

UGC Major Research Project

Title of the project : Exploration and Development of Environmental Regulation Management System in Indian Manufacturing Industries

Date of Sanction & Ref No. : F.No: 38 – 249 / 2009 (SR), dated 24 Dec 2009

Sanctioned Amount : Rs. 9, 54,526/- ; **Duration: 2010-13**

Principal Investigators : Dr. SP. Nachiappan /Dr. N. Jawahar

Department : Mechanical Engineering

Project Summary

Objective:

This objective of this research is to evolve policy guidelines towards setting the Environmental Regulation Management System (ERMS) for Indian Manufacturing Industries in order to boost the sustainable performance of them.

Methodology:

The research has been carried out under three phases as:

- Collection of the data relevant with respect to process, strategies and performance of industries;
- Identification of the key indicators of sustainability and development of Composite Performance Index (CPI) to assess the sustainable performances of the industries incorporating economic, social and socio-economic aspects
- Analysis of Environmental Practices in Indian manufacturing industries to evolve best sustainable practices to each sector of manufacturing industry.

The following infrastructures have been created:

- General Algebraic Modeling System (GAMS) software installed at PSS Lab in Mechanical Engineering Department
- MINITAB Statistical software installed at 10 seats at Mech Dept, IE Lab and at Mathematics Laboratory.
- Purchased- Project related books through Main Library – Rs. Around 1,00,000/-

Major outcomes:

Infrastructure: Facility that are created are useful for Projects of ME IE students and MSc Applied Mathematics

Publications:

- G Satish Pandian, **N Jawahar and SP Nachiappan**, Questionnaire for the development of Environmental Regulation Management System for Indian Manufacturing Industries, Elixir Mgmt. Arts 56 (2013) pp.13330-13343
- G Satish Pandian, **N Jawahar and SP.Nachiappan**, Composite Performance Index for Sustainability, Journal of Environmental Science, Toxicology and Food Technology ISSN: 2319-2399. Vol. 3, (1) (Jan. - Feb. 2013), PP 91-102
- G. Satish Pandian · **N. Jawahar** , Angappa Gunasekaran **Nachiappan Subramanian** Influence of eco-innovation on Indian manufacturing sector sustainable performance, Int. Jrl. of Sustainable Development & World Ecology, 21 (3), 2014, pp. 198-209
- **N. Jawahar** , G. SatishPandian · Angappa Gunasekaran **Nachiappan Subramanian**, “An Optimization Model for Sustainability Program” Ann Oper Res , 2015, Vol 250, Issue 2, pp 389-425

PhD Produced: G Satish Pandian has obtained PhD in Mechanical Engineering 2015.