## SVEC New LOGOSREE VIDYANIKETHAN ENGINEERING COLLEGE

**(AUTONOMOUS)**

##### SreeSainath Nagar, A.Rangampet - 517 102

Department of Electrical and Electronics Engineering

**PROJECT TITLE:** xxxxx

**ABSTRACT:** Zinc Oxide (ZnO) and Graphene are the most interesting materials for scientists and engineers for a long time. Zinc Oxide act as an n-type semiconductor material, has been widely investigated as a field-effect transistor (FET), optical device and solid-state gas sensor. ZnO based sensors are used for the detection of acetone vapor at various concentration levels. Graphene known as “the thinnest material in our universe”, with only one-atom thickness, has attracted huge attention since its discovery. Its unique features of high surface area, light weight, high electron mobility, and mechanical strength, can make graphene, a highly promising platform for gas detection. Zno-Graphene based sensor is fabricated to enhance the response of the Zno towards acetone. Graphene is direct band gap material, so it enhances the sensing properties of ZnO. Using spin coating method ZnoGraphene layers are deposited on the glass or silica substrate.

In this project, the Zno-Graphene based sensor is used to detect low concentration of acetone. Detection of such a low acetone concentration in exhaled breath could enable early diagnosis of diabetes, so this sensor is mainly used in medical applications. The most hazardous property of acetone is its extreme flammability, so this sensor used as acetone gas sensing alarm in pharmaceutical industries also.

**PROJECT BATCH: 1929**

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**CO-POs-PSOs Attained:**

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| **Course**  **Outcomes** | **Program Outcomes** | | | | | | | | | | | | **Program Specific Outcomes** | | | |
| **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** | **PSO4** |
| **CO1.** knowledge on the project topic. | **√** | **√** | **√** | **√** | **√** | **√** |  | **√** | **√** | **√** | **√** | **√** | **√** | **√** | **√** | **√** |
| **CO2.** analytical ability exercised in the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO3.** design skills applied on the project topic. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO4.** ability to investigate and solve complex engineering problems faced during the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO5.** ability to apply tools and techniques to complex engineering activities with an understanding of limitations in the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO6.** ability to provide solutions as per societal needs with consideration to health, safety, legal and cultural issues considered in the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO7.**understanding of the impact of the professional engineering solutions in environmental context and need for sustainable development experienced during the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO8.** ability to apply ethics and norms of the engineering practice as applied in the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO9.** ability to function effectively as an individual as experienced during the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO10.** ability to present views cogently and precisely on the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO11.** project management skills as applied in the project work. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CO12.** ability to engage in life-long leaning as experience during the project work |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Signature of the Guide**