

## عنوان مقاله:

CFD Simulation of an internal loop airlift bioreactor

## محل انتشار:

پنجمین کنگره بین المللی مهندسی شیمی (سال: 1386)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

The hydrodynamics of an internal loop airlift bioreactor was investigated using a Computational Fluid Dynamics (CFD) model with Eulerian description of the gas and liquid phases. The turbulent in the liquid phase was described using the k- $\epsilon$  model. The reactor operated with pure kerosene and diesel and 10% water in diesel microemulsion. Gas holdup were predicted for different superficial gas velocities and compared with experimental data. For comparison, simulation was also done with distilled water. The  $\epsilon_g$  values of kerosene and diesel system were in most cases higher than the water system. Increase in the viscosity of the petroleum system resulted in decrease in the values of  $\epsilon_g$ . The CFD model showed a good agreement with the experiment.

## کلمات کلیدی:

Airlift bioreactor, Gas hold-up, Computational Fluid Dynamics (CFD), Hydrodynamics, Petroleum

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/46326>

