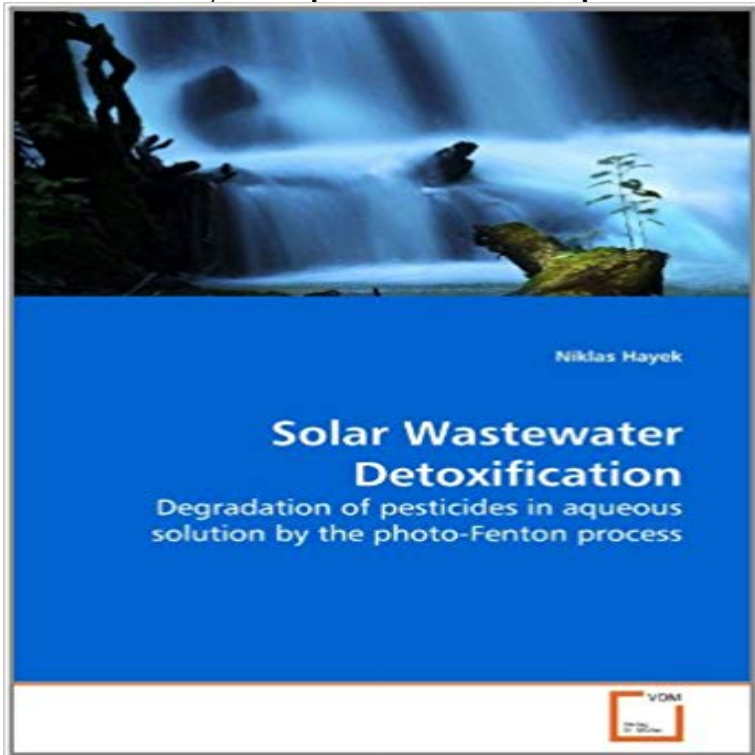


Solar Wastewater Detoxification: Degradation of pesticides in aqueous solution by the photo-Fenton process



Due to excessive use of agrochemical substances during the last decades, pesticides present in wastewaters are of increasing environmental concern. Wastewaters contaminated by pesticides can lead to a breakdown of the biological treatment in a wastewater treatment plant as pesticides are toxic towards micro organisms. New technologies of pre-treatment of such wastewaters are advanced oxidation processes (AOPs), which are based on the production of highly-reactive hydroxyl radicals. Hydroxyl radicals are able to oxidize organic compounds like pesticides and break them down to harmless material such as water, carbon dioxide, and inorganic salts. At the Advanced Oxidation Process described in this work, the Photo Fenton process sunlight can be applied as the source for effective production of hydroxyl radicals. Goal of this work was to investigate the efficiency of the Photo Fenton reaction for oxidizing four commercial pesticides under different conditions and to achieve detoxification of the treated solution. The promising results are presented in this book.

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