

Sonophotocatalysis

¹Iedge Vinayak Sudhakar, ²Shaikh Sameena Ibrahim, ³Jadhav Harshal Dinesh,

⁴Hongekar Shubham Parshuram, ⁵Hoge Avinash Dnyaneshwar

^{1, 3, 4 & 5} Students, B. Pharmacy Final Year Student

² Assistant Professor

Srinath College of Pharmacy, Chhatrapati Sambhajanagar, Maharashtra, India.

vinayakidge84@gmail.com

Abstract: Sonophotocatalysis is described as a combination of two individual processes of photocatalysis and sonocatalysis. It has proven to be highly promising in degrading dissolved contaminants in wastewaters as well as bacteria disinfection applications. It eliminates some of the main disadvantages observed in each individual technique such as high costs, sluggish activity, and prolonged reaction times. The review has accomplished a critical analysis of sonophotocatalytic reaction mechanisms and the effect of the nanostructured catalyst and process modification techniques on the sonophotocatalytic performance. The synergistic effect between the mentioned processes, reactor design, and the electrical energy consumption has been discussed due to their importance when implementing this novel technology in practical applications, such as real industrial or municipal wastewater treatment plants. The utilization of sonophotocatalysis in disinfection and inactivation of bacteria has also been reviewed. In addition, we further suggest improvements to promote this technology from the lab scale to large-scale applications. We hope this up-to-date review will advance future research in this field and push this technology toward widespread adoption and commercialization.

Keywords: Sonophotocatalysis, Sonocatalysis, Photocatalysis, Synergistic effect etc

