


## Cover letter

Sunday, August 25, 2019  
6:18 PM

 **ELECTRONICS ENGINEERING DEPARTMENT**  
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No: ECED/TEQIP-III / 3007/2018-19  
Date: 11/03/2019

**SUBMITTED TO DIRECTOR:**

**Subject:** - Application for the TEQIP-III Research Grant to PhD student

Respected sir,

With reference to above-mentioned subject the Ph.D. student **Dinesh R. Rotake** (Roll no. **D15EC003**) in electronics department, SVNIT, Surat required the financial support for the research work under the TEQIP-III project grant. The brief idea of the project is mentioned below.

The project work entitled "**Fabrication and characterization of Polysilicon-microcantilever based piezoresistive MEMS sensor for toxic Heavy Metal Ions (HMIs) detection in water**" is related to detection of HMIs in ground water. We proposed, Micro-Fabricated Cantilever Beam (MCB) array with ion-selective Self Assembled Monolayer (SAMs) to detect HMIs in ground water. HMIs particles are linked on SAM layer results into bending of the microcantilever proportional to weight of HMI. Most of the system required costly instruments for characterization, processing and also have large experimental setups which lead to non-portable device. So there is a need of highly sensitive, high speed and portable digital system. This type of sensor is called as surface stress based biosensors used for effectively solving the problem of underwater detection.

The approximate cost (Budget) of recurring and non-recurring items required for this research work is about **48,000 INR** for project duration of **1.5 year**. For your reference, the brief project proposal and estimated budget have been attached in this application.

Permission may please be granted to procure the list of items described in the attached enclosure from **TEQIP-III research grant** as per institute rules.

I would be very thankful to you if the research grant is provided for this research work.

**Enclosure:**  
1) Copy of brief project proposal  
2) Copy of estimated cost for recurring and non-recurring items

Ph.D. Student  
**Dinesh R. Rotake (D15EC003)**

Head, ECED  
SVNIT

Co-ordinator TEQIP-III,  
SVNIT  
+ As per norms  
+ follow inst.  
procedure norms.

Supervisor  
**Dr. A. D. Darji**  
Director, SVNIT

1

Subject same

First paragraph same with details of all team members..

The research project work entitled "....." is related to development of farming robot using ROS framework and Deep learning. We have identified some of the areas in agriculture where we can provide our potential solution through ground vehicle called "Farmbot". Major aim behind project is to develop farming rover which can autonomously traverse through field and remotely monitor the health/characteristics of crops (phenotyping) and grading and sorting of bad/good crops. Different sensors, portable industrial camera, and high power processor will be used to generate vast quantities of rich and varied data which will be used by system to predict the solution.

Third paragraph same

4th also same

5th same

Enclosure:

- 1)
- 2)

signs