



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

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Freshman Engineering Department

Seminar

A seminar was delivered by Dr. T.V.Nagalakshmi, Sr.Asst.Professor on 22nd March 2019. She discussed her published research work on **“Preparation and characterization of activated carbon from Jackfruit waste for the removal of basic dyes from textile effluents”**. She demonstrated the preparation methods and the characterization of the activated carbon.

Agricultural waste materials can be converted into useful activated carbon adsorbents. If not managed properly, agricultural wastes become an environmental problem and a hazard for human and animal health. The aim of this study is to prepare activated carbon from jackfruit waste with good surface area and to introduce different surface functional groups onto the prepared carbon. FTIR, XPS, TPD, TGA analyses figured out that the prepared JC_{HNO_3} was characterized with good surface chemistry. In batch mode adsorption studies the selected dyes were successfully removed by JC_{HNO_3} . The poor recycling and regeneration efficiency of carbons indicated that dyes were bonded to carbon with strong forces equal to chemical bond.

Though the utilization of activated carbon to remove dyes from textile effluents was somewhat successful, it comes with the price tag of sludge production. The particle size 45μ of ACs may account filtration problems in large scale applications. Before the application in large scale, a sample of textile effluent must be tested to determine the required dose and time as the application of ACs was a function which depends on these two factors besides pH of solution. Despite of all these limitations, as the prepared carbons were from bio-waste material, they would become good substitute other than commercial activated carbons which are generally costly.

The author suggests an idea that the activated carbon sludge produced during the adsorption process can be mixed in preparation of fly ash bricks or in tar to make roads. However, this mixing might affect the mechanical strength of prepared materials.

At the end, as said by John F. Kennedy, “*Scientists alone can establish the objectives of their research, but society, in extending support to science, must take account of its own needs.*”





