

## **REPORT ON LED LIGHT ASSEMBLING AND TESTING UNIT- DEPARTMENT OF PHYSICS**

The energy resources of the world are under severe pressure to cope up with the growing need of energy. The technological changes and changes in the lifestyle have increased the demand for energy tremendously. With the resources become scarce and energy costs growing, it becomes imperative for everyone to save energy or to use the available energy judiciously. The need is to either find new sources of energy or to use the energy available carefully. Lighting forms a major chunk of load on our electrical power system. With the resources become scarce and energy costs growing, it becomes imperative for everyone to save energy or to use the available energy judiciously. Energy efficiency in lighting involves building architecture, selection of proper luminaries and light sources.

LED (Light Emitting Diodes) is the newest and most exciting technological advancement in the lighting industry, which appeared relatively recently and gained popularity in our market because of its advantages – high-quality illumination, long life and endurance – Light sources based on semiconductor technology has up to 20 times longer service life than fluorescent or incandescent lamps. This allows us to easily list the numerous advantages of LED lighting.

### **Objectives**

- To increase the use of solar devices and solve problems faced during their usage.
- To find out more efficient lights like LED, CFL lights and promote their use over normal fluorescent or incandescent lamps
- To develop the skill of assembling and testing of LED lights among the students.
- To enable the students to organize training classes on assembling and testing of LED light for the community
- To replace all the fluorescent/incandescent lights used in the campus by LED lights.

In order to familiarize the students with the practical aspects of lighting important technology, the Department of Physics, Sree Narayana College, Kollam conducted a seminar on “Energy Conservation” for the degree students on 12<sup>th</sup> March, 2021. The principal Dr. Sunilkumar R

inaugurated the programme at 11.00 am. The students were given a 05 days training program on “LED Light assembling and testing” every year Since 2020. The beginning classes were taken by Mr. Madhu Krishnan (NGGF Trainer), Asso. Prof. Sajeevkumar G (HOD Department of Physics), Dr. Dedhila Devadathan (Asst. Prof. Department of Physics) and Mrs. Asitha L.R (Asst. Prof. Department of Physics). The Department received financial assistance of Rs: 40,000/ from the college PTA. The Unit has all the required instruments for the assembling and testing of the LED light. Under the Physics Department, the members are assembling LED lights and organizing training classes.

As the world is heading towards severe energy crisis, there is an ever-increasing need for alternate energy resources and energy efficient devices. One particular field, which has witnessed tremendous breakthroughs, of late, in terms of energy efficiency, is solid state lighting (SSL) or Light emitting diodes (LED). LED bulbs are 80-90% more energy efficient than conventional incandescent bulbs and are several times more durable, with much lower greenhouse gas emission. In order to familiarize the students with the practical aspects of this important technology and provide valuable hands-on experience, the Department of Physics, Sree Narayana College, Kollam conducted a five-day skill-development Workshop on ‘LED bulb assembling’ for the degree students on 30<sup>th</sup> March, 2021. The principal Dr. Sunilkumar R inaugurated the programme at 9.00 am. The students were given a 05 days training program on “LED Light assembling and testing” every year Since 2020. The beginning classes were taken by Mr. Madhu Krishnan (NGGF Trainer), Asso. Prof. Sajeevkumar G (HOD Department of Physics), Dr. Dedhila Devadathan (Asst. Prof. Department of Physics) and Mrs. Asitha L.R (Asst. Prof. Department of Physics). The Department received financial assistance of Rs: 40,000/ from the college PTA. The Unit has all the required instruments for the assembling and testing of the LED light. Under the Physics Department, the members are assembling LED lights and organizing training classes.

The aim & scope of the workshop was to empower students with technical skills needed for industry as well as day-to-day life. It would also enhance the employability of students. This workshop was a major step to sensitize students towards green technologies and make students socially responsible. The learning outcome of this workshop was that the student was able to appreciate the need for energy efficient devices and design opto-electronic circuits. All the

participants were able to build LED based lighting-circuits in serial manner and thus learnt to design strategies to reduce electricity usage at home.

The department of physics started a “LED Light assembling and testing unit” on 30-03-2021 as a part of community extension activity. The unit was inaugurated by our college Principal Dr. R. Sunil Kumar. The students were given a 05 days training program on “LED Light assembling and testing” every year Since 2020. The beginning classes were taken by Mr. Madhu Krishnan (NGGF Trainer), Asso. Prof. Sajeevkumar G (HOD Department of Physics), Dr. Dedhila Devadathan (Asst. Prof. Department of Physics) and Mrs. Asitha L.R (Asst. Prof. Department of Physics). The Department received financial assistance of Rs: 40,000/ from the college PTA. The Unit has all the required instruments for the assembling and testing of the LED light. Under the Physics Department, the members are assembling LED lights and organizing training classes. LED bulbs/tubes to our college is supplied by our department. We also provided LED Tubes and Bulbs at free of cost for homes along the coastal region of Kollam. We also conducted a talk (by Dr. Sankar S, Asst. Prof. Department of Physics) to the people to create awareness about energy conservation and supply LED light among the community. LED tubelights assebled at the Department of Physics by UG and PG students were distributed to Vikas Bhavan, a school run by YWCA, Kollam for mentally challenged kids. On 18/04/2023 packet of 25 tubelights were handed over to the school administratives by our honorable Principal Dr Nisha J Tharayil accompanied by faculty members of Department of Physics and PTA secretary Adheesh U. Another set of 25 tubelights were handed over to Poor home working in Mundakkal on 18/04/2023 by Dr Nisha J Tharayil.







