## عنوان مقاله:

Investigation on Enhancement of Forced Convective Heat Transfer Coefficient of MWCNT/water Nanofluid in Double-pipe Heat-exchanger


## محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

تعداد صفحات اصل مقاله: 6



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## خلاصه مقاله:

Nanofluids are the novel generation of conventional heat transfer fluids. They show substantial increase in their thermal properties in comparison to the base fluid. This work mainly examines the enhancement of convective heat transfer coefficient of CNT nanofluids. What is so appealing about this topic is the limited number of studies done on it. Multi-walled carbon nanotubes (MWCNT) in distilled water (DW) were manufactured and stabilized using Sodium Dodecyl Sulfate (SDS) as a surfactant. The stability has been estimated with SEM (Scanning Electron Microscope). Influence of temperature and concentration of the nanoparticles on the improvement of the Nu number in a countercurrent double-pipe heat exchanger have been shown. The experimental results were compared with theoretical data computed according to the recommended semi-empirical correlations. The experimental results indicated considerable increment of convective heat transfer coefficient, up to 57%. It was also made obvious that, the heat transfer coefficient enhancement, increases as particle concentration and operating temperature increase.



## کلمات کلیدی:

Nanofluid, Carbon nanotube, Heat transfer coefficient, Double-pipe heat- exchanger