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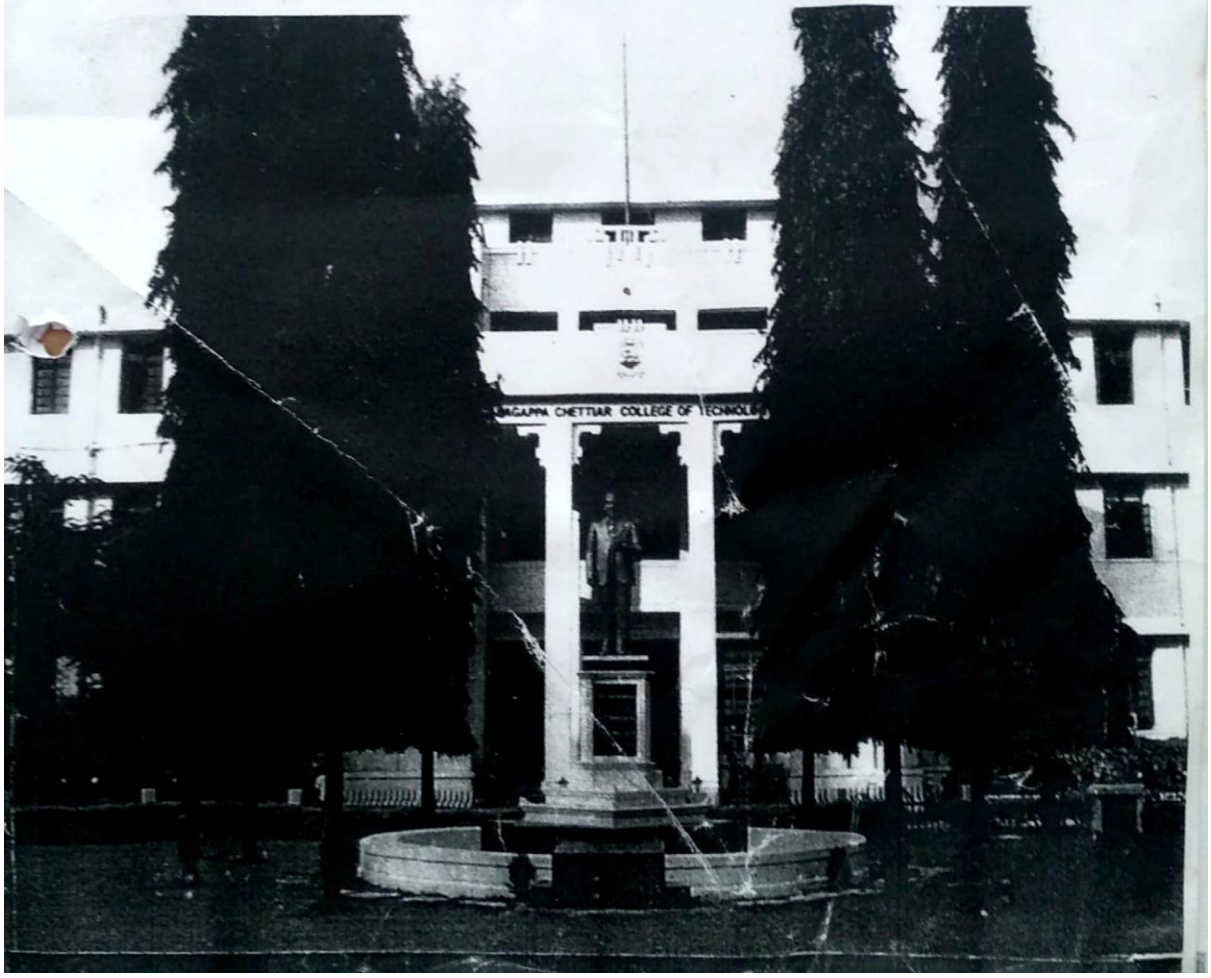

AM-9 **Adsorption Efficiency of Synthetic Nano Iron Oxide and Commercial Activated Carbon Towards the Removal of the Cu(II) Ions-Comparative Study**

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The adsorbent Nano Iron Oxide (SNIO) was synthesized and essential characteristics were ascertained using FT-IR, SEM, and EDAX techniques. Commercially available carbon (CAC) was activated further by acid treatment to enhance its adsorption capacity. Adsorption experiments were carried out by using Batch method to compare the sorption behaviour of SNIO and CAC for the removal of Cu(II) ions. The study was conducted on the basis of parameters such as a function of initial concentration of the adsorbate, adsorbent dosage, contact time and pH. Freundlich and Langmuir isotherm models have been tested. The applicability of various first order kinetic equations like Natarajan-Khalaf, Lagergren, Elovich and Power functions equations were also tested. The optimum conditions of the various factors for the maximum removal of the Cu(II) ions arrived at from this studies.