Yerevan State University & National Academy of Sciences

SPIE Student Chapter

ID – 3487995

Activity Report

(2016)
Context

Current Members .................................................................................................................. 3
Seminars ................................................................................................................................. 4
3rd International Advanced School on Frontiers in Optics & Photonics ............................... 6
The Big World of Physics ....................................................................................................... 11
“Physics and We” scientific school ..................................................................................... 14
“Physics and We: lightning the optics” scientific camp ......................................................... 15
“Physics is for everyone” science school in Gyumri ............................................................ 17
“Physics is for everyone” science school in Noyemberyan and Voskevan ......................... 18
Our Website .......................................................................................................................... 21
Editor of Conference Proceedings ....................................................................................... 21
Visited foreign research institutes ....................................................................................... 21
Participation of our members in conferences .................................................................... 22
SPIE Student Chapter Leadership Workshop in Brussels .................................................... 29
Our grants and awards ......................................................................................................... 29
4th International Symposium “Optics and its Applications” .................................................. 32
New Year party in Team Time .............................................................................................. 38
Plans for chapter future activities ....................................................................................... 39
Financial Information .......................................................................................................... 40
Current Members

Elected officers starting from January 1st, 2017

Chapter President

Davit Baghdasaryan
david199108@mail.ru

Chapter Vice-President

Razmik Aramyan
razaramyan@gmail.com

Chapter Secretary

Feya Ayvazyan
feayvazyan@gmail.com

Chapter Treasurer

Vardazar Kotanjyan
vatokoto1999@gmail.com

List of Current Student Chapter Members

1. Sergey Amirkhanyan
2. Karen Apresyan
3. Vardan Avetisyan
4. Razmik Aramyan
5. Anna Ayvazyan
6. Feya Ayvazyan
7. Hrachya Babujyan
8. Davit Baghdasaryan
9. Astghik Chalyan
10. Koryun Gevorgyan
11. Ani Grigoryan
12. Narek Karapetyan
13. Vachik Khachatryan
14. Vardazar Kotanjyan
15. Astghik Kuzanyan
16. Karapet Manukyan
17. Tatevik Mkrtchyan
18. Khachik Sahakyan
19. Edgar Sargsyan
20. Tatevik Vardanyan
Seminars

We organized the series of seminars with Armenian scientists and students during 2016, in order to make Optics and Photonics more popular, to make science more interesting and to answer actual questions that arise for students. Seminars were conducted by lecturers from scientific and industrial centers of Armenia and other countries and our chapter members. As always the topics of seminars included various fields of science, optics, astrophysics. Some seminars were unique and were met very enthusiastic and attracted participants from different specializations.

1. **YSU&NAS SPIE student chapter members** Narek Karapetyan and Karapet Manukyan organized seminar dedicated to the possibilities of programming languages «Mathematica» and «Matlab» as a solution of various problems of expediency.

*Karapet Manukyan presented «Mathematica»*  
*Narek Karapetyan presented «Matlab».*
2. **YSU&NAS SPIE student chapter member Razmik Aramyan** during the local seminars had a talk about "The Big Bang Theory". Besides the presentation, the participants of the seminar had a chance to watch a documentary film “The Big Bang Theory” and then discuss about it and not defined aspects of the theory.
3rd International Advanced School on Frontiers in Optics & Photonics

29 February – 12 March, 2016
Yerevan – Ashtarak, Armenia
http://ipr.sci.am/fop2016/

Dedicated to the 10th Anniversary of the Armenian SPIE Student Chapter

SPIE YSU and NAS Armenian student chapter in collaboration with Armenian TC of International Commission for Optics, the Russian-Armenian University (RAU), the Institute for Physical Research of National Academy of Sciences of Armenia (IPR), LT-PYRKAL and the Department of Physics of Yerevan State University (YSU), organized 3rd International Advanced School on Frontiers in Optics & Photonics (FOP-2016). The participants to the school had an opportunity to follow the lectures by the professors from mentioned universities and do practical training as well as they had lab tours in research centers in the field. First and second FOP schools were organized by our chapter accordingly in 2012 and in 2014.

The objective of this school was to bring together experienced and young scientists working on various areas of optics and photonics and discuss the most recent developments in the field.

Organizers

Directors: Narine Gevorgyan (RAU, Armenia), David Hayrapetyan (RAU, Armenia & YSU, Armenia)
Coordinator: Astghik Chalyan (RAU, Armenia)
Manager: Artsrun Martirosyan (IPR of NAS, Armenia)

International Advisory and Program Committees: Aranya Bhattacherjee (University of Delhi, India), David Blaschke (University of Wroclaw, Poland & JINR Dubna, Russia & MEPhl, Russia), Gagik Buniatyan (LT-PYRKAL, Armenia), Anna Kotanjyan (YSU, Armenia), Levon Mouradian (YSU, Armenia), Aram Papoyan (IPR of NAS, Armenia), Hayk Sarkisyan (RAU, Armenia & YSU, Armenia & SPBSTU, Russia)

Local Committee: Vardan Avetisyan (YSU, Armenia), Feya Ayvazyan (YSU, Armenia), Petros Petrosyan (YSU, Armenia)

SPONSORS:

- Russian-Armenian University
- Institute for Physical Research of NAS
- LT-PYRKAL
- YSU Armenian SPIE Student Chapter
Activ

Lecturers

Gayane Grigoryan
(IPR of NAS, Armenia)

Anna Kotanjson
(YSU, Armenia)

Levon Mouradian
(YSU, Armenia)

Levon Aslanyan
(YSU, Armenia)

Rafik Hakobyan
(YSU, Armenia, Beam Engineering for Advanced Measurements Co., Orlando, USA)

Artur Ishxanyan
(IPR of NAS, Armenia)

Hayk Sarkisyan
(RAU, Armenia; YSU, Armenia; SPBSTU, Russia)

Volodya Harutyunyan
(RAU, Armenia)
Lab Tour: CANDLE
(Center for the Advancement of Natural Discoveries using Light Emission)

Coordinator: Artsrun Sargsyan
(YSU, Armenia; CANDLE, Armenia)
Lab Tour: Ultrafast Optics Laboratory
(Yerevan State University)

Coordinator: Levon Mouradian
(YSU, Armenia)

Presentations by students

*Minas Sukiasyan*  
(YSU, Armenia)

*Virab Gevorgyan*  
(YSU, Armenia)

*Astghik Chalyan*  
(RAU, Armenia)

Presentation of YSU & NAS SPIE student chapter activities by Astghik Chalyan

YSU & NAS SPIE student chapter Birthday cake

Group photo during YSU & NAS SPIE student chapter Birthday party
The Big World of Physics

The activity that is already a tradition for the chapter has a target audience as schoolchildren in order to make Optics and Photonics more interesting, understandable and popular for them. This year we have organized several meetings in different schools in all Armenia.

1. “Visit to school”

On December 6th 2016 we visited «Usmunq» school in Yerevan. There SPIE & OSA Student Chapter members demonstrated experiments in optics by using the Optics Outreach Kit from SPIE for schoolchildren. Parallel with experiments our members explained the theory behind, that made the lesson more enjoyable and friendly. As a gift, children got diffraction glasses.

*Karapet Manukyan is explaining Lows of Optics*

*Feya Ayvazyan with children is doing experiment*
2. “Astronomy at school”

Members of our SPIE chapter founded extracurricular clubs of astronomy at high schools. The aim is to spread interests in astronomy among high school students. One of them is AYAS87 (Armenian Youth Aerospace Society) extracurricular club of Physics, Astronautics and Astronomy in 87th School of Avan, Yerevan, Armenia.

Vachik Kachatryan is a teacher at school

Orion Nebula image, taken from Canon 5D mark 3 attached to 8” Schmidt-Cassegrain Celestron telescope, image have been taken from Aragats mountain, Armenia.

Photo Credit: Vachik Khachatryan
As hundreds of different organizations and scientific groups in the world, Armenian SPIE student chapter as well took part in organization of the biannual event dedicated to the international day of photonics. On October 26th 2016 the SPIE YSU & NAS student chapter with OSA YSU & NAS student chapter and Student Scientific Society of YSU faculty of physics organized a lab tour to the Armenian–Greek Research, Development and Production Company LT-PYRKAL. Crystals, Optics, Lasers and Systems departments of LT–PYRKAL have research and industrial facilities for synthetic crystal growth, opto-mechanics and laser electronics manufacturing and laser and EO Systems development. The chapter adviser and the general director of the company Gagik Buniatyan showed and explained to students the role and a current developments of optics and photonics in military, security and so on (http://day-of-photonics.org).

Second from left is our SPIE chapter advisor and director of LT-PYRKAL Gagik Buniatyan

Astghik Chalyan, DAY OF PHOTONICS, Trento, Italy
On February 4-5, 2016 YSU faculty of physics held the “Physics and We” scientific school. The school was organized by OSA YSU & NAS student chapter and Student Scientific Society of YSU faculty of physics, with collaboration of SPIE YSU & NAS student chapter (http://www.osa.am/en/school/school16/).

The school highlight:

✅ Lecturers by researchers, students
✅ Interactive experiments
✅ Social-scientific films

Our SPIE chapter member Vachik Khachatryan presented “How to see unseen”

Participants and organizers of scientific school “Physics and We”
“Physics and We: lightning the optics” scientific camp

Scientific camp “Physics and We: lightning the optics” took place on 8-12 of August. More than 40 participants of the camp were high school and university students of 1-3 grades. Scientific camp was organized by OSA (The Optical Society) YSU and NAS’s student chapter in collaboration with YSU SSS (Student Scientific Society) and SPIE (The International Society for Optics and Photonics) YSU and NAS’s student chapter. This camp was dedicated to centennial of OSA and was founded by OSA as Centennial Special Celebration Event Grant (http://camp.osa.am/en/).

Campers of the scientific camp “Physics and We: lightning the optics”

Theoretical part of the camp was mainly concerned on concepts of the physics, with accent on applications of optics in different fields of physics. Participants had opportunity to take part theoretical and experimental sections, held by professors and young scientists.

Chapter advisor Gagik Buniatyan

Night sky observations with amateur telescopes.
In practical part of the camp participants were separated into 6 groups and studied robotics, rocket engineering, programming languages, program packets and tools that are used in physics.

Rocket engineering

CNC and 3D modelling and printing

Physics in Android applications

Robotics

Measuring equipment

Modeling of Physical Processes on Computer
“Physics is for everyone” science school in Gyumri

On October 8-9 NPUA Gyumri Branch held the “Physics for everyone” scientific course, which included topics of nanotechnologies, telecommunications, applications of optical devices, semiconductors, rocket engineering and other fields. The course was organized by the Student Committee of NPUA Gyumri Branch and OSA YSU & NAS student chapter with partnership of Student Scientific Society of YSU faculty of Physics, GSPI Student Committee and SPIE YSU & NAS student chapter (http://www.osa.am/en/school/pfe-gyumri/).

Course included experimental demonstrations, hands-on activities from rocket engineering.

Organizers and participants of scientific school “Physics is for Everyone”

“Physics is for everyone” science school in Gyumri awards ceremony in which students receive certificates.

In the photo from left to right:
President of OSA YSU and NAS chapter Vardan Avetisyan
Participant of science school Anahit Hakobyan
President of SC of NPUA Gyumri Branch Sofia Harutyunyan
“Physics is for everyone” science school in Noyemberyan and Voskevan

On October 22-23 in Voskevan and Noyemberyan of region Tavush it was organized the next “Physics for everyone” scientific course. The course was organized by OSA YSU & NAS student chapter with partnership of Student Scientific Society of YSU faculty of physics and SPIE YSU & NAS student chapter (http://www.osa.am/en/school/pfe-noy/).

Lectures included topics from various fields and applications of physics. The materials were presented in an accessible way. Both theoretical and hands-on activities from rocket engineering were also included in the course, and the participants launched the rocket they built at the end of the course.
Publications of our chapter’s members


3. DB Hayrapetyan, TV Kotanjyan, HK Tevosyan, EM Kazaryan,”Effects of hydrostatic pressure on the donor impurity in a cylindrical quantum dot with Morse confining potential”, Radiation Effects and Defects in Solids, 1-9, dx.doi.org/10.1080/10420150.2016.1257621


DOI: 10.3103/S1068337216040083


Our Website

One of the most important goals for our chapter is to make its official website: www.spie.am popular and known. The website contains information about our chapter past and upcoming activities, our projects archive. The information about upcoming scientific meetings and schools organized by other SPIE chapters and various scientific centers are also published in the website. It also contains useful links and other information for the students and for those who are interested in the activities of SPIE. We hope that our website will help to get know about our chapter activities.

Editor of Conference Proceedings


Visited foreign research institutes

1. Georgian Technical University, Tbilisi, Georgia
2. Weizmann Institute of Science in Rehovot, Israel
3. International Centre for Theoretical Physics, Trieste, Italy
4. University of Trento, Trento, Italy
5. Fondazione Bruno Kessler, Trento, Italy
6. Université de Bourgogne, Dijon, France
7. University of Rostock, Rostock, Germany
8. Gdansk University of Technology, Gdansk, Poland
9. University of Wroclaw, Wroclaw, Poland
10. Institute of Low Temperature and Structure Research of Polish Academy of Sciences, Poland
11. Wroclaw University of Technology, Wroclaw, Poland
12. Sechenov First Moscow State Medical University, Moscow, Russian Federation
13. CERN, Geneva, Switzerland
Participation of our members in conferences

1. **ISOTDAQ 2016** - International School of Trigger & Data Acquisition, 24 January 2016 to 2 February 2016, Weizmann Institute of Science, Lopatie Conference Center, Rehovot, Israel

2. **ICTP Preparatory School**: Optical Frequency Combs - from multispecies gas sensing to high precision interrogation of atomic and molecular targets, 8-12 February, 2016, Trieste, Italy

3. **ICTP Winter College on Optics**: Optical Frequency Combs - from multispecies gas sensing to high precision interrogation of atomic and molecular targets, 15-26 February 2016, Trieste, Italy

4. 3rd International Advanced School "Frontiers in Optics & Photonics" (FOP-2016), 29 February - 12 March, 2016, Yerevan - Ashtarak, Armenia

5. **SPIE Photonics Europe 2016**, Student Chapter Leadership Workshop, 3-7 April, Brussels, Belgium

6. Collaboration meeting between **YERPHI and LATMOS**, April 4-8, LATMOS, Paris, France

7. European Geosciences Union General Assembly 2016 (EGU-2016), 17-22 April 2016, Vienna, Austria

8. **LIGHT TALKS Armenia**, 30 April 2016, Yerevan, Armenia

9. Collaboration meeting between **YERPHI and Reading University**, May 18-20, Reading, UK

10. Critical Point and Onset of Deconfinement 2016 (CPOD-2016), May 30th - June 4th, 2016, Wroclaw, Poland

11. **Cultural Astronomy** in the Armenian Highland. Young Scientists Conference, 20-23 June 2016, Yerevan, Armenia

12. **Family doctor assistant summer practice** at the clinical bases of Sechenov First Moscow State Medical University, June 27th - July 8th, 2016, Moscow, Russian Federation

13. OPTO-Meeting for Young Researchers & SPIE/OSA Student Chapter Meeting (OPTO 2016), July 6-9 2016, Gdansk, Poland

14. **IMPRS summer school** on Floquet Physics, 11 - 14 July, 2016, Wroclaw, Poland

15. **LPHYS'16**. The 25th annual International Laser Physics Workshop, July 11-15, 2016, Yerevan, Armenia

16. 4th International Symposium on Optics and its Applications (OPTICS-2016), 25-28 July 2016, Yerevan-Ashtarak, Armenia

17. Scientific camp “**Physics and We: lightning the optics**”, 8-12 August, Byurakan, Armenia

18. **Wolfram Summer School Armenia**, TUMO Centre, August 7–20, 2016, Yerevan, Armenia

19. **Course on Cryptography**, organized within the project "SiQuro", 1-2 September, 2016, Trento, Italy

20. **DigiTex Expo**, September 30th – October 2nd, Yerevan, Armenia

21. Symposium Thunderstorms and Elementary Particle Acceleration (TEPA-2016), October 3-7, Nor Amberd International Conference Centre of the Yerevan Physics Institute, Byurakan, Aragatsotn District, Armenia

22. The third annual **ClimateLaunchpad EU** 2016, October 10, 2016, Tallin, Estonia

23. **Frontiers in Optics** and OSA leadership conference 2016, 16-21 October, 2016, Rochester, NY, USA

24. Symposium "**Bound States in Dense Fermion Systems: Applications in Plasma and Astrophysics**", 18 October 2016, Rostock, Germany


27. XV Intergovernmental Conference "Thermoelectrics and its Applications - 2016", 15-16 November 2016, Saint Petersburg, Russian Federation

28. "Nanoscience Laboratory Kick Off Meeting", 25 November, 2016, Trento, Italy


Vachik Khachatryan participated in ISOTDAQ 2016, Rehovot, Israel
Vardan Avetisyan, Astghik Chalyan, Stefano Franco, Tatevik Hovhannisyan, Joseph Niemela and Karapet Manukyan, ICTP, Trieste, Italy

Celebrating 100th anniversary of OSA ICTP, Trieste, Italy

Narine Gevorgyan participated in (CPOD-2016), Wrocław, Poland
The “LIGHTTALKS Armenia” scientific conference took place in the April 30th 2016 in the scope of “International year of light 2015” events.

From right to left: Chapter member Petros Petrosyan with chapter members and organizers of “LIGHTTALKS Armenia” Karapet Manukyan and Narek

First from right is chapter member Feya Ayvazyan. DigiTex Expo, Yerevan, Armenia
Chapter member Astghik Kuzanyan with SPIE President-Elect Dr. Glenn D. Boreman, OPTO-2016, Gdansk, Poland

4th from the right is chapter member Arevik Chalyan. She took part in “Family doctor assistant summer practice”, Moscow, Russia

Chapter members Davit Baghdasaryan and Tatevik Mkrtchyan participated in Wolfram Summer School Armenia 2016, TUMO Centre, Yerevan, Armenia
Presentation of chapter member *Hripsime Mkrtchyan* in the third annual ClimateLaunchpad EU Final start up competition with Simple Liquid Batteries (SLB), Tallinn, Estonia

Chapter member *Vardan Avetisyan* took part in Frontiers in Optics and OSA leadership conference 2016, Rochester, New York, USA
Oral presentation of chapter member Astghik Chalyan during “Kick Off Meeting”, Trento, Italy

Poster presentation of chapter member Astghik Kuzanyan during Nano – 2016, Tbilisi, Georgia

Chapter member Hripsime Mkrtchyan, Reading University, Reading, United Kingdom

Chapter member Astghik Kuzanyan with prof. N.V. Gurin. XV Intergovernmental Conference "Thermoelectrics and its Applications - 2016”, Saint Petersburg, Russian Federation
SPIE Student Chapter Leadership Workshop in Brussels

Thanks to the SPIE student chapter Officer Travel Grant, the president of our chapter - Astghik Chalyan, was able to attend the SPIE Photonics Europe 2016 (4-7 April, 2016), held in Brussels. On 3\textsuperscript{rd} April 2016 Astghik participated in the SPIE Student Chapter Leadership Workshop in Brussels, where active members from all over the world had opportunity to interact and learn from each other. Here they also had a chance to interact with popular SPIE visiting lecturer Jean-luc Doumont of Principae and SPIE Early Professional Coordinator Dirk Fabian facilitated an interactive all-day workshop for members of students from SPIE chapters and clubs who travelled from 15 countries to gather in Brussels.

She presented also the accomplishments and activities of our student chapter during the Photonics Europe Student Chapter Poster Session.
Our grants and awards

1. **Astghik Kuzanyan**: Best oral presentation in XV Intergovernmental Conference "Thermoelectrics and its Applications - 2016", Saint Petersburg, Russian Federation

2. **Astghik Kuzanyan**: Best oral presentation in XV Intergovernmental Conference "Thermoelectrics and its Applications - 2016", Saint Petersburg, Russian Federation

3. **Astghik Chalyan**: Annual Educational Award of the President of the Republic of Armenia in IT Sphere The Best PhD Student 1st Category, 19 October 2016, Yerevan, Armenia

4. **ICTP Travel Grant**
   - Vardan Avetisyan
   - Astghik Chalyan
   - Tatevik Hovhannisyan
   - Karapet Manukyan

5. **Viktor Hambardzumyan scholarship**
   - Narek Karapetyan
   - Karapet Manukyan

6. **2016 SPIE Travel Scholarship**
   - Astghik Kuzanyan
7. **Hripsime Mkrtchyan:** 1st prize National Winner start-up in ClimateLaunchPad Armenia 2016, Yerevan, Armenia

8. **Hripsime Mkrtchyan:** Silver medal in start-up competition ClimateLaunchPad EU 2016, Tallin, Estonia

9. **Hripsime Mkrtchyan:** Became Security NCP of Horison 2020

10. **Karen Apresyan and Khachik Sahakyan:** Shared 1st Place Student Poster Presentation Contest in OPTICS-2016 Yerevan-Ashtarak, Armenia

4th International Symposium “Optics and its Applications”

ARMENIA IN FOCUSPIE.

(OPTICS-2016)

Yerevan - Ashtarak, Armenia

July 25-28, 2016

http://rau.am/optics2016

Dedicated to the
100th Anniversary of the Optical Society
10th Anniversary of the Armenian SPIE Student Chapter
5th Anniversary of the Armenian Territorial Committee of ICO

Group photo during the Armenian SPIE Student Chapter’s Birthday Banquet

Sponsors:
4th International Symposium “OPTICS and its Applications” (OPTICS-2016) held in Yerevan-Ashtarak, Armenia, in July 25-28, 2016. The Symposium was dedicated to the 100th Anniversary of the Optical Society, 10th Anniversary of the Armenian SPIE Student Chapter and 5th Anniversary of the Armenian Territorial Committee of ICO.

Organizing Centers

OPTICS-2016 organized by

- SPIE YSU & NAS student chapter
- Armenian TC of ICO
- Russian-Armenian (Slavonic) University
- Greek-Armenian industrial company LT-PYRKAL
- Institute for Physical Research of National Academy of Sciences of Armenia
- Faculty of Physics of Yerevan State University
- University of Wroclaw

Co-organizing student chapters

- OSA YSU & NAS student chapter, Armenia
- OSA & SPIE Wroclaw Univ. of Technology student chapters, Poland
- OSA & SPIE BMSTU student chapters, Russia
- OSA, SPIE & IEEE ITMO University student chapters, Russia

The Symposium program included:

- Invited plenary talks and sectional presentations
- Student presentations (Special Prize from OSA for the best student oral presentation)
- Student chapter presentations
- Professional development lectures
- Lab tours
- Social events

LT-Pyrkal: Registration
The Greek-Armenian industrial company LT-Pyrkal
Welcome words by directors of OPTICS-2016:
   From right.
   **Gagik Buniatyan**, Chapter advisor, Director of LT-PYRKAL
   **Aram Popoyan**, National Academy of Sciences of Armenia Institute for Physical Research, Academician and Member of the NAS Presidium
   **Hayk Sarkisyan**, Professor of the Russian Armenian University, Yerevan State University, Armenia and Saint-Petersburg State Polytechnical University, Russia
   **David Blaschke**, Professor of the University of Wroclaw, Poland and JINR Dubna, Russia; MEPhI, Russia

**SPIE CEO Eugene Arthurs** (SPIE, USA)
SPIE’s Role in the Photonic Future

**Gerd Häusler** (Institute of Optics, Information and Photonics, University of Erlangen-Nuremberg Germany)
SPIE Visiting Lecturer

**Fedor Mitschke** (Institut für Physik, Universität Rostock, Germany)
OSA Traveling Lecturer

Yerevan State University

Institute for Physical Research of National Academy of Sciences of Armenia
Social program: Visiting Museum of Aram Khachaturian

Concert by the Khachaturian trio

Group photo after the concert
Celebrating 10th Anniversary of Armenian SPIE Student Chapter

Invited speakers in front of Yerevan State University
From left: Alexander Gusev, Eugene Arthurs, David Blaschke, Sergue Vinitsky

Excursion to the Oshakan Church and the tomb of Mesrop Mashtots. Mashtots is the inventor of Armenian alphabet.

During OPTICS-2016 there were 28 oral and 11 poster presentations held by students. There were five prizes.

Awarded Students:

Mateusz Szatkowski (Wroclaw University of Technology, Poland) - Special Prize from OSA for the best student oral presentation

Prizes from SPIE:

- II place for the oral presentation: Astghik Torosyan (JINR Dubna, Russia)
- III place for the oral presentation: Matīss Lācis (University of Latvia, Latvia)
- I place for the poster presentation was shared between Karen Apresyan (Yerevan State University, Armenia) and Khachik Sahakyan (Yerevan State University, Armenia)

Traditional group photo in Russian-Armenian (Slavonic) University

Closing ceremony
New Year party in Team Time

Best wishes for 2017!!!

Merry Christmas and Happy New Year!!!
Plans for chapter future activities

1. Our chapter will organize:

   ![Graph](image1.png)

   **4th International Advanced School on Frontiers in Optics & Photonics**
   **FOP-2017**
   Yerevan-Ashtarak, Armenia
   19-23 September 2017

2. Our chapter will participate as co-organizer in:

   ![Image](image2.png)

   **5th International Symposium “Optics & its Applications”**
   **OPTICS-2017**
   3 - 7 July 2017
   Wroclaw, Poland

3. Our Chapter will participate as co-organizer in "Physics and We" school for High-School students

4. We will continue the project “The Big world of Physics”.

5. Our Chapter will participate as co-organizer in “LIGHTTALK ARMENIA 2017”.

6. We will continue organizing seminars with leading scientists and PhD students.

7. We are going to organize experimental classes for young students, and during these classes we are planning to conduct theoretical and experimental lectures concerning topics, photonics and electronics.

8. We have planned several lab tours for students to the leading educational and industrial centers of Armenia.

9. We will organize our traditional open-air chapter meeting.
# Financial Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPIE Activity Grant</td>
<td>$1100</td>
</tr>
<tr>
<td>LT – PYRKAL</td>
<td>$250</td>
</tr>
<tr>
<td>RAU</td>
<td>$250</td>
</tr>
<tr>
<td>IPR</td>
<td>$50</td>
</tr>
<tr>
<td><strong>Beginning balance:</strong></td>
<td><strong>$1650</strong></td>
</tr>
</tbody>
</table>

**Snacks and beverages during lectures, seminars and meetings:** $150

**The Big world of Physics (transport, equipment, snacks):** $200

**Coffee breaks during 3rd International Advanced School on Frontiers in Optics & Photonics:** $200

**“Physics and We: lightning the optics” scientific camp:** $300

**Symposium Optics & its Applications: Printing materials + symposium folders, posters for the symposium and Awards for 2nd, 3rd oral presentation and best poster presentations:** $500

**Registration & Hosting of the chapter web page:** $100

**Christmas party:** $100

**Support for students for participation in conferences:** $100

**Ending balance:** $0

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Astghik Chalyan

*Chapter president up to December 31, 2016*

Gagik Buniatyan

*Chapter advisor, Director of LT-PYRKAL*