexico Phone: (52) 477-441-4200 Fax: (52) 477-441-4209

Web site: <http://spie.cio.mx>