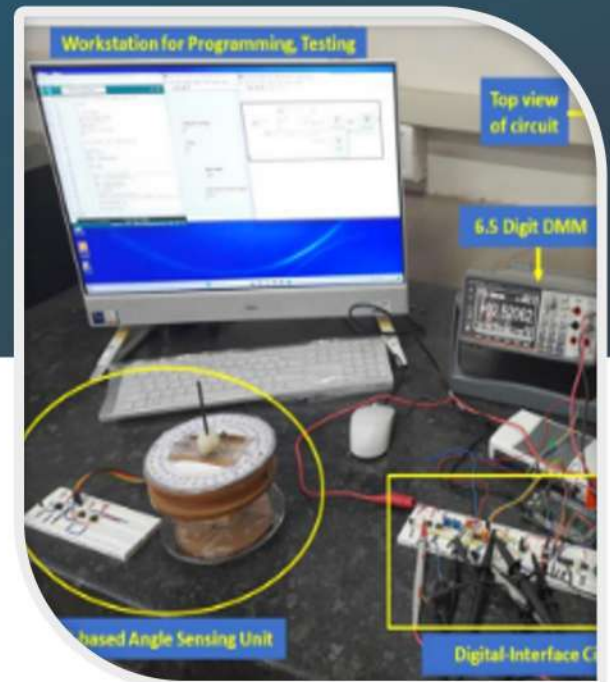


TECHNOLOGY DEVELOPMENT PROGRAM SMART MANUFACTURING

Shaft-Angle Estimator

Cost-effective Digital Instrumentation System for Angular Position Measurement of a Rotating Shaft using Tunneling Magneto-Resistance Angle Sensor



Issue Being Addressed

- ▶ limitations associated with the TMR-based measurement

Key Feature of the Technology/Product /App Which is Being Developed

- ▶ Accurate, linear, direct-digital indication of the shaft angle for a complete full-circle range
- ▶ Suitable for angle measurement up to 120 rpm shaft speed
- ▶ Measurement accuracy is least influenced by many non-ideal factors

Impact & Benefits

- ▶ The device is useful in several practical applications such as the estimation of the position of boom angle in agricultural vehicles, steering wheels, etc
- ▶ The proposed device can measure automobiles' accelerator pedal and throttle-valve position, ensuring proper fuel combustion
- ▶ Features aid in minimizing air pollution caused by incomplete fuel combustion

Team

- ▶ **Dr. Kishor Bhaskarrao Nandapurkar**
Assistant Professor
Indian Institute of Technology
(Indian School of Mines) Dhanbad,
Jharkhand

Targeted Customers & End Users

- ▶ Automotive industry
- ▶ Manufacturing and process industry
- ▶ Aerospace field
- ▶ Medical field
- ▶ Robotics

Commercialization Status

- ▶ Finish complete experimentation of different cases and file patent

Short Term Projects