
CIOp-UNLP Student Chapter. Annual Report. December 2011

This is the activity report of our chapter for the Dec. 2010 – Dec. 2011 period. Some of the chapter activities were held at the Centro de Investigaciones Ópticas (CIOp - Optical Research Center), at the Engineering School and at the Faculty of Agrarian and Forestal Sciences, National University of La Plata.

1. Names, email addresses and member numbers of elected Officers

- ◆ President Laureano Bulus Rossini (lbulus@ciop.unlp.edu.ar) ID# 3169522
- ◆ Vice President Jesica Santillán (jesicas@ciop.unlp.edu.ar) ID# 3234235
- ◆ Secretary Dafne Amaya (amayad@ciop.unlp.edu.ar) ID# 3169501

2. List of current CIOp-UNLP Student Chapter members

Dafne Amaya
Laureano Bulus-Rossini
Luisa Cabezas
Emiliano Callegari
Alvaro Carrera
Pablo Costanzo-Caso
Juan Demarco
Patricio Fluxá
Gustavo Forte
Sebastián Gajate
Alejandro Giordana
Damián Gulich
Emanuel Paulucci
Daniel Sierra
Jesica Santillán
Matías Tejerina
Fabián Videla

3. Details of Chapter activities

◆ Lectures at CIOp

Guest Lecturers

- “Recent investigation of heavy ions ($37 \leq Z \leq 92$)”, **Dr. Emile Biémont**, *University of*

Liègeand - University of Mons, Belgium. October, 26.

- “Modificaciones ultrarrápidas en materiales inducidas por pulsos láser de femtosegundos”, **Dr. Martin E. García**, *Theoretical Physics, FB 10 and Center for Interdisciplinary Nanostructure Science and Technology, Universität Kassel, Kassel, Germany. October, 13.*
- “Microscopia de campo cercano”, **Dr. Francisco Jaque Rechea**, *Defensor del Universitario y Catedrático de la Universidad Autónoma de Madrid (UAM), Spain. September, 19.*
- “Identificación y discriminación de cepas bacterianas por ablación láser (libs) y redes neuronales”, **Dr. Jorge Cáceres**, *Universidad Complutense de Madrid, Spain. September, 8.*
- “Attoscience, Ultrafast Optics - how and what for?”, **Dr. Jens Biegert**, *Institut de Ciències Fotòniques (ICFO), Spain. June, 10.*
- “Técnicas experimentales para la caracterización de la propagación de luz en la atmósfera”, **Dr. Darío G. Pérez**, *Profesor Adjunto -Instituto de Física Pontificia Universidad Católica de Valparaíso (PUCV), Chile. March, 10.*

Local lecturers

- “Laser interferometer gravitational-waves observatory (ligo): ¿desde Argentina podremos colaborar?”, **Dr. Mario Garavaglia**. November, 30.
- “¿QUÉ EDAD TIENE EL LÁSER?”, **Dr. Mario Gallardo**. November, 14.
- “Films delgados mesoporosos: recubrimientos transparentes con nuevas arquitecturas multiescala”, **Dr. Galo Soler Illia**, *Centro Interdisciplinario de Nanociencia y Nanotecnología (CINN), Instituto de Nanociencia y Nanotecnología de la CNEA (INN-CNEA). July, 14.*
- “Encriptación de eventos dinámicos”, **Ing. Fabián Mosso Solano**. June, 28.
- “Es la emergencia de la Física un aspecto necesario de la evolución histórica o algo que sucedió por casualidad”, **Dr. Angel Plastino**, *Investigador Superior del CONICET y Profesor Emérito de la Facultad de Cs.Exactas, UNLP. June, 7.*

◆ Optics Academic Program at Faculty of Agrarian and Forestal Sciences

Speakers: Christian Weber, Alberto Lencina and Pablo Costanzo-Caso.

It was two classes on April 4th, one at the morning with approximately 35 Agronomy Engineering students and other at evening with approximately 45 students. The class starts with a review about the Optical Research Center (CIOP), the OSA/SPIE CIOP-UNLP Student Chapters and the Jóvenes Ópticos y Fotofísicos de Argentina (JOFA - Optical and Photophysical Youngsters of Argentina). After that, the following aspects were approached:

- Review about wave concept.
- The Electromagnetic Spectrum and the atomic model.
- Reflection y refraction.
- Interference and diffraction.

After a break, where the interaction among the speakers and the alumni was promoted, three lectures were given:

- 1) Dynamic Speckle in Seeds
- 2) Spectral Reflectance in cultivation
- 3) Optics and Photonics applications

◆ **Visiting lecturer program related activities**

On December 5th, a **Symposium on Optical Fiber Communications** was held at the Electrotechnics Department, Engineering School of the National University of La Plata. The Symposium included talks from Dr. Pablo A. Costanzo-Caso (CIOp), Dr. Diego Grosz (Instituto Tecnológico de Buenos Aires – Universidad de Buenos Aires), together with SPIE visiting lecturer Dr. Mário F. S. Ferreira (Universidade de Aveiro). The workshop's level was set to undergraduate/recent-graduate students. The Symposium included a meal and coffee breaks for the attendees and lecturers. For more information please go to: <http://www.ciop.unlp.edu.ar/simCFO/index.html>

- ◆ Several social activities were developed during the reported period. We organized various meetings with the undergraduate students of the Agronomy and Forest Sciences Faculty and those who attended the Symposiums on Optical Memories and Plasmonics to show them the activity Student Chapter.
- ◆ On April 26 and 27, several chapter integrants showed experimental demonstrations about lasers, optics and photonics and presented some applied research developments and services from our research center at the 18th Congreso Prociencia (<http://www.prociencia.com.ar/>), an event to promote science held at the city of Chivilcoy, in Buenos Aires province.
- ◆ A member was present at the Student Chapter Leadership Workshop August 20th - August 23rd 2011. We presented the CIOp-UNLP chapter poster in the SPIE Optics & Photonics 2011 Exhibition Hall, San Diego Convention Center, San Diego, California, USA. We also used printed information and publicity to advertise the different Chapter activities reported above, and we also showed an interactive experimental activity called "Do you know what kind of laser pointer you have?", aimed to the general public, to instruct people about safety issues regarding the use of laser pointers, designed by the chapter last year in the frame of the 50th anniversary celebration event Laser en Nuestra Vida (Laser in Our Life).
- ◆ Our research institution, the Optical Research Center (CIOp), had two demonstration places at Tecnópolis (<http://tecnopolis.ar/lite/>), one inside the Buenos Aires province sector (Im04) and the other at the CONICET (National Council of Scientific and Technical Research) sector, both on the Imagination Continent. The chapter integrants intensively collaborated, from July until September 2011, to present experiments to promote optics and photonics to the general public, that go from the analysis of the drying process of paint with speckle, to audio transmission over optical fiber.
- ◆ Several chapter integrants participated on November 4, 5 and 6, at the 8th EXPO AUTOS e INDUSTRIA (Automobile and Industry Exposition), La Plata, where experimental demonstrations about lasers, optics and photonics designed by our research institution (CIOp) were shown to the general public.

4. Details of planned activities for the future

- ◆ Organization of the TOPFOT 2012 (National Workshop in Optics and Photophysics) and the EEOF (School for Students of Optics and Photophysics), to be realized in May 2012, at the National University of La Plata, La Plata, Argentina.
- ◆ Organization of a short Symposium about the Visiting Lecturer's topic.
- ◆ Organization of an Optics Academic Program at Faculty of Agrarian and Forest Sciences.
- ◆ Local and guest Lecturers at CIOp and UNLP, Physics Department, Exact Sciences Faculty and Engineering Faculty.
- ◆ Meetings and CIOp-UNLP SPIE Chapter membership drives.
- ◆ Maintaining of Chapter Website.
- ◆ Printed information and publicity.

5. Financial information

○ SPIE Chapter Activity Grant	U\$\$	700
Beginning balance.- U\$\$ 700		
○ Lectures at CIOp: café, snacks and printed information	U\$\$	100
○ Optics Academic Program at Faculty of Agrarian and Forest Sciences:		
-. Snacks, beverages, printed information and publicity	U\$\$	40
○ Symposium about Optical Fiber Communications:		
-. Brochures, badges and certificates	U\$\$	75
-. Lunch and coffee break snacks	U\$\$	150
-. Lecturers expenses	U\$\$	120
○ Meetings with undergraduate students: snacks and beverages	U\$\$	75
○ SCLW Student Chapter poster	U\$\$	50
○ Student Chapter meetings	U\$\$	90
Total	U\$\$	700

Ending balance.- U\$\$ 0

6. Pictures of some of the activities



Symposium on Optical Fiber Communications, held at the Electrotechnics Department of the Engineering School, December 5, 2011.

Top left picture: Dr. Pablo Costanzo-Caso (CIOP) giving his lecture.

Top right picture: symposium attendees having a coffee brake.

Bottom left photograph, Dr. Mário F. S. Ferreira (Universidade de Aveiro, Portugal) giving one of his morning lecture .

Bottom right picture, Dr. Diego Grosz (ITBA, Argentina), giving his lecture.



Tecnópolis (Mega Science exhibition), July – September 2011.

Left picture: Gustavo Forte (CIOP-UNLP member) explaining an experiment at CIOP's box and stand, at Buenos Aires province sector in the Imagination Continent of Tecnópolis.

Right photograph: people appreciating holograms at the CIOP's stand.



8th Prociencia Congress, 26 and 27 of April.

Left picture: Grafitti Laser showing.

Right picture: Matías Tejerina explaining light and laser properties.



CIOp-UNLP Student Chapter April reunion.

Most of the chapter members and some invited guests ready to enjoy a meal.

Laureano Bulus Rossini
President
SPIE CIOp-UNLP Student Chapter
December 12, 2011