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GREEN CHEMISTRY AND SUSTAINABLE CHEMICAL PROCESSES

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Abstract
Our living standard rose after the industrial revolution. It developed many products that facilitate life, to extend human life. Industrial revolution has brought increased production with it. Increased production but also as a source (raw material) made to be consumed rapidly. However, no one; neither consumers nor scientists, nor some toxic industrial companies could think that thousands tons of waste contaminate air, water and soil. Only the success of the work done was measured in the linear structure of the economy without looking at the heritages it has left. Soon, serious environmental problems and industry associations, waste affecting the ecosystem could not ignore more.

Keywords: Chemical pollution, green chemistry, livable environment, sustainability.

Introduction

Chemistry has become an important contributorof everyday life during last the century. Among the numerous use of chemistry in everyday life, greatest input for public life comes from the pharmaceuticals industry with developments of painkillers, antibiotics, heart drugs and, more newly, Viagra. It is almost impossible to see any fact of the modern life that was not affected from the products of chemical and related industries Table 1.

Table 1. Application of chemistry in different industrial fields

Application Fields	Examples
Carrying Trade	Manufacture of gas and diesel from petroleum, combustible additives for greater yield anddecreased emissions, catalytic converters, plastics to decrease vehicle weight and improveenergy yield
Dress	Man-made fibers such as rayon and nylon, paints, watertight and other surface finishingchemicals
Sports	Developed composite materials for tennis and squash rackets, all-weather surfaces
Security	Lightweight polycarbonate cycle hard hats, flame-retardant furnishing
Nutrition	Coolers, packaging, containers and wraps, nutrition processing aids, preserver
Medicinal	Synthetic joints, “blood bags”, anesthetics, disinfectants, anti-cancer medicines, vaccinations,dental cores, contact lenses, contraceptives
Office	Photocopying toner, inks, printed circuit boards, liquid crystal screen
House	Material and paints for rugs, plastics for TVs and mobile telephones, CDs, video and soundbands, dyes, cleaners
Agriculture	Fertilizers, pesticides

MATERIALS AND METHODS

Chemical industry, with many chemical manufacturing processes and products, nutrition, aswell as the basic requirements such areas as housing, health, computing, is an industry that provides the input to the fields requiring high technology such as telecommunications and biotechnology. Owing to the nature of the chemical industry, as well as to areas wheretheir own space related, must be continuously improvedthe technology required for the production of products,and this product. In short, chemical production hasto be based on continuous research and development (R&D).

RESULTS AND DISCUSSION

World chemical industry export in 2013 has mounted to about 5.1 trillion US dollars, which is 28.9% of total world export (18 billion US dollars). In the same year, chemical industry import stood at US $

5.5 trillion, which was 29.3% of the world's total and the world's total import was 18.7 billion US dollars (ITC Trademap, 2014).

The chemical industry accounts for 7% of global income and 9% of global commerce, adding up toUS$1.5 trillion in sales in 1998, with 80% of the world's output produced by 16 countries. Production isprojected to rise 85% by 2020 compared to the 1995 levels [2].

In recent years, the chemical industry of the "image" precisely where the problem is. Although the steps taken forward in reducing pollution, public relations departments to work in strict entry if people think primarily smoking chimneys, polluted rivers and sounds of fire or explosion hazard. Unfortunately chemical plant toxic (poisonous) and they do not get rid of that image as long as they continue to use mainly flammable organic solvents. In addition, the increase in the world population and life the rise inthe standard (at least in one part of the world) thereare no barriers to sustainable chemical production methods. Production to meet increasing demand is rising day by day with the increasing levels of waste

Although chemistry is helping enormously to the quality of life, negative effect of some chemicals are not exactly know to the human health and environment,even though they have been in use for several decades.There is about $30 billion spending each year on research and development in environmental (R&D). As shown by Doble and Kruthiventi in Figure1 process for an ideal manufacturing has to have some criterion.

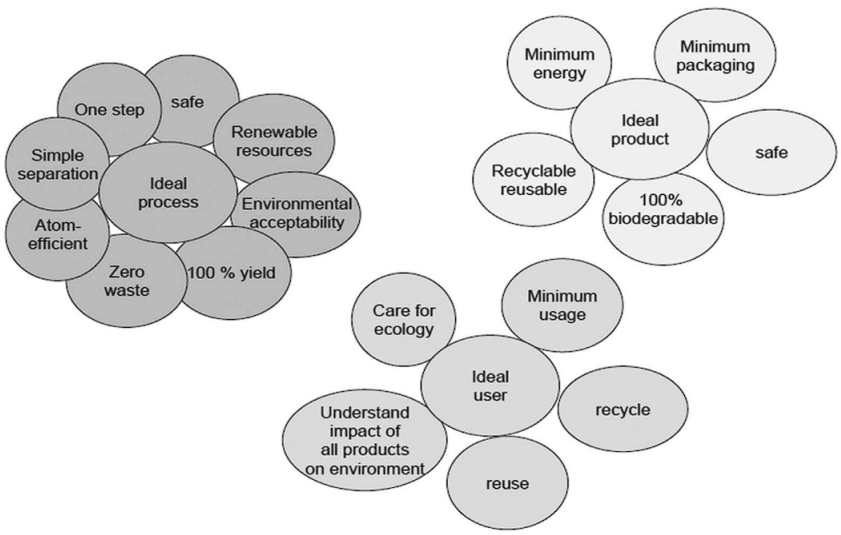

Figure 1. Criteria for ideal product, process of manufacture and user

CONCLUSION

In order to establish a sustainable future for the green chemistry, it would be better to inteprote its principles and practices in every chemicals sciences degree courses. By this way future generations will be informed about it.

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