

Proposal for announcing seat under the Institute Internship Program

(separate form to be filled for seat under Institute funding and project funding)

1. Name of faculty member proposing: Dr. Amit M Joshi
2. Department/Centre: Electronics & Communication Engineering
3. Topic on which work is proposed: iGLU: A Non-Invasive Blood Glucose Measurement device

4. Preferred period of internship (after May 20th): Between 21/05/2024 to 20/07/2024

5. Qualification of student (branch/semester of study): Computer science engineering/ 4th semester

6. Brief description of work (300-500 words):

Diabetes is a common health issue worldwide, requiring regular monitoring of blood glucose levels. While traditional methods involve painful finger-prick tests, the iGLU device offers a non-invasive solution. By using Near-Infrared (NIR) spectroscopy with specific wavelengths, iGLU allows for painless and continuous glucose monitoring (CGM), which is essential for managing diabetes effectively.

Continuous glucose monitoring is essential for regulating blood sugar levels during various activities and treatments. The iGLU device operates by detecting glucose molecules through absorption and reflectance at various wavelegth. This innovative approach promises real-time glucose monitoring without the discomfort of traditional methods, enhancing patient compliance and well-being.

The introduction of iGLU represents a significant advancement in diabetes care, addressing the need for non-invasive and continuous glucose monitoring solutions. By integrating state-of-the-art technology with user-friendly design, iGLU offers a promising avenue for improving diabetes management outcomes.

Furthermore, the development of a non-invasive prototype for data acquisition underscores the commitment to advancing glucose monitoring technology. This prototype represents a step forward in the creation of user-friendly devices that empower individuals with diabetes to manage their condition more effectively.

In conclusion, iGLU signifies a groundbreaking innovation in diabetes management, providing a painless and continuous glucose monitoring solution. With its user-centric design and technological advancements, iGLU holds great promise for enhancing the quality of life for individuals living with diabetes.

7. Expected learning of student (upto 100 words):

The student will learn how to create an easy-to-use interface for displaying glucose monitoring results. They'll understand how to show data clearly and make the interface user-friendly. They'll also learn how to connect hardware with software, like using OLED displays or mobile apps. Plus, they'll help make sure the device works well by testing and checking it.

8. Nature of work: (Experimental/simulation/mathematical modelling/data collection-analysis etc.): upto 50 words

The nature of work involves practical implementation and experimentation to develop an interface for displaying glucose monitoring results. This includes integrating hardware electronics with software applications, such as OLED displays or mobile apps, and conducting real-time data collection and analysis to ensure accuracy and user-friendliness.

9. If the seat is under project sponsored category: Yes

a) If yes, number of seats announced: 02

b) Name and ID no. of project from which stipend is chargeable

ID : R1000115830 Title : Non-Invasive Continuous Glucose Monitoring with Insulin Delivery System for Diabetes Care



Dr. Amit M Joshi

Electronics & Communication Dept.,

Note:

- a) Proposing faculty member needs to be available at the Institute during the period internship is offered
- b) No extra space or funding than the stipend will be provided by the institute for this purpose