AIMS^2 Research Project in Mechanical Engineering Department

Research Duration: Fall 2017 – Spring 2018

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Contact No: JD 3349, 8186777015, Tu TH 11.30am – 12.30pm

Title of Project: **Biomedical Research in Smart foot insert**

Goals and Objectives of the Project, Expectations and Outcomes

3D finite element modeling will be used to model human foot to investigate the biomechanical stress distribution. The foot model will be validated for both static and dynamics conditions to study the pressure distribution. Foot is the lowest part of the body and it's contact surface area to the ground holds and balances the weight of the complete body during activities such as walking, running, climbing etc. The study of the forces acting on the foot is important, as it will help us understand the different types of injuries.

The project will focus on:

1. Integration of microcontroller to measure bio signals
2. Signal processing and instrumentation
3. Biomedical foot modeling
4. Plantar pressure measurement for normal activities
5. Development of smart insert with flexi force sensors to measure the pressure distribution of the foot during various activities.

The outcomes of the research will be disseminated in peer reviewed conferences and journals. Students will attend research symposiums and present their scientific findings.