



Dear Parents,

We have a field trip for our STEM and Future Physicists students to UCF CREOL where demonstrations will be held. Details are as below. Please return this permission slip to Mr. Memon by Tuesday, Feb 26th.

Student Name: _____ Grade: _____	
What:	Optics – The Cycle of Innovation Day Field Trip
When:	Thursday, February 28, 2013 1:00 PM-5:00 PM
Who:	STEM and Future Physicists of Florida Students
Where:	UCF CREOL BLDG 53 Orlando FL 32816-2700
Pocket Money	\$10 (Just in case)
Schedule	1:00am-1:45am : Departure from school-Arrival to CREOL 2:00am-4:00pm : Demonstrations, Lab tours 4:15pm-5:00pm : Departure from CREOL-Arrival to school
Transportation	OSS Transportation (Cost: \$15)
Contact Info	Mr. Memon: (904) 662 8251 e-mail: memon@orlandoscience.org Mr. Yalcin: (407) 376-0601 e-mail: yalcin@orlandoscience.org
Capacity	45 Students (first come, first serve bases.)

Optics Day 2013 Lab Tour Schedule and Demonstrations

Lab Tours

Be sure to have a look at the video feed of the CREOL cleanroom showing the ebeam writer (screen located in the lobby), and at the monitors near several laboratories on the ground floor.

TOUR A

- 201 **Fiber optics laboratory; fiber lasers and fiber device characterization**
Dr. Axel Schulzgen
<http://fol.creol.ucf.edu>
- A105 **Fiber Fabrication Facility**
Dr. Roberto Amezcua-Correa
<http://www.townes.ucf.edu/>
- 154 **Laser beam control by volume Bragg gratings**
Dr. Leonid Glebov
<http://ppl.creol.ucf.edu/>

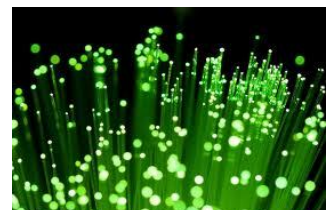
TOUR B

- 259 **Liquid Crystal Laboratory**
Dr. Shin Tson Wu
<http://lcd.creol.ucf.edu>
- 244A **Coherent Signal Processing using Optical Frequency Combs**
Dr. Peter Delfyett
<http://up.creol.ucf.edu>
- 246 **Nanophotonics Laboratory**
Dr. Pieter G. Kik
<http://kik.creol.ucf.edu>

Demonstrations List

The CREOL lobby will host interactive demonstrations of important optical principles.

Total Internal Reflection Fountain



Watch light pour out of this stunning optical fountain. Light is guided by total internal reflection through water similar to how light is guided through optical fibers to carry information to your home computer.

Birefringent Materials and Optical Properties of Mechanical Deformation

See how a material under pressure will change the light it transmits. The polarization of transmitted light is dependent on the size of the crystals in a transmissive material. Squeezing these crystals changes their size and the light you see.

Self Phase Conjugate Mirrors

See a randomly distorted image be reconstructed after reflecting from a mirror. The phase of light will change when sent through a material. If this change is different across an image, the image will be distorted. Mapping this phase change on a special mirror will reconstruct the reflection of the image.

Spatial Frequency Image Processing

Play with spatial filtering to make your own images. Light will naturally allow us to see its spectral characteristics after being focused. We can filter the vertical and horizontal frequencies of an image to reconstruct new or sharper images.

True 3D Holographic Nickel

Witness a true three dimensional hologram. Holography continues to amaze us well into the 21st century. Enjoy this reproduction of a nickel recoded 10 years ago and perfectly preserved as a hologram.

Nonlinear Free Space Optical Communication System

Listen to your iPod from across the room. Encode audio signals from your mp3 player on a laser and shoot them at your friend. The nonlinear effects from special crystals on frequency can be used to carry your music on a light beam.

Open Cavity Helium Neon Laser

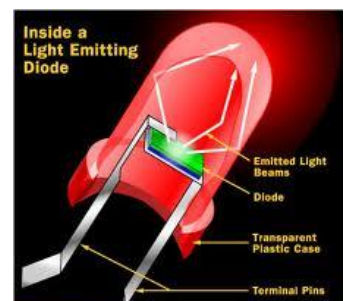
Look inside a working laser. This laser has been opened so that you can see build-up of energy prior to active lasing. See how the light inside the laser compares with the light exiting using a spectroscope.

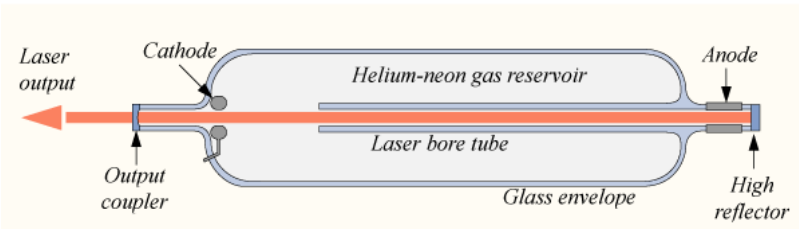
Spectral Comparison of Light Bulbs

What's the difference between all these light bulbs now-a-days? LEDs, fluorescents, filaments; we all use them every day but do we know what makes them so different. Use a spectroscope to examine each bulb and see how different "white" light can be.

Fun with Lasers

A variety of fun things can be done with a simple laser pointer. Light matches, pop balloons, cook popcorn, and power motors all with an off the shelf laser pointer.





ORLANDO SCIENCE SCHOOLS

Optics – The Cycle of Innovation Day Field Trip

Liability Release, Medical, and Consent Form

- **Liability Release:** Should my child sustain or incur any accident or illness while on the field trip to Optics – The Cycle of Innovation Day Field Trip, I hereby authorize the director/administrator, or his/her agent, to execute any and all documents, including any necessary releases, which might be required at any medical facility to perform any emergency care on my behalf. In the event that my child has an illness or accident during the program, and it requires a visit to the doctor or hospital, the existing family policies will solely represent the insurance coverage. I give permission for my child to participate in any and all activities on the field trip to Optics – The Cycle of Innovation Day, and I do not hold the Orlando Science Schools liable for my child.
- **Medical:** In the rare event of illness or accident, I hereby give my consent for the necessary emergency treatment of my son/daughter during the Optics – The Cycle of Innovation Day Field Trip. In doing this, I am giving permission for _____ to be on the trip. I understand every effort will be made to contact a parent or guardian.

Parent Name: _____ Parent Signature: _____ Date: __ / __ / 2013

STUDENT DATE OF BIRTH: _____

ADDRESS: _____

HOME PHONE: _____ WORK: _____ CELL: _____

PARENT SIGNATURE: _____ DATE: _____

➤ **In order to give the best service during the trip, the following information will help.**

1. Does your child have any type of illness that needs to be monitored? Yes No

Explain: _____

2. Does your child have food, drug, or insect allergies? Yes No

Explain: _____

3. Sign if you give permission to give Benadryl for insect bites. _____

4. Will your child need to take medication regularly during the trip? Yes No

If so, please give the name of medicine(s) and how it should be taken. Send a day supply.

1. _____

2. _____

These and any new medications must be sent in a baggie, in original bottles with student name and directions, the morning of the trip. They are to be given to the chaperone.