

Anveshana – 2017-18

Theme for NCR-Delhi

INNOVATION FOR SUSTAINABILITY & DEVELOPMENT

A universally accepted definition of sustainability remains elusive because, it needs to be not only factual and scientific, but a clear statement of a specific “destination” needs to be employed. The simple definition of "sustainability is improving the quality of human life while living within the carrying capacity of supporting eco-systems".

Though this is broad, it conveys the idea of sustainability having quantifiable limits (<http://en.wikipedia.org/wiki/Sustainability>). Under this theme, Anveshana aims to provide a platform for all budding innovators to conceptualize working models and proof of concepts encompassing the following focus areas:

Focus Areas

1. WATER:

The crisis for potable water is already felt in present times. Technology to resolve the issues under the following broad areas are invited for the competition:

- a. Technology for saving existing water resources
- b. Sustainable drinking water supply
- c. Decentralised Water Management
- d. Agricultural Crisis Management
- e. Water Stress Management
- f. Containing Water Pollution & Contamination

2. AIR:

Air is considered as free resource without realizing that it has a direct impact on immediate health of the Nation. Indians are projected to have 30% weaker lungs than Europeans (ToI, Sept 2, 2013). Issues are significant and are extremely relevant as we share the air without any boundaries of any kind with one and all. The event intends to focus on indoor/domestic air quality and encourage students to develop projects on innovative ideas to improve the same:

- a. Combating the Lung related ailments like Cancer, TB, Asthma
- b. Indoor air pollution - emissions due to computers and other devices
- c. Chemical pollutants like mosquito repellents and indoor air quality
- d. Assessment of air quality
- e. minimizing the hazards of greenhouse gases

3. FOOD:

Importance of food cannot be emphasised. Present theme will focus on food security. Truly sustainable food system is one which nurtures the people, animals, community and the environment. Listed below are some guiding problem statements on this theme:

- a. Cost-effective Processing & Distribution
- b. Food safety
- c. Malnutrition
- d. Transportation from production to distribution site
- e. Efficient storage of surplus
- f. Food as medicine
- g. Balanced Diet & Nutrition
- h. Innovation for avoiding / detecting Food borne illness
- i. Technology for treating Allergies of Food

4. ENERGY:

Primary source of energy in present times is fossil fuel in form of coal, petroleum, natural gas etc. The world has already recognized the fact that about 60% of these fuels which have been created over past millions years has been consumed over last two centuries and the balance reserves will also deplete with the growing consumption. Recognizing this soon-to-happen crisis, theme of Energy has been included. Innovative projects of themes that list out efficient and alternate use of present reserved or proposing alternate forms of energy for sustainable growth are being encouraged. Indicative topics are listed below.

- a. Increased efficiency in present system of Production & Storage
- b. Innovation in machine/engine design for higher output
- c. Renewable sources of energy: Innovation in design for better use of present alternate energies like solar cells, hydro power, wind power and biofuels. Innovation is expected for better or new use of existing technology in line with the broad theme of sustainability.
- d. Unconventional sources of energy
- e. Energy Conservation & Audit

5. WASTE MANAGEMENT:

- a. System for Reuse at Domestic scale
- b. Integrated Recycle System i.e. Efficiency in Recycling with addressing the areas where garbage recycles system breaks down and results in problems.
- c. Efficient segregation of waste (Waste could include municipal waste i.e. Household waste, commercial waste, demolition waste etc.)
- d. Sustainable technology to address the issue of mishandling of Bio-medical waste.
- e. Innovative ways to use pyrolysis of oil generation from plastic waste as sustainable solution to “plastic problem”