TURJOEM
The Turkish Journal of Occupational / Environmental Medicine and Safety

Vol:2, No:1 (1), 2017 Web: http://www.turjoem.com ISSN : 2149-4711

SHC 7. EFFECT OF NANO TiO_2 ON COD REDUCTION ON PHARMACEUTICAL EFFLUENTS

Abdulkarim UZABAKIRIHO

Somayeh Bayat KAZAZI, Bahareh KHADEMI, Ali Akbar MALEKIRAD

MS in Environmental Management, Mohit Palayesh Aria Company, Arak, Iran
Employee, Mohit Palayesh Aria Company, Arak, Iran
Department of Biology, Payame Noor University, Tehran, Iran

Pharmaceutical effluents are the waste generated by pharmaceutical industry during the process of drug manufacturing waste and are characteristically high in organic content. Over the past few years, pharmaceutical waste is considered as an emerging environmental problem due to its continuous input and persistence in the aquatic ecosystem even at low concentration. Hence, in the present study, the treatment of pharmaceutical effluent is evaluated using chemical method in order to Chemical Oxidation Demand (COD) Various operational parameters like the effect of pH, concentration of H_2O_2, $Fe^{2+,}$ and dosages of TiO_2 and nano TiO_2 were all investigated in UV mediated. Maximum COD reduction with present of Ultraviolet at pH3 was 44% and hydrogen peroxide (UV/H_2O_2) was 68% at 180 min with 30 ppm concentration and in combination of 30ppm of H_2O_2 and 3ppmFenton with present of UV maximum COD reduction was 88% at 180, 69% was observed at 0.3g of TiO_2 and in combination of Nano TiO_2 maximum reduction was 97% and found Nano TiO_2 to be more efficient compared to others.

*s.1bayat@yahoo.com