INSOLE PRESSURE SENSING SYSTEM

HeaRTNovation
DOST-PCHRD INNOVATION PORTFOLIO

THE PROBLEM

Diabetes mellitus (DM) is among the most common lifestyles-related diseases in the Philippines. Based on the 2014 prevalence data released by the International Diabetes Federation, it is estimated that the Philippines has around 3.2 million cases of Type 2 Diabetes, affecting approximately 5.9% of adults. DM can lead to severe complications. Specifically, foot ulcers among diabetic patients pose a significant risk of infection and may lead to amputation. This is a life-altering event, often rendering individuals unable to resume work and becoming a financial burden on both their families and society. In the Philippines, patient education emphasizing proper foot care is a key aspect of managing DM. While contact casting is the preferred treatment, its feasibility is limited in the Philippines due to the scarcity of personnel with the requisite skills to fabricate such casts.

THE SOLUTION

Through the funding support from PCHRD, the University of Santo Tomas (UST) developed a wireless, wearable, and self-monitoring insole pressure sensing device. Its purpose is to detect dynamic foot pressure parameters to prevent foot ulceration resulting from peripheral neuropathy. Data generated through the device are collected wirelessly and are made available to users through a mobile application. The pressure insole is also affordable and could be easily fitted inside shoes and sandals which diabetic patients could easily use.
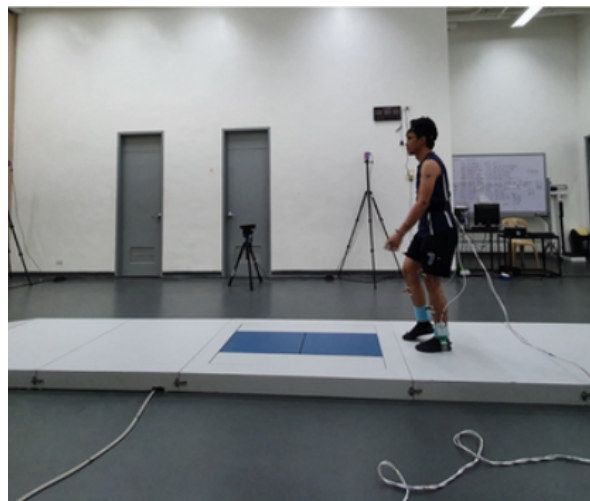
TECHNOLOGY GENERATOR

University of Santo Tomas
Project Leader: Dr. Consuelo B. Gonzalez-Suarez

TECHNOLOGY DEVELOPMENT

An **Insole Pressure Sensing System** using inertial measurement unit and in-shoe plantar pressure analysis was developed. The technology is currently at Technology Readiness Level (TRL) 4.

The technology owners are actively seeking funding opportunities for the continuous development of the Insole Pressure Sensing System. Interested parties may send letters of intent to contact details provided below.