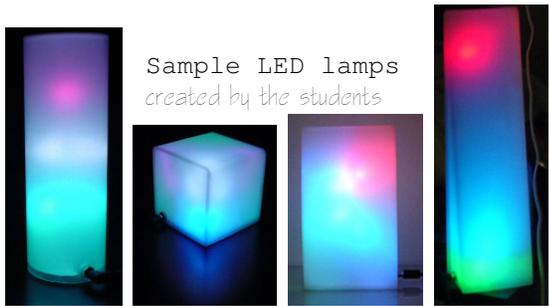


Project: Making LED lamps

— Do you like to create a beautiful LED lamps?

The recent progress of LED (Light Emitting Diode) has been remarkable. Those LEDs that surpass well over 200 lm (lumen (1m ≡ luminous flux per steradian*)) are presently sold and that span all the ranges of color spectrum, from red to violet. You must already notice the fact that traffic lights are being replaced with the LEDs one after another. The two special merits that the power to produce the same illumination required by LEDs is much less than that of fluorescent lamps and, of course, that of incandescent lamps, and that the half-life of LEDs is much longer than the conventional lamps promote the gradual replacement of those lights from cool white to warm white colors used in our daily lives — as long as the cost to produce LEDs is comparatively lowered.



Sample LED lamps
created by the students

*steradian is a unit for a solid angle in space. As in the 'rad' which is a unit to measure the angle in the plane, defined as $\theta \equiv l(\text{circumference})/r$, the steradian is a measure to express how wide the surface subtends from the origin, and defined as $\omega \equiv S(\text{spherical surface})/r^2$.

Even in consideration of one of the projects, the LED is easy to handle for it can be lit only to connect the battery and the resistors without the special knowledge of microcontrollers. Additionally, this time we do not use the Power LEDs so that their brightness is only suitable for the night lamps, but instead we can concentrate on the arrangement of colors of LEDs and the design of the lamp itself. ...We miss the availability of some parts such as mini-switches, special connectors, high-intensity LEDs, which are hardly obtainable in NYC area, though.

TOOLS: We freely provide tools necessary to cut, bend and solder the parts. Those tools alone cost ~\$1000 if you want to use in the project.

COST: As one of the policies of A.Semi that "we may purchase high-priced products if they have values and merits, but we usually purchase the less expensive ones if they have the same quality," we will do so in this project. The cost, however, depends upon the number of LEDs and the size of acrylic plate you want to use. Therefore, we urge that students submit their design on shapes and colors at first.

Accordingly, the design phase is the first thing to do. If you want to participate in the project, submit the form below sketching your own design with signature of one of your parents.

The following idea also constitutes one of the policies of A.Semi: we can understand completely only when we actually work out the problems ourselves — they may be those problems in mathematics, experiments in sciences you might encounter. When we showed the LED lamps to students in the past, there are many students who want to obtain them and ASKED us to make it for them. We believe that the process of creating some products with our hands-on will form the priceless experiences on our backgrounds. — In the present world, we only choose the ready-made products manufactured by someone. We at A.Semi weigh much of those experiences that we create things we want to realize for ourselves in this world.

If you are interested in this project of making LED lamps, we encourage you to participate in it and challenge to create what you want to brighten up your desk-top in the evening.

** Please note that this is the project NOT to make the lamp suitable for reading but for a decoration purpose at dusk at most.

Project: Making LED lamps

1. Design Phase: --- sketch your design; paint with color markers; ask for parts availability
2. Preparation Phase: --- collecting and preparing materials
3. Fabrication Phase: --- actually making LED lamps

..... cut along the dotted line
Participation Agreement Form I will participate in 'Make your own LED night lamp --- DIY Course.' Date: _____.

1. Design Phase: --- sketch your design; paint with color markers.

Name _____

Stipulate: How many LEDs do you want to use? _____

What colors of LED do you want to use? _____

What shape of the lamp do you want to make? _____

Signature of one of the Parents: _____

Address: _____ Zip _____ Phone: _____