Establishing a Sustainable Industry 4.0 Facility for Multi-Disciplinary Research & Training Towards Digital Transformation

Graphical Abstract/ Layout

Project Coordinator
Dr. B. Jaganatha Pandian
AssociateProfessor
School of Electrical Engineering
(SELECT)

PROJECT IMPLEMENTATION GROUP
Dr. N. RUBAN, Professor, Control and Automation, VIT, Vellore

Dr. MATHEW M. NOEL, Dean & Professor, School of Electrical Engineering, VIT, Vellore

Dr. PARTHA S. MALLICK Pro-Vice Chancellor & Professor

Dr. R. SARAVANA KUMAR, Professor, Control and Automation, VIT, Vellore

Dr. BAGYAVEERESWARAN V, Associate Professor, Control and Automation, VIT, Vellore

Dr. MANIMOZHI M, Professor, Control and Automation, VIT, Vellore

Dr. VINODH KUMAR E, Professor, Control and Automation, VIT, Vellore

Dr. GEETHA M, Professor, Control and Automation, VIT, Vellore

Dr. SONAM SHRIVASTAVA, Assistant Professor, Control and Automation, VIT, Vellore
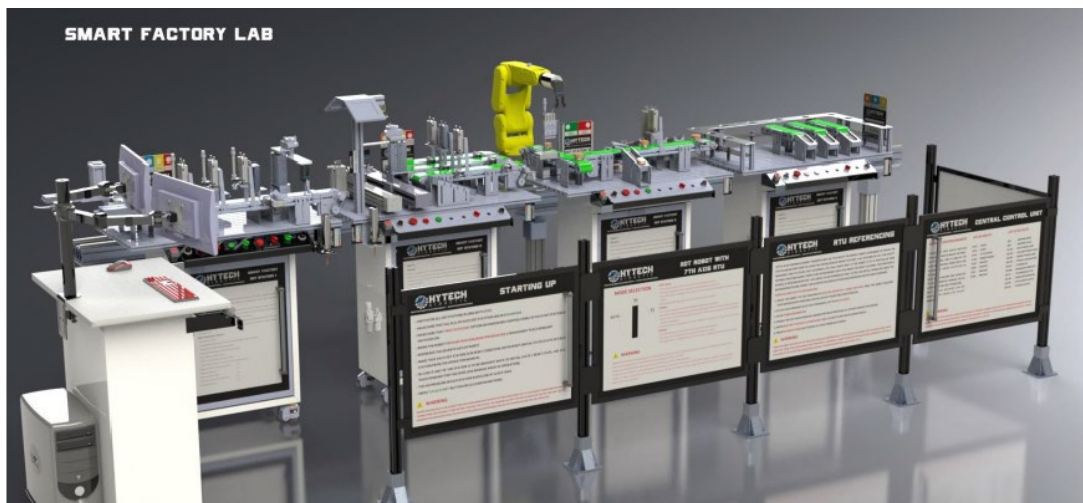***

Project Description:

Smart Factory is IIOT based flexible manufacturing system. Entire system consists of 4 modular stations each equipped with PLC and SCADA. Industrial 6 axes robot with 7th axis as robot transfer unit is provided in the system.

The bearing assembly is carried out with the help of pneumatic gauging, vision inspection as well as barcode reading. Production optimization system along with automatic storage and retrieval system is also provided in the system.

The control system is equipped with industrial SCADA, HMI, digital twin with dynamic communication, Barcode scanning and IIOT platform.

Project Objective:

Enhancing Laboratory Infrastructure: Developing advanced facilities for smart manufacturing using robots, IIoT and artificial intelligence for M.Tech. Control and Automation and other PG programs.

Training: Preparing the postgraduate students with technical skills imparted on the proposed topic. UG, PG and research scholars will be trained in robotics, manufacturing technologies, and artificial intelligence.

Adopting Make in India: Technologies would be developed for smart manufacturing of products. This proposal includes all the key domains of engineering disciplines to work on the motto "Self-Reliant" India.

Societal solutions: Solutions for energy and environmental related societal problems will be proposed as part of PhD, and PG research projects.

Industry consultancy projects: Industrial problems related to industrial automation would be solved on a consultancy basis.