

The book cover features a collage of four images: a city skyline at sunset, a cracked dry lake bed, a beach covered in plastic waste, and a pile of electronic waste. A large white diagonal shape is overlaid on the right side, containing the title and editor information.

Environmental Challenges & Issues in Present Scenario

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Chemical Toxicology and its Influence on Environment

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Abstract

Chemical Toxicology is the study of poisonous and harmful substances and their effects on living organisms. It covers a wide range of study overlapping with biology, chemistry, pharmacology, and medicine. Now a day, in discriminate use of chemicals, adulteration of foods and the ever increasing large heaps of waste materials in our environment reach such an alarming stage, that the detailed study of different toxic materials is very necessary and highly recommended. Toxicity testing allows us to identify the toxicity of chemicals we use and gives information about the potency of their effects. As well as being true for industrial chemicals this is also true of pharmaceuticals and the natural products formed by plants, bacteria and fungi. Knowing whether a chemical can cause cancer, allergic reactions or abnormalities in unborn children is one of the most vital parts of this field and the process of discovering this information is known as assessment of hazard. Adverse effects of a toxic substance depend on two main factors: (i) routes of exposure (oral, inhalation, or dermal) and (ii) dose (duration and concentration of exposure). A brief discussion of various toxic substances, both natural and artificial, and their toxic impacts on different spheres of environment including human being is vividly depicted in this chapter by excerpting the recent research reports published in reputed journals.

Keywords: Chemistry toxicology; hazardous materials; toxin; living organism.

Introduction:

Toxicology is a discipline, overlapping with biology, chemistry, pharmacology, and medicine that involve the study of the adverse effects of chemical substances on living organisms¹ and the practice of diagnosing and treating exposures to toxins and toxicants. The relationship between dose and its effects on the exposed organism is of high significance in toxicology. Factors that influence chemical toxicity includes the dosage (and whether it is acute or chronic), route of exposure, species, age, sex, and environment².