ABSTRACT

DEGRADATION OF PARACETAMOL COMPOUND BY OZONOLYSIS, UV-LIGHT AND SOLAR IRRADIATION PHOTOLYSIS USING N-DOPED TiO_2 CATALYST

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The degradation of paracetamol compound of pure substances and generic tablets formation has been conducted by ozonolysis, photolysis with UV-light and solar irradiation using N-doped TiO_2 catalyst. The degradation of paracetamol compound by ozonolysis using ozonizer and UV-light photolysis using 10 watt UV lamp irradiation (λ 365 nm). The intensity of solar measured during the degradation of paracetamol compound is 47272.75 lux. Ozonolysis and both of photolysis has been done on varied concentration and time of degradation. The degradation percentage of pure substances and generic tablets of paracetamol 4 mg/L could be degraded 13,2% and 13,6% after 20 minutes by ozonolysis without catalyst, the degradation percentage increase 19,7% and 18,6% after using 20 mg N-doped TiO_2 catalyst. Pure substances and generic tablets of paracetamol 4 mg/L could be degraded 82,2% and 72,9% after 120 minutes UV-light irradiation without catalyst, after using 20 mg catalyst N-doped TiO_2 the degradation percentage obtained 85% and 79,4%. The degradation percentage of pure substances and generic tablets of paracetamol 4 mg/L only 10,1% and 10,4% after 120 minutes with solar irradiation, meanwhile after using 20 mg catalyst N-doped TiO_2 the degradation percentage increased significantly until 83,9% and 78,5%.

***Keywords*:** paracetamol, ozonolysis, photolysis, UV-light, solar irradiation, N-doped TiO_2