"Effect of Ultraviolet Rays on Behavior of Unsaturated Polyester in Nitric Acid"

Organic constituents are degrade at irradiation by methods depend on the nature of bonds when they found, thus different reactions happened among polymer chains and may be cut the bonds which lead to small particles which called degradation of polymer or binding between the neighboring chains which is called cross-linking. This research aims to study the effect of ultraviolet rays for 96 hour on behavior of unsaturated polyester with no reinforcement and reinforces with small particles of aluminum in nitric acid. Manufacturing samples from unsaturated polyester without reinforcement after addition of the harder and other samples with powder of aluminum in the ratios (0.1, 0.25, 0.5)% after that put them in the apparatus of ultraviolet rays for four days. Putting the samples in the solution of nitric acid and pure water and the concentration of nitric acid are (20%, 40%, 60%) as well as calculating the average of difference in the weight at two days for ten days. The results prove the ultraviolet rays make the unsaturated polyester more sensible in the nitric acid with concentration 20% which swells with value 2.5. Unsaturated polyester reinforced with 0.5% from aluminum is less to be effected for swelling from other ratios.