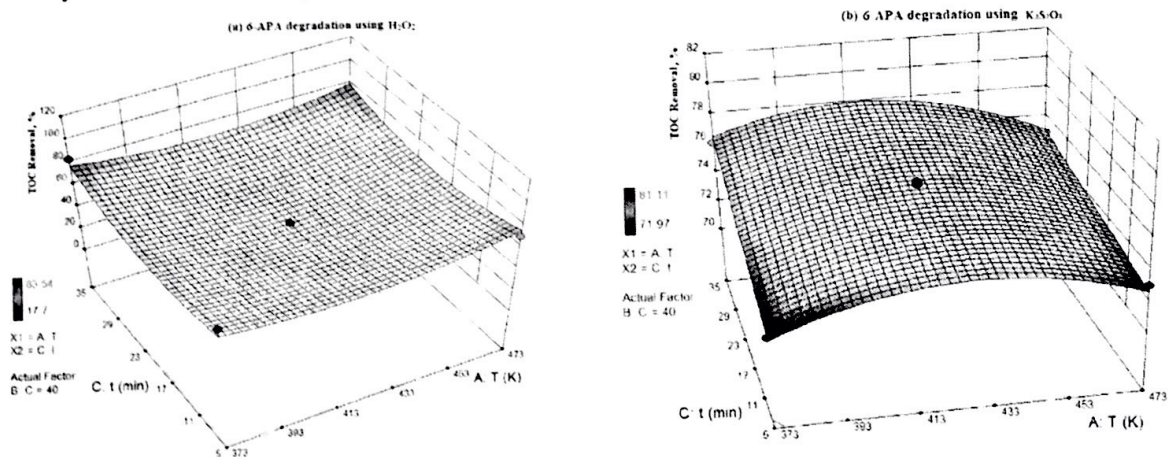


Investigation of 6-Aminopenicillanic acid and Cloxacillin degradation using subcritical water oxidation by various oxidants

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In recent years pharmaceutical drug usage has reached critic level and its wastes which occur from various resources pollutes soil, underground and drinking water. Pharmaceutical drug wastes which return to human body after specific circle, reduce immunity system and cause different disease. As major pharmaceuticals, antibiotics are highly used by both human and veterinary treatment and their presence in water cause the development of antibiotic resistant bacteria. β -lactam antibiotics have been found at ppm concentrations in wastewater. Subcritical water oxidation is promising and green method which can be used to degrade β -lactam antibiotics existing in waste water. Degradation of 6-aminopenicillanic acid and Cloxacillin in subcritical water have been investigated using three oxidising agent such as H_2O_2 , $K_2S_2O_8$ and O_2 . Optimum experimental parameters (Temperature, static time, concentration of oxidising agent) and maximum percentage of degradation efficiency was obtained using Response Surface Methodology. Efficacy of adding specific amount of nano and commercial ZnO catalysis to each working aqueous solution was determined.



(c) Cloxacillin degradation using O_2

