

## Green Technology

Green technology (GT) is a broad term and a field of new innovative ways to make environmentally friendly changes in daily life. It is created and used in a way that conserves natural resources and the environment. It is meant as an alternative source of technology that reduces fossil fuels and demonstrates less damage to the human, animal, and plant health, as well as damage to the world. The use of green technology is supposed to reduce the amount of waste and pollution that are created during production and consumption. It is also referred to as environmental technology and clean technology.

## Sustainable Development

Based on this context, "sustainability" is considered as a path forward that allows humanity to meet current environmental and human health, economic, and societal needs without compromising the progress and success of future generations. Some of the definitions of sustainable development illustrating the variety of foci are:

- Development that meets the needs of the present without compromising the ability of future generations? To meet their own needs "The World Commission on Environment and Development, Our Common Future.
- "Improves the quality of human life while living within the carrying capacity of supporting ecosystems," International Union for the Conservation of Nature and Natural Resources (IUCN), World Conservation Union, United Nations Environment Programme (UNEP), and worldwide fund for Nature (WWF), Caring for the Earth.

## Need of Green Technology

The need for green technology arises because natural resources are declining and pollution has increased due to the abundant use of non-renewable sources. Green products and creativities are by definition, environmentally friendly, energy efficiency, recycling, health and safety concerns, renewable resources, and more all go into the making of a green product or technology.

## Green Chemistry

Green chemistry seeks to reduce pollution at source, whereas environmental chemistry focuses on the study of pollutant chemicals and their effect on nature. The fundamental idea of green chemistry is that, the designer of a chemical is responsible for considering what will happen to the world after the chemical agent is put in place.

The principles of green chemistry and some examples of their applications to basic and applied research are illustrated below:

1. **Prevention of Waste:** It is better to prevent waste than to treat or clean up waste after it is formed. The ability of chemists to redesign chemical transformations to minimize the generation of hazardous waste is an important first step in pollution prevention.

2. **Maximize Atom Economy:** Atom Economy is a concept that evaluates the efficiency of a chemical transformation, and is calculated as a ratio of the total mass of atoms in the desired product to the total mass of atoms in the reactants.
3. **Less Hazardous Chemical Syntheses**
4. **Designing Safer Chemicals**

### **Zero waste technology**

Zero waste is a visionary concept for confronting waste problems in our society. The idea is being developed and implemented in various sectors including waste management and treatment, mining, manufacturing, and urban development. The zero-waste concept has been embraced by policymakers because it stimulates sustainable production and consumption, optimum recycling and resource recovery.

Professionals in waste management systems, however, perceive and apply it in different ways. The scope of the zero waste studies is diverse, and a zero-waste concept is constantly developing through various programmes, plans, policies and strategies.