

Name: Palash Phukan

Roll no.: ELP15002

Date of Joining: 17.01.2015

Supervisor: Prof. P. P. Sahu

Laboratory: Micro-fabrication Facilities Lab, ECE Dept.

Area of Research: MEMS, Nano-material

Title: Design and development of Graphene based UV photodetector for enhancement of its performance.

Summary:

Recently ultraviolet (UV) photodetectors have been focused due to its applications in secure space-to-space communications, flame sensing, pollution monitoring, treatment of cancer, water sterilization and early missile plume detection. Although the slight exposure to UV light facilitates the synthesis of Vitamin D, killing of germs and prevention of disease, but excessive exposure of UV radiation can cause various skin and eye diseases, and even accelerate the aging process. The protection measures are needed to raise awareness of the health hazards of UV radiation. The measurement of UV irradiation level is the first step to obtain such goals. For the design of the photodetector, the sensing material and the sensing mechanism is the main factor to improve the performance of the photodetector. In this direction, rGO is one of the promising materials contributing to high electrical conductivity and a large interface similar to graphene. Additionally, the rGO has its own absorption in the UV region inducing the production of electron-hole pairs.

