

## عنوان مقاله:

Gas pressure drop and liquid retention volume of a novel spiral fin tube

## محل انتشار:

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## نویسندگان:

Semnani Rahbar - Imam Hossein University, Faculty of Eng., Chem. Eng. Dept

Nasri - Laboratoire des Sciences du Genie Chimique, BP ۴۵۱, ۵۴۰۰۱, Nancy cedex, France

## خلاصه مقاله:

Falling film contactors (exchangers) have an important role in chemical industry and improvement of their efficiency is still an interesting field of research. In this investigation, a novel type of falling film heat and mass exchanger is presented where the working fluid flows as a thin film on two spirally wound fins which are formed on the inside wall of a circular tube. In this research, gas pressure drop and liquid retention volume of the spiral exchanger have been examined for three slopes of fin inside the tube: slight ( $\theta = 27.4^\circ$ ), medium ( $\theta = 36.8^\circ$ ), strong ( $\theta = 59.33^\circ$ ). The results show that strong slope of fin gives the minimum of gas pressure drop and liquid retention volume. These results mean that the tube with internal fins which contains the discs with strong slope can be estimated as the most efficient exchanger comparing with other cases.

## کلمات کلیدی:

falling film, fin, hydrodynamic, pressure drop, retention volume

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