Degradation of reactive blue 13 using hydrodynamic cavitation: Effect of geometrical parameters and different oxidizing additives

Sunil Rajoriya, Swapnil Bargole, Virendra Kumar Saharan

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Sunil Rajoriya, Swapnil Bargole, Virendra Kumar Saharan*

Chemical Engineering Department, Malaviya National Institute of Technology, Jaipur-302017, India

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***Author to whom correspondence should be addressed.**

Email: vksaharan.chem@mnit.ac.in; Tel: +91-141-2713244

Abstract:

Decolorization of reactive blue 13 (RB13), a sulphonated azo dye, was investigated using hydrodynamic cavitation (HC). The aim of research article is to check the influence of geometrical parameters (total flow area, the ratio of throat perimeter to its cross-sectional area, throat shape and size, etc.) and configuration of the cavitating devices on decolorization of RB13 in aqueous solution. For this purpose, eight cavitating devices i.e. Circular and slit venturi, and six orifice plates having different flow area and perimeter were used in the present work. Initially, the effects of various operating parameters such as solution pH, initial dye concentration, operating inlet pressure and cavitation number on the decolorization of RB13 have been investigated, and the optimum operating conditions were found. Kinetic analysis