



Analysis of Hydrodynamic and Acoustic Cavitation reactors: Numerical and experimental analysis, applications, operations and scale-up

By Amit Mahulkar, Aniruddha Pandit

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Cavitation is an extremely attractive option to improvise the efficacy of conventional unit operation and unit processes, for its ability to provide energy in concentrated form and at the location of transformation. Cavitation reactors have tremendous market potential for applications ranging from synthesis of biodiesel to specialty chemicals and from effluent treatment to process applications like online mixing. This book explains the working of various cavitation reactors and gives guidelines for its efficient operation and scale-up. This book outlines bubble dynamics models, hydrodynamics models (CFD) and kinetic models for hydrodynamic and acoustic cavitation reactors, to quantify the extent of cavitationally induced microbial cell disruption for applications like water disinfection and ballast water treatment, emulsification, nanoparticle synthesis etc. A novel method of steam induced cavitation for further improving the efficacy of the cavitation reactor is presented with ample experimental and numerical analysis. This book is addressed at researchers and practicing engineers who would like to get insight into cavitation reactor operations.

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Editorial Review

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Amit Mahulkar, PhD in 'CFD Analysis of Cavitation Reactors' in 2009, from Institute of Chemical Technology (ICT), Mumbai and is Design Engineer at HyCa Technologies Pvt. Ltd.. Prof. A. B. Pandit, ICT, Mumbai is pioneer of Hydrodynamic cavitation technology with over 120 research article on cavitation and is chairman of HyCa Technologies Pvt. Ltd.

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