CONTEND

1 Officers .......................................................................................................................................................... 2
2 Members .......................................................................................................................................................... 2
3 Chapter Activities ........................................................................................................................................ 2
   3.1 Optics Workshop ..................................................................................................................................... 3
   3.2 ROADSHOW 2015 (04/24/2015) ............................................................................................................. 5
   3.3 TISP (Teachers in service program) and visits to schools planning meeting (21/05/2015) ............... 6
   3.4 First annual school visit: Froebel German Institute (05/22/2015) ......................................................... 7
   3.5 Pizza PARTY (08/19/2015) ..................................................................................................................... 9
   3.6 Second annual school visit: Cendi School (10/09/2015) ...................................................................... 11
   ...................................................................................................................................................................... 12
   3.7 Third annual school visit: Sayari School (11/17/2015) ..................................................................... 13
   3.8 SPIE-OSA New shirt design ..................................................................................................................... 15
   3.9 Visit the Maidanas’s Laser Prints Company (11/24/2015) ................................................................. 16
   3.11 Elections of the Officers ....................................................................................................................... 20
4 Planned Activities for the Future (marvin llena esto, lo que sta aca es un ejemplo de lo que yo puse el año pasado) .................................................................................................................. 21
   4.1 ROADSHOW ....................................................................................................................................... ¡Error! Marcador no definido.
   4.2 Seminar YEAR OF LIGHT .................................................................................................................... ¡Error! Marcador no definido.
   4.3 Optics 4 kids .......................................................................................................................................... ¡Error! Marcador no definido.
4.4 Optics Day ............................................................... ¡Error! Marcador no definido.
4.5 School visits ...................................................................................................................... 22
4.6 Pizza Party ................................................................. ¡Error! Marcador no definido.
5 Financial Information ............................................................................................................. 23

1 OFFICERS

<table>
<thead>
<tr>
<th>POSITION</th>
<th>NAME</th>
<th>EMAIL</th>
<th>SPIE ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESIDENT</td>
<td>Marvin Lazarte Camacho</td>
<td><a href="mailto:choco_327@hotmail.com">choco_327@hotmail.com</a></td>
<td>3589839</td>
</tr>
<tr>
<td>VICEPRESIDENT</td>
<td>Raimy Pardo Peredo</td>
<td><a href="mailto:raimypardo@hotmail.com">raimypardo@hotmail.com</a></td>
<td>3692780</td>
</tr>
<tr>
<td>SECRETARY</td>
<td>Marcelo Vilela Pardo</td>
<td><a href="mailto:mvilelapardo@gmail.com">mvilelapardo@gmail.com</a></td>
<td>3689932</td>
</tr>
<tr>
<td>TREASURER</td>
<td>Gaia Antezana del Carpio</td>
<td><a href="mailto:gaia_adelc@hotmail.com">gaia_adelc@hotmail.com</a></td>
<td>3590323</td>
</tr>
</tbody>
</table>

2 MEMBERS

1. Erick Emanuel Escobar Galardo
2. Gaia Antezana del Carpio
3. Marvin Lazarte Camacho
4. Daniel Ignacio Chirinos Irahola
5. Juan Carlos Clavijo
6. Raimy Pardo Peredo
7. Jorge Luis Quiroga Choque
8. Giomara Eileen Salinas Velez
9. Adrian Gabriel Villarroel Navia
10. Sebastian Ignacio Borja Salmon
11. Marcelo Vilela Pardo

3 CHAPTER ACTIVITIES

2015 was a great year for the development of the chapter activities, there had been amazing new activities to recruit new member and to teach new generations about optics and photonics, also, we made special events to let know people of the international year of light. The amount of cash used in each activity is described in the financial section of this report, here it’s the list of the activities of 2015:
3.1 OPTICS WORKSHOP
The purpose of this workshop was to make students of the first semesters of engineering make some experiments about optics, with the help of the kits that the SPIE gave us, and the equipment that the UPB already had.

![Students doing some experiments in the workshop](image)

*Figure 1: Students doing some experiments in the workshop*
Figure 2: Students doing some experiments in the workshop

Figure 3: Students doing some experiments in the workshop
3.2 ROADSHOW 2015 (04/24/2015)

This was the first recruitment of the year, here we prepared an event were we let the new students of the University know about the student chapter that exist in the university. This activity was carried out with the help of the OSA and IEEE student chapters. The main goal of this activity was to recruit new members for the chapters.

Figure 4: Roadshow 2015
3.3 TISP (Teachers in Service Program) and Visits to Schools Planning Meeting (21/05/2015)

One of the key meeting held in 2015 was this one, because here we made the details about the schools to visit, the topics that were discussed and the functions of each member.
This was the first school visit of the year, in this time we explained about optics, photonics, curiosities of light, and many other interesting experiments to senior students of the school. We encourage this students to study more about this topics, for this activity we also work with the OSA and IEEE student chapter of the university. In this activity we spent transportation and food for the students. This activity was described in our funding request.
Figure 7: School Students enjoying the 3D experiment that we prepared for them
3.5 **PIZZA PARTY (08/19/2015)**

This activity was the first of the second half of the year, here the active members of the SPIE student chapter share between them, eating a pizza and having fun getting know each other and planning some other activities for the future.
Figure 9: SPIE UPB student chapter members and the Advisor having fun

Figure 10: UPB student chapter
3.6 SECOND ANNUAL SCHOOL VISIT: CENDI SCHOOL (10/09/2015)

The second school visit was to the Cendi School for the students of the seventh grade, we explained them about optics, light and other topics, we showed them experiments of light with the help of SPIE KIT and played some creative games with them. This activity was described in our funding request.

Figure 11: CENDI school students
Figure 12: Our member Gabriel Valdez Having fun explaining some experiments to the students
3.7 **Third annual school visit: Sayari School (11/17/2015)**

The next activity was attempting the school “Sayari”. Where we explained the phenomena’s of the light, for this activity we used the SPIE KIT, then we showed the students and explained them how 3D movies works. For this activity we also work with the OSA chapter of our university and the IEEE student chapter of our university. This activity was described in our funding request.

*Figure 13 Members of the SPIE chapter explaining the students about the basics of the optics*
Figure 14 Sayari School students
3.8  **SPIE-OSA NEW SHIRT DESIGN**

With the help of both societies we made a new shirt for the student members of the chapter, the design was made by our member Marvin Lazarte, and it was in commemoration of the year of the light.
3.9 **Visit the Maidanas’ Laser Prints Company (11/24/2015)**

The next activity was attempting to one of the installations of the company MAIDANA. In this activity we learn a lot about Laser prints and how the lasers of this company works. As you can see in the photo there is an engineer explaining us how everything works and the common problems that you can have and how to give solutions to them.
Figure 17 Laser machine prints
Figure 18: Engineer explaining student members how the system works

ALOP is an advanced workshop that presents a pedagogical method of active learning, which is to allow the student to build their own knowledge from performing simple experiments and compare results obtained with the ideas that the student may have of the observed phenomenon. In this learning process, the teacher plays the role of guide and facilitator of learning and this activity replaces the traditional teaching method. Another feature of the workshops proposed by UNESCO, is to implement the method of active learning through material laboratories that require low cost and are easily reproducible. The official website of this event was:

http://alop-bolivia.upb.edu/
The workshop is designed for high school teachers and teachers of early university years of different Latin American countries who are expected to use the method and subsequently contribute to its dissemination organizing new workshops in which they act as facilitators.

*Figure 20 Participants of the Workshop among the SPIE student chapter members.*

### 3.11 ELECTIONS OF THE OFFICERS

The election of the officers for the 2016 were on the 8 of January of the 2018. In this meeting the chapter elect as the new President Marvin Lazarte, as the new Vice President Rainy Pardo Peredo, as the new secretary Marcelo Vilela Pardo and as the new treasurer is Gaia Antezana del Carpio.

We develop a system of points to guarantee that the most active student member of the chapter, and also the one that is interested in taking the leadership of the chapter would be president.
4 PLANNED ACTIVITIES FOR THE FUTURE

This 2016 we proposed to do something new and more professional for us, we designed a list of all the planned activities that we have for this year. The dates of the activities listed below are susceptible of change because we have to coordinate with all members of our chapter.

This list is a short summary of planned activities for 2016:

1. Visiting Lecturer
2. Fun with Optics
3. Know us!
4. Startup Challenge
5. School visits
6. Memories magazine

We are open to proposals and activities of the chapter members, so during the year we can add more than one activity proposals.

4.1 VISITING LECTURER

This year we are planning to have our own optical Congress because in our university there is a very big conference called: Day of Robotics is a technology event in which students prepare robot to compete.

Our goal is to have something very similar which students who have completed their thesis could have stands to expose didactically their research topics and encourage more students for optics.

We want to contact this professional to apply the grant in September 2016:

Stefan Anderson-Engels
- Fluorescence Imaging and Tomography utilizing Upconverting Nanoparticles as a Contrast Agent
- Dosimetry for Interstitial Photodynamic Therapy
- Photon Time-of-Flight for Biomedical and Pharmaceutical Applications

Joan Lurie
- Satellites - What Can We Picture and What Can We Use the Data For?
- Satellite Remote Sensing as a Media Event
- Archiving, Dissemination and Compression of Multiband Satellite Data

Yoseph Bar-Cohen
- Biometrics - Biologically Inspired Technologies
- Electroactive Polymer (EAP) Actuators as Artificial Muscles - Reality, Potential and Challenges
- Humanlike Robots
- Planetary Sample Handling Using the Ultrasonic/Sonic Driller/Corer (USDC) Mechanism

We are very interested in their issues of exposure, but we have to decide whom to invite as chapter to make the respective legal proceedings.
4.2 **Fun with Optics**
The idea of this event is to open conferences by students for kids.

We have scheduled a certified workshop for people who wish to spend a course in Basic Optical our University. It will be a game day demonstrating how it works refraction, diffraction, wavelength, etc.

We have refreshments and prizes for the best participants

Among the educational games we have:

1) Finger against head
2) Hole in your hand
3) Arrows with glass of water
4) Many more

4.3 **Know us!**
This activity we want to expand our chapter with more help that will be needed for the rest of the activities for this year. This activity will serve as a recruitment and as a tool to let us know within the whole university with our activities.

We want to have many more active members in our chapter, so for future activities and we plan to do mini lectures and exhibitions to show the advantages, benefits and opportunities we have as a student chapter.

This activity will be held every two months at our university.

4.4 **Startup Challenge**
We want to make a fair in which students can propose solutions, present projects and at the end of the day make a competition to reward the winners.

In this activity we want to reward the best work of optics that is held every year in the differences subjects studied, will be a meeting where they can show their final projects to other college students to awaken an interest in optics.

4.5 **School Visits**
We have planned 2 schools visits this year, we choose the following schools:

1. Santo Domingo Savio school – April 18 or April 25
2. Aleman Santa Maria school - October 3 or October 10

As a student chapter we have a fairly extensive experience as they already perform various activities with the children in our school visits. We planned to go to schools with other study centers of the university to share expenses, snacks, and stationery.
4.6 MEMORIES MAGAZINE
As a student chapter we want to lunch our memories magazine, in which images are displayed since our inception until the present day, we want to celebrate with a dinner with all members of our branch.

5 FINANCIAL INFORMATION

<table>
<thead>
<tr>
<th>Activity</th>
<th>Initial Balance $</th>
<th># People</th>
<th>Price Tshirt $</th>
<th>Price Food</th>
<th>Transportation</th>
<th>Total</th>
<th>Final Balance $</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTY YEAR OF LIGHT 2015</td>
<td>680</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>200</td>
</tr>
<tr>
<td>DADSHOW 2015</td>
<td>480</td>
<td>15</td>
<td>1.5</td>
<td>-</td>
<td>-</td>
<td>60</td>
<td>41</td>
</tr>
<tr>
<td>School Visit : PRORRRL</td>
<td>420</td>
<td>50</td>
<td>1.5</td>
<td>1.5</td>
<td>20</td>
<td>100</td>
<td>81</td>
</tr>
<tr>
<td>School Visit : CENDI</td>
<td>320</td>
<td>50</td>
<td>1.5</td>
<td>1.5</td>
<td>20</td>
<td>95</td>
<td>22</td>
</tr>
<tr>
<td>School Visit : SAYARI</td>
<td>225</td>
<td>50</td>
<td>1.5</td>
<td>1.5</td>
<td>50</td>
<td>105</td>
<td>11</td>
</tr>
<tr>
<td>Visit the company MAIDANA</td>
<td>120</td>
<td>15</td>
<td>1.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>22.5</td>
</tr>
<tr>
<td>Pizza Party</td>
<td>97.5</td>
<td>15</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td>Optics Workshop</td>
<td>37.5</td>
<td>20</td>
<td>1.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>30</td>
</tr>
<tr>
<td>Total (Materials for workshop)</td>
<td>7.5</td>
<td>1</td>
<td>-</td>
<td>7.5</td>
<td>-</td>
<td>-</td>
<td>7.5</td>
</tr>
</tbody>
</table>

The amount we received as a chapter of the 700$ approved by the SPIE was 630$, because the bank said that the cost of transfer was not canceled so that 70$ would cover that.

The initial balance we had was 680$ because of the 50$ that we had from the previous year.

In this table we can see were exactly the money was spend. First we spend 200 $ for the T-shirts of our 15 members, this t-shirts were specially designed for the year of light event that we had.

We had 3 mayor visits to schools, in these workshops the amount that we spent was for food for the kids and the transportation cost for the members to get to that schools, this last cost was variable from school to school depending on the distance. The majority of these cost were lowered by the help of other student’s chapters of the university like the IEEE and OSA.

We also did a visit to Maidana’s company, this company is oriented to print some arts in many different materials using high powered lasers, so as a chapter we went to the company and they explained us how most of the laser processes worked.

As a chapter we had a major meeting called Pizza Party, here we shared with all the students of the chapter and had some fun, obviously we ate a delicious pizza while we talked about future plans for the chapter an ideas for it to become more active.