

Internal Webinar

Development of Hydrogen Peroxide generating Graphene based coating for waste water treatment

Anugraha A

TIFR, Hyderabad

Waste water treatment is a process by which waste water is converted to environmentally acceptable water for several applications by reducing the number of contaminants present in it. Recently many researches related to water treatment are focused on Graphene and nanotechnology for elimination of contaminants. Hydrogen Peroxide is another one of the most versatile, dependable and environmentally compatible oxidizing agents. The strong oxidizing power of Hydrogen Peroxide makes it suitable for the removal of a variety of contaminants. In biologically active wastewater, Hydrogen Peroxide will readily decompose to water and Oxygen. The release of Oxygen will assist in BOD reduction by allowing the aerobic bacteria to function more efficiently. This mechanism is especially important in cases where an Oxygen deficiency exist. Hydrogen Peroxide is usually produced through a very expensive industrial process, therefore, production of it through an easy and cheap method has become very significant.

In this work, biofilm and Hydrogen Peroxide were used for water treatment, were, H_2O_2 was generated using Graphene-based coatings through Oxygen Reduction Reaction. The Hydrogen Peroxide generation was confirmed and quantized.

References:

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Monday, Aug 3rd 2020

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