Chemistry to Green Chemistry : A Way Towards Sustainable Development

Ms. Neha Tripath

Asst. Prof., Dept. of Chemist. Km. Mayawati Govt. Girls P.G. Colleg Badalpur (Gautam Buddh Nagan

"Sustainability" is a concept that is used to distinguish methods and processes that can ensure the long-term producting of the environment, so that even subsequent generations of humans can live on this planet. Sustainability here environmental, economic, and social dimensions.

Over the years, the industry and wider public have become aware of the damaging effect of the past practices and the need to protect the environment. Now the scientists and technologists have realized the threat to the sustainability of the environment. And in this very sequence, Green chemistry or sustainable chemistry had to be invented in early 1992. Green chemistry is defined as "the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances". And Green engineering is considered to be "the development and commercialization of industrial processes that are economically feasible and reduce the risk to human health and the environment". In the proposed work we are going to deal with the sequential development of Green chemistry and their graph of achievements.

A traditional concept in process chemistry has been the optimization of the time-space yield. In the last 250 years Chemistry has improved our quality of life, and made thousands of useful products and materials possible. This has been proved as a boon to the humankind. But this achievement has come at a price. And people today perceive chemistry as harmful to the environment. Issues like climate change, pollution, severe effects of global warming, increasing scarcity of water, energy crisis etc. make the headlines and have become increasingly important in today's life. Many chemicals have got entry in the food chains and are circulating round the globe. Pesticide residues are found in the tropics and the arctic, flame retardants from electronics are now commonly found in the aquatic organisms. Thus in the modern perspective, this limited viewpoint had to be elaborated. As for example, toxic and harmful wastes can destroy natural resources and especially the means of livelihood for future generations.

In addition, many processes, for the production of chemicals, are based on petroleum, which is not a renewable resource. Thus the question arises is - what alternatives can we develop so as to maintain the coordination between the progress and optimum exploitation of resources along with contributing least to the toxicity of the environment?

La contrata a

In the last decade's 600-700 million tonnes of chemical materials are produced every year (excluding fossil fuel, fertilizer and medicines) from the chemical industries. As well as more than 120000 chemicals are in circulation for various applications.

Despite the strict laws and regulations in developed countries various environmental problems and adverse effects have originated.

When the chemical community began exploring waste minimization, in the late 1980s and early 1990s there was a considerable amount of commitment for the minimization of wastes through designing new chemical processes and products. This idea of waste reduction eventually evolved into pollution prevention practices. In the mid-1990s a series of textbooks and course modules on pollution prevention began appearing. In year 2000 it was realized that the current and future education focus should progress from greening the chemical engineering curriculum to incorporating some green concepts into other engineering disciplines. For many years it remained