



Research Lectures
Thursday 14/11/2019, 14:00-15:00, Room K2.A1

Organic Material Behavior in the Water

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Abstract

The transformation of the organic compounds themselves into the water molecule is very important. As a result, new substances (even at higher levels of toxicity) are encountered in the aquatic environment, creating additional complexity in the process of purifying the aquatic environment from contamination with organic compounds.

This lecture presents the most important chemical processes occurring in the aquatic environment that took place during the passage of the obtained organic compounds into the water sphere.

1. Hydration
 - 1.1. Hydration of alkenes,
 - 1.2. Hydration of alkynes,
 - 1.3. Hydration of ethylene oxide.
2. Alkyl halide hydrolysis
 - 2.1. Alkyl halides interaction with a large number of organic and inorganic nucleophilic reagents,
 - 2.2. The hydrolysis of chloroform widely used in practice,
 - 2.3. Hydrolysis of ethylene chloride,
 - 2.4. Hydrolysis of heminal dihalogenated derivatives,
 - 2.5. The high-molecular-weight fatty acids.
3. Dehydration (Elimination) reactions
 - 3.1 Dehydration of alcohols in an acidic medium.
 - 3.2 Intermolecular dehydration.
 - 3.3 Hydrolysis and dehydration of nitriles and amides , as example for dies treatment process in waste water,
 - 3.4. The process mechanism.
4. Pesticide degradation / hydrolysis / aquatic environment

The solubility of pesticides in water is extremely low, except for phosphorus inorganic species.

5. Hydrolysis of biopolymers in the aqueous medium

In the aquatic environment there is hydrolysis of peptides and proteins, Amylase catalyzes the hydrolysis of polyacids.