

Water Pollution and Waste Water Refinery Techniques

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Abstract

From past to present, establishment of almost all civilizations close to the waterside shows the meaning and importance of water for life clearly. On the other hand, besides the values we have gained with the help of technology, unfortunately waters comes first among the things we have lost. Therefore, finding a way to regain that value we have lost is our duty. While doing this we are going to cause environmental pollution, accordingly instead of using techniques that are going to cause new wounds, it would be better using more natural and cost efficient techniques that will help us accomplish better goals.

Keywords: *Water pollution, Waste water, Waste water refinery techniques, Biological systems used in waste water treatments.*

1. Introduction

Water which is one of the most important resources of living on earth has been always essential for humans as it is for other creatures. So that most of the civilizations have been established near coastal areas, river valleys and plateaus.

The world population that has reached to 6,3 billions nowadays and the addition of millions of new individuals to this number, enhances the importance of water which is already limited and we lose a certain amount of it before it reaches to our houses because of several reasons. Considering the annual water amount per individual in Turkey which is surround by seas on three sides and has many inland water resources, our country is classified in the countries suffering from water shortage. When the increasing population and strategical position are taken into consideration, it is obligatory using the water sources in the most reasonable methods like other resouces [1].

In recent years, in order to fight with environmental pollution and increase the quality of life for communities, the perspective of using biological systems nature instead of expensive techniques and processes has started to pervade. Therefore, new areas of usage are being searched in several plant and animal systems that are defined as hazardous. In this case, solutions called natural refinement systems that are based on the refining ability of several plants have been found to protect the human health and improve the environment [2].

2. Water

2.1. Definition and Qualifications of Water

Water is a tasteless and odorless substance which is essential for all renowned living things. Water has a vital importance for living. All physical events required for life can occur with the qualifications of water, thus biologists call water as the fluid of life. Water is colorless when looked on a small amount. It is observed in high amounts on earth [3].

The chemical formula of water is H₂O. This means that one water molecule is formed of two hydrogen and one oxygen atoms. On two sides of oxygen atom there are two hydrogen atoms bond with 104,5° angle. Ionically, it can be defined as a hydrogen ion (H⁺) bond to a hydroxide ion (OH⁻), that is HOH. In standard temperature and pressure, between the steam phase and the liquid phase of water there is a dynamic balance. One side of water molecule has negative charge while the other side has positive. Therefore, positively charged hydrogens form a weak bond with the negatively charged atoms of the molecule. With the help of this special interaction called hydrogen bond water molecules attach to tehmselves and to other materials around [3].

Water is an excellent solvent for many soluble materials. These materials (known also as hydrophilic materials) resolves in water by stirring (ex; salt). The materials which do not mix with water such as oil are known as hydrolic materials. The

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