

# **First Bi-Annual Report**

## **Centro de Investigaciones en Optica SPIE Student Chapter (Leon, Mexico)**

**June 2006**

**Centro de Investigaciones en Optica, A.C.**  
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## 1. INTRODUCTION

As a tangible result of the CIO's Student Chapter ongoing efforts to consolidate a solid organization, new students have become part of our project. This incorporation has benefit and strengthened the Chapter as a whole.

In addition to the activities proposed, and implemented, during 2005, with the aid of the CIO Student Chapter, we are carrying out diverse tasks to fulfill the Chapter's three main objectives. Concerning the Chapter's academic objective, we are currently organizing a visit to our center, via SPIE's Lecturer Program. With respect to the divulgation efforts of our Chapter, we have committed ourselves to acknowledge member, as well as non-member, involvement in Chapter activities. Furthermore presentation cards, as well as shirts, have been designed, and are currently being manufactured. These are intended for members, as well as non-members, of the Student Chapter. At our Chapter, we are encouraging members to participate in SPIE's international conferences, in order to embrace our third objective, i.e. professional career perspectives in Optics & Photonics.

For new student recruitment purposes, we have popularized the Chapter's activities, and outreach. Furthermore we have underlined the importance, and benefits, of active involvement in Chapter activities. A more detailed description of the latter is presented hereafter.

## 2. CURRENT STUDENT CHAPTER MEMBERS

Alfaro Gomez, Mariana Miss. (889985)  
Alvarez Herrera, Cornelio Mr. (3007335)  
Aranda Ruiz, Juan Mr. (869081)  
Dignowity, Doreen Miss. (3056981)  
Escalante, Luis Mr. (3056999)  
Escobar Acevedo, Marco Antonio Mr.(3079653)  
Estrada Rico, Julio Cesar Mr. (3068145)  
Flores Moreno, Jorge Mr. (3003134)  
Galan Gonzalez, Maximiliano Mr. (3039079)  
Gomez Vieyra, Armando Mr. (3057008)  
Gutierrez Hernandez, David Asael Mr (3056990)  
Gutierrez Herrera, Enoch Mr. (3003283)  
Hernandez Alvarado, Matias Mr. (3057009)  
Juarez Palafox, Lorenzo Mr. (3055558)  
Lopez Padilla, Victor Mr. (760802)  
Mata Chavez, Ruth Miss. (3057524)  
Parra Michel, Jorge Ramon Mr. (3070012)  
Piña Villalpando, Luis Elias Mr. (3057007)  
Ramirez, Claudio Mr. (813777)  
Romero, Victor Hugo Mr. (3056980)  
Ruiz Berbena, Saul Mr. (3057001)  
Sanchez-Morales, Maria Miss (3042455)  
Saucedo Casas, Edgar Mr. (3030651)  
Solis Satana, David Mr (3072369)  
Toledo Muñoz, Luis Mr. (3056979)  
Vacas-Jacques, Paulino Mr. (688385)  
Vazquez-Jaccaud, Camille Miss (3039078)  
Villaseñor, Carlos Mr. (3057004)

### 3. DETAILS OF CHAPTER ACTIVITIES: JANUARY – MAY 2006

During this period, we continued to participate in diverse activities proposed, and implemented, during 2005 (e.g., Chapter meetings, hands-on workshops, science club for children, student seminars, and website updating and maintenance). Nonetheless, we have been working with perseverance to crystallize new activities. Concrete results from these strategies have flourished (e.g., Chapter acknowledgement to students, advances in visiting lecturer program planning, design and manufacture of distinctive CIO – Chapter presentation cards and shirts). A more thorough discussion of the aforementioned activities will be presented next.

#### 3.1 Chapter acknowledgement to students

At the CIO Chapter we're convinced of the student involvement importance. Hence, we decided to acknowledge student participation in Chapter activities. A complementary objective, envisioned for this activity, was to invite new students to form part of the Student Chapter. In order to formalize this effort, we invited Dr. Fernando Mendoza (General Director of the CIO) and Dr. Manuel Servin Guirado (Academic Dean of our institution) to participate in this event.



Dr. Fernando Mendoza greets the attendees during the Chapter's acknowledgement event.

In addition to the acknowledgments extended to the student community, Dr. Fernando Mendoza pointed out the importance, and benefits, of participating in such activities as the ones promoted by our Chapter.

### ***3.2 Visiting lecturer program***

Many of our human, as well as economic, resources have been directed to this enterprise. First of all, four candidates were selected from the vast possibilities granted by SPIE. During two weeks the Student Chapter members, as well as those not enrolled, were encouraged to express their preferences concerning this event. All participants voted, for their particular candidate, electronically (<http://spie.cio.mx>). Once the process ended, a Chapter meeting was held. The main purpose of this meeting was to determine the visit's organizing committee. Two Student Chapter members were selected as Chapter representatives for this event: Enoch Gutierrez y Mariana Alfaro. However Enoch and Mariana will be supported by the organizing committee.

The visiting Lecturer, Dr. Joan Lurie, has kindly accepted to visit our center this year. A tentative date for the event has been proposed (September 11 – 15). The estimated cost of the visit oscillates between \$1,000.00 – \$1,500.00 USD.

The visiting Lecturer election was very close, hence the Chapter decided to invite Dr. Valery Tuchin. He amicably replied to our petition, emphasizing that a visit during this semester would be impossible. Nonetheless, he proposed to visit our institution after SPIE's Photonics West conference. Therefore, the current Chapter officers are committed to ensure that enough resources are available for these two events, in order to avoid any hindrances to the upcoming board of officers. The new board of officers will be elected this upcoming August.

### ***3.3 CIO – Chapter presentation cards and shirts***

Since the promotion of diverse professional career perspectives is a core objective of our Chapter, we decided to design, and manufacture, distinctive Chapter–institution presentation cards for the interested students. The design phase of this enterprise was carried out by V. Lopez, whereas the manufacture has been in charge of M. Alfaro, C. Vazquez, and E. Gutierrez.

With regards to divulgation, we recognized the need to form a unified community of students participating in Chapter events. Therefore, we manufactured shirts with distinctive Chapter and institution logos. Also, these are intended to easily identify the CIO Student Chapter members during international assemblies.



Distinctive Chapter and institution logos for shirts

### 3.4 Chapter meetings

The CIO Student Chapter members held one official meeting, and several unofficial short officers' assemblies, during this period.

The latter were of utmost importance since specific officers were selected to implement concrete activities. Moreover, with these short sessions the follow-up processes were greatly enhanced. The official meeting was held on January. The main points discussed were: Chapter detailed activity plan January – June 2006, and reorganization of working groups.

Several agreements were settled during the official meeting:

1. The implementation of most of the activities presented in this document.
2. Mariana Alfaro and Enoch Gutierrez were elected as logistic coordinators for the Visiting Lecturer Program.
3. Design and manufacture of acknowledgements was assigned to Camille Vazquez, Victor Lopez, and Paulino Vacas.
4. Design and manufacture of presentation cards was assigned to Camille Vazquez, Victor Lopez, and Enoch Gutierrez.
5. Jorge Mauricio Flores Moreno was reaffirmed as secretary during Chapter meetings.
6. The promotion coordinators were reorganized. The current coordinators are *Armando Gomez Vieyra* and *Carlos Villaseñor*: Hands-on workshop (intended for high school teachers), *Jorge Parra* and *Rigoberto Castro*: Science club for children, *Jorge Mauricio Flores*: Student seminars, *Victor Lopez* and *Julio Estrada*: Chapter's website: updating and maintenance.

### ***3.5 Hands-on workshop (intended for high school teachers)***

This project, lead by Dr. Reyna Duarte, is supported by the CIO's Academic Department. The program is designed to introduce high school teachers in a theoretical and practical knowledge of Optics fundamentals, and their applications. It allows teachers to familiarize with the basic operation of optical systems. Teachers are expected to use this knowledge in designing experiments for their classrooms.

The course consists of 8 sessions, covering the most meaningful concepts in:

- Image formation
- Geometrical optics
- Laser principles
- Interference
- Diffraction
- Holography
- Spectroscopy
- Polarization

This course is carried out at the CIO academic laboratories. Chapter members, as well as non-members, collaborate in this project guiding the teachers with experiments. They provide components to attendants, set up demonstration experiments, and guide teachers through hands-on lessons.

It takes approximately one month to complete one course composed by 8 sessions. Each course is attended by 6 to 9 teachers. They are grouped in teams of 3 or 4 teachers; each group is guided by a different Chapter member, or non-member, each session. More than 70 teachers have attended this program since its debut.

Collaborating students:

Claudio Narciso Ramirez, Jorge Mauricio Flores Moreno, Luis Enrique Toledo Muñoz, Mariana Alfaro Gomez, Jose Luis Cabellos\*, Maria Eugenia Sanchez Morales, Cornelio Alvarez Herrera, Carlos Villaseñor Mora, Juan Arturo Aranda Ruiz, Lorenzo Juarez Palafox, Jorge Ramon Parra Michel, Haggeo Desirena Enriquez\*, Paulino Vacas Jacques, David Octavio Solis Santana, Guillermo Huerta Cuellar\*, Enoch Gutierrez Herrera, Luis Octavio Meza Espinoza.

Here \* denotes a student that does not pertain to the CIO's Student Chapter, and nevertheless supports the institution with this activity.



Jorge Parra Michel (red t-shirt) has provided guidance to the teachers taking part in this activity.

### **3.6 Science club for children**

Science Club for Children is a project managed by the “Committee for Science Divulgation” at CIO. This activity aims 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.



a)



b)

Photograph a) depicts the talk given by Maximiliano Galan within the “Science club for children” activity. Photograph b) shows Dr. Ascension Guerrero, as well as a disguised student, during the talk entitled: “The science circus”.

The Club sessions are programmed monthly. During this semester (January–May 2006), the Chapter has collaborated in the sessions presented hereafter.

Date: January 26<sup>th</sup>

Subject: "Playing with magnets"

Speaker: Dr. Ismael Torres

Involved students: Jorge Ramon Parra, Rigoberto Castro Beltran, Jose Matias Hernandez Alvarado.

Date: February 23<sup>th</sup>

Subject: "Physics and music"

Speaker: Dr. Zacarias Malacara

Involved students: Luis Carlos Alvarez Nuñez, Jose Matias Hernandez Alvarado.

Date: March 30<sup>th</sup>

Subject: "Fluids"

Speaker: Dra. Cristina Solano and Ma. Teresa Arellano

Involved students: Luis Carlos Alvarez Nuñez, Jose Matias Hernandez Alvarado.

Date: April 27<sup>th</sup>

Subject: "The science circus"

Speaker: Dr. Ascencion Guerrero, Carlos Javier Martinez, Maximiliano Galan, and Rigoberto Castro Beltran.

Involved students: Maximiliano Galan, Rigoberto Castro Beltran, Mariana Alfaro.

Date: May 25<sup>th</sup>

Subject: "Oxidation"

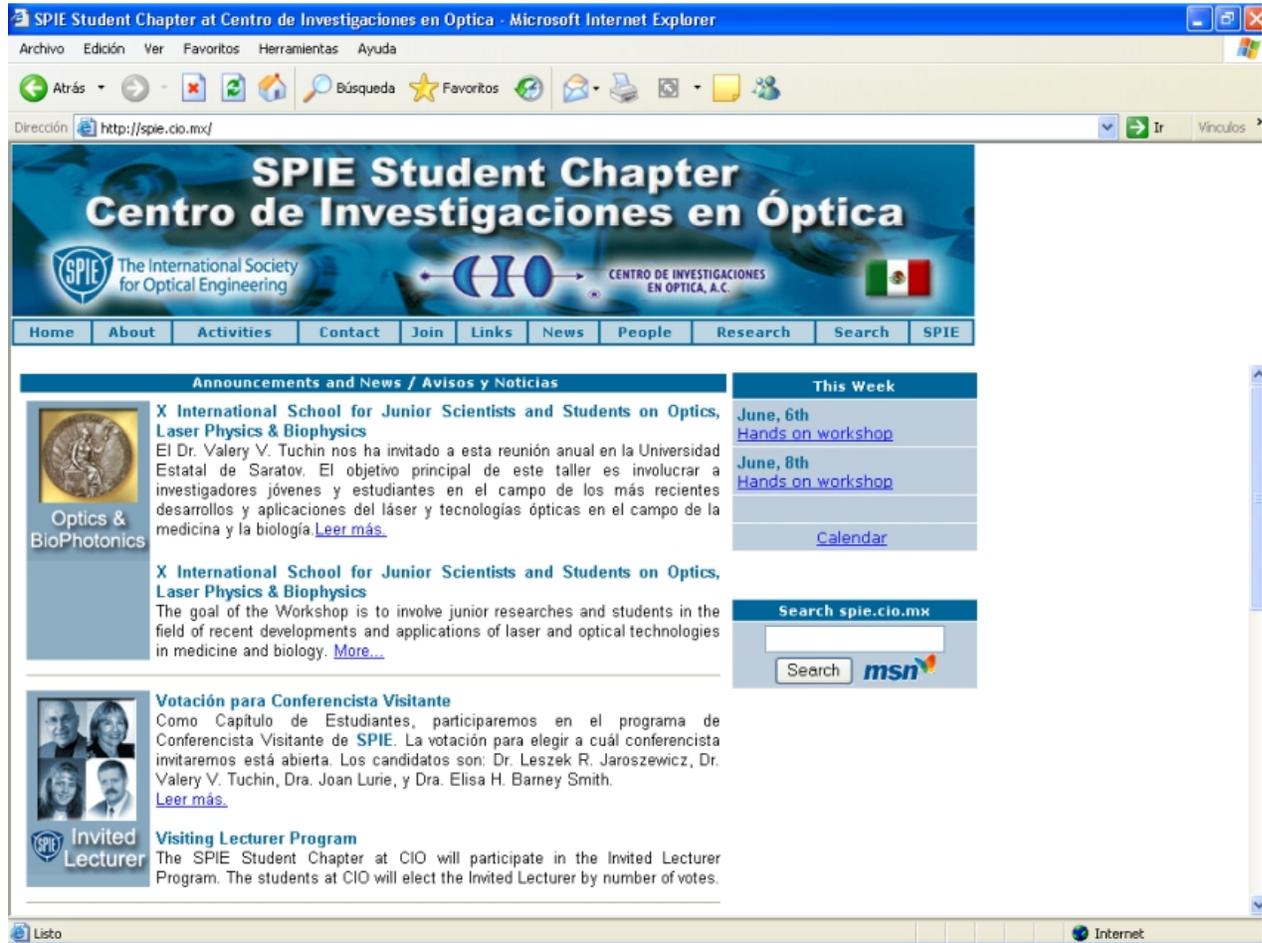
Speaker: Invited professors (ITESM Leon).

### **3.7 Student seminars**

The seminars' main objective is to create a forum wherein the student community may present a theme of interest and / or a related theme to the research they are working on. During this semester, doctorate student Gilberto Anzueto Sanchez presented his present research, entitled: "Chalcogenide Glass Raman Fiber Laser". Currently at least three seminars are programmed for the upcoming period.

### **3.8 Chapter's website: updating and maintenance**

The website's main objective is to promote activities, organization, and relevant issues around CIO's Student Chapter. Furthermore, it has served as a very effective means of communication, since the site is weekly updated, and maintained. The website's implementation has been of uppermost importance for many of the Chapter's activities (for instance, during the Visiting Lecturer Program election).



SPIE Student Chapter at Centro de Investigaciones en Óptica - Microsoft Internet Explorer

Archivo Edición Ver Favoritos Herramientas Ayuda

Dirección <http://spie.cio.mx/>

## SPIE Student Chapter Centro de Investigaciones en Óptica

The International Society for Optical Engineering

CENTRO DE INVESTIGACIONES EN ÓPTICA, A.C.

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Optics & BioPhotonics

**X International School for Junior Scientists and Students on Optics, Laser Physics & Biophysics**  
El Dr. Valery V. Tuchin nos ha invitado a esta reunión anual en la Universidad Estatal de Saratov. El objetivo principal de este taller es involucrar a investigadores jóvenes y estudiantes en el campo de los más recientes desarrollos y aplicaciones del láser y tecnologías ópticas en el campo de la medicina y la biología. [Leer más.](#)

**X International School for Junior Scientists and Students on Optics, Laser Physics & Biophysics**  
The goal of the Workshop is to involve junior researches and students in the field of recent developments and applications of laser and optical technologies in medicine and biology. [More...](#)



Invited Lecturer

**Votación para Conferencista Visitante**  
Como Capítulo de Estudiantes, participaremos en el programa de Conferencista Visitante de SPIE. La votación para elegir a cuál conferencista invitaremos está abierta. Los candidatos son: Dr. Leszek R. Jaroszewicz, Dr. Valery V. Tuchin, Dra. Joan Lurie, y Dra. Elisa H. Barney Smith. [Leer más.](#)

**Invited Lecturer Program**  
The SPIE Student Chapter at CIO will participate in the Invited Lecturer Program. The students at CIO will elect the Invited Lecturer by number of votes.

#### This Week

June, 6th  
[Hands on workshop](#)

June, 8th  
[Hands on workshop](#)

[Calendar](#)

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Current start page within the Chapter's website

#### **4. Upcoming activities: period June 2006 – December 2006**

The spotlight of the Chapter's activities will be directed towards the Visiting Lecturer Program. That is, Dr. Joan Lurie's visit will serve as breakthrough experience for consolidating Chapter participation and organization. Moreover, this visit will settle the foundation for Prof. Tuchin's visit on January. In short, this activity will be a core event in the upcoming period.

Another important activity, concerning the Chapter's consolidation, is the election of a new board of Officers. This activity will ensure the continuity needed in order to establish a firm Student Chapter at our institution. This event will take place during August, starting activities at the beginning of September.

Following the line of divulgation that we have established, running promotion activities will be supported by Student Chapter members. Moreover, during student seminars, the Chapter officers are planning to offer a coffee break to facilitate member integration. Furthermore, this activity will provide us with an incomparable opportunity to promote Chapter, as well as SPIE, events.

## 5. Financial Information

During December 2005 the Chapter received the first transference of funds from SPIE. The initial balance for this report is \$9,236.00 MP (Mexican Pesos), that is to say \$900.00 USD (\$ 11.32 MP = \$ 1 USD, rate at transference date). Due to transference commissions, and exchange rate, our financial information differs from the assigned quantity.

Description	Date of transaction	Expenses	Total*
Initial Balance	December 2005		\$9,236.00
Tax payment for receiving SPIE's books	January 2006	\$370.00	\$370.00
Shirt prototypes for Chapter members	February 2006	\$600.00	\$600.00
<b>Final Balance</b>			<b>\$8,266.00</b>

\*All quantities are given in Mexican Pesos (MP). Exchange rate during transference date: \$ 11.32 MP = \$ 1 USD.

The remaining funds will be allocated to Dr. Tuchin's visit, this upcoming January. We are convinced that this event is of utmost importance, academically speaking.

### Other grants and scholarships

The current Chapter president, Paulino Vacas, was granted an educational scholarship by "The International Society for Optical Engineering", for potential long-range contributions to optics and photonics. Furthermore, the CIO Chapter received a travel grant. This grant will be utilized to assist to SPIE's Optics & Photonics conference next August.

## 6. Current Chapter officers: contact information

The elected Officers for the period 2005-2006 are:

Paulino Vacas Jacques (President)  
pvj@cio.mx

Victor Eduardo Lopez Padilla (Vice President)  
vlopez@cio.mx

Jorge Mauricio Flores Moreno (Secretary)  
jmflores@cio.mx

Lorenzo Juarez Palafox (Second secretary)  
juapala@cio.mx

Enoch Gutierrez (Treasurer)  
enochgh177@cio.mx

Camille Vazquez Jaccaud (Second treasurer)  
jaccaud1@cio.mx

## 7. Contacting CIO's Student Chapter

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