

Accepted Manuscript

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PII: S0009-2509(18)30592-X
DOI: <https://doi.org/10.1016/j.ces.2018.08.023>
Reference: CES 14438

To appear in: *Chemical Engineering Science*

Received Date: 13 March 2018
Revised Date: 19 June 2018
Accepted Date: 9 August 2018

Please cite this article as: G. Delaplace, Y. Gu, M. Liu, R. Jeantet, J. Xiao, X. Dong Chen, Homogenization of liquids inside a new soft elastic reactor: Revealing mixing behavior through dimensional analysis, *Chemical Engineering Science* (2018), doi: <https://doi.org/10.1016/j.ces.2018.08.023>

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Homogenization of liquids inside a new soft elastic reactor: Revealing mixing behavior through dimensional analysis

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Abstract

A novel mixing device (Soft Elastic Reactor – SER) that induces mixing by vibration of the tank wall is presented and characterized using dimensional analysis. This type of mixing system, which does not have an agitator inside the tank, is interesting for specific mixing applications, although it is still seldom used due to the lack of knowledge about how it works. First, the set of dimensionless numbers governing the mixing time of the SER was established. Then, the shapes of mixing curves and the onset of different mixing regimes as a function of the

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