

Accepted Manuscript

Title: Intensification of chaotic mixing in a stirred tank with a punched rigid-flexible impeller and a chaotic motor

Authors: Deyin Gu, Zuohua Liu, Jun Li, Zhaoming Xie, Changyuan Tao, Yundong Wang



PII: S0255-2701(17)30475-0
DOI: <http://dx.doi.org/10.1016/j.cep.2017.08.017>
Reference: CEP 7063

To appear in: *Chemical Engineering and Processing*

Received date: 15-5-2017
Revised date: 27-8-2017
Accepted date: 30-8-2017

Please cite this article as: Deyin Gu, Zuohua Liu, Jun Li, Zhaoming Xie, Changyuan Tao, Yundong Wang, Intensification of chaotic mixing in a stirred tank with a punched rigid-flexible impeller and a chaotic motor, *Chemical Engineering and Processing* <http://dx.doi.org/10.1016/j.cep.2017.08.017>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Intensification of chaotic mixing in a stirred tank with a punched rigid-flexible impeller and a chaotic motor

Deyin Gu^{a,b}, Zuohua Liu^{a,b,*}, Jun Li^{a,*}, Zhaoming Xie^{a,b}, Changyuan Tao^{a,b}, Yundong Wang^c

^a*School of Chemistry and Chemical Engineering, Chongqing University, Chongqing 400044, China*

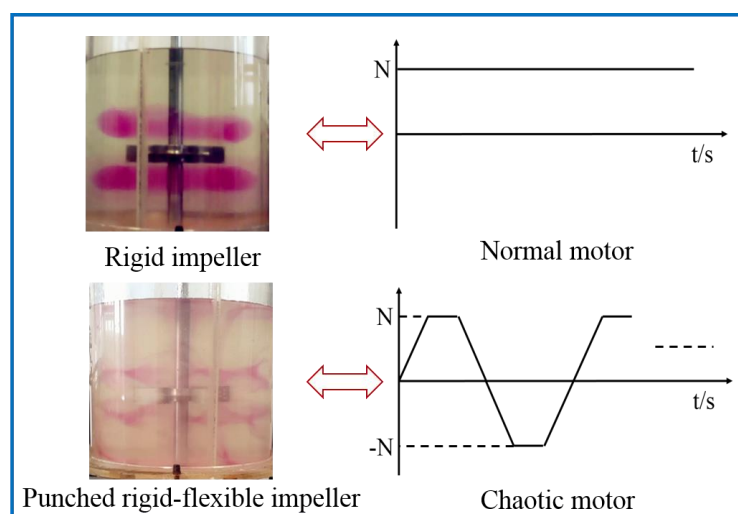
^b*Chongqing Key Laboratory of Chemical Process for Clean Energy and Resource Utilization, Chongqing 400044, China*

^c*Department of Chemical Engineering, Tsinghua University, Beijing 100084, China*

* Corresponding author.

E-mail address: liuzuohua@cqu.edu.cn (Z. H. Liu); jli15@cqu.edu.cn (J. Li).

Graphical Abstract



Two doughnut rings have been formed above and below the rigid impeller with a normal motor. These regions remained segregated from the rest of the mixing system, and acid penetrated the segregated regions due to the diffusive mechanisms, not the convective flow mechanisms, to neutralize the base. The presence of the segregated regions would extend the mixing time. The punched rigid-flexible impeller coupled with a chaotic motor was more effective to eliminate segregated regions. Because punched rigid-flexible impeller could a series of high-speed jet flows

Download English Version:

<https://daneshyari.com/en/article/4998118>

Download Persian Version:

<https://daneshyari.com/article/4998118>

[Daneshyari.com](https://daneshyari.com)