

Local Section & Student Chapter Activity Grant Final Report

Please submit this report within 30 days of completing your program. This report must be submitted in order for your section/chapter to be eligible to apply for future OSA Activity Grant Programs. If you have any photos or additional information to share about your program/event, please send them to chaptersandsections@osa.org. Be sure to reference "Supplement to Activity Grant Report" in your email message.

All fields are required.

Name of Local Section/Student Chapter: Universidad de Santiago de Chile

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Name of funded activity: Construction and Application of a Tunable Diode Laser

Amount of funding received: 1000 USD Activity Grant, and 500 USD Startup Fund

Date of activity: March 2008-March 2009

Location of activity: Santiago de Chile

Description of the activity: *Limit: 100 words*

This activity consisted in the construction and assembling of an experimental system based on a tunable diode laser and a vapor cell. The laser was completely assembled by our Chapter. The tasks were evenly distributed among the participants as selection and purchase of parts, mechanizing of optomechanics, base and case, assembling of protection electronics, peltier elements, thermistor, plugs, piezoelement, driving circuitry, installation and adjustment of the laser diode, grating and lens. We started the design of

the lithium cell. Some participants have actively work on the webpage and organizing meeting an social events to promote the chapter. We also participated in outreach activities in schools and to general public to promote optics. Participation in OSA Student Chapter Annual Meeting in Rochester.

The number of participants who attended the activity, beyond those directly involved:

17

What the participants gained from the activity and the overall response: *Limit: 100 words*

The participants learned hands on experiment the main features of an external cavity tunable diode laser. We learned also to solve technical problems involved in a laser construction. The participants gained experience in the team work and could distribute the tasks according to personal preferences as preparation of a webpage, selection and purchase of components, machining of parts, design of optomechanics, electronics assembling, design of case and base, and also organizing social activities of the group as for example a barbecue. The Chapter also participated actively and attended in the Minicourse given by the Travelling lecturer F. J. Duarte, and the reception given to other students. The overall response was very good.

How did your Section/Chapter benefit from this activity: *Limit: 100 words*

Our chapter has obtained many benefits from this activity. The first we learned a new field which involve many basic optics and physics subjects as the diffraction, interference, refraction and amplification. The Travelling Lecturer that visited us showed us how the subjects in our Physics Engineering Program have an application in real world physics. We learned how prisms can be used for the tuning of cw lasers or controlling ultrashort pulses. The activity promotes the laser spectroscopy and experimental atom physics which is poorly developed in our country. To our knowledge this is the first lab that works in this field here. The participation in the OSA Student Chapter Meeting was

also important to learn how other Chapters work and to motivate our students to apply to a PhD program in optics abroad.

Problems the group encountered in organizing the activity (if any): *Limit: 100 words*

The main problem is that students have a large amount of study and assignments in their different courses, limiting the meetings. Still the program succeeded because the tasks were distributed and many activities were performed separately by different members. In general the group is very good.

How was the activity publicized? *Limit: 100 words*

The activity was publicized in the University Newspaper Usach al Dia and in our main web page <http://fisica.usach.cl/~osa/> , in our blog <http://www.osausach.blogspot.com> and also in facebook <http://www.facebook.com/group.php?gid=29028788720>

How the activity could have been improved: *Limit: 100 words*

More meetings and social events to promote our activity. Improve our webpage and publicize our chapter in Optics Exhibitions as The Universe of Light and Expoluz were some of our Students participates normally.