

## عنوان مقاله:

Experimental investigation of a plate heat exchanger performance using functionalized MWCNT/water nanofluid

## محل انتشار:

چهارمین کنفرانس بین المللی دوسالانه نفت، گاز و پتروشیمی (سال: 1401)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Isa Abbasi - Faculty of Chemical and Petroleum Engineering, Tabriz university, Tabriz, Iran

Saeed Zeinali Heris - Faculty of Chemical and Petroleum Engineering, Tabriz university, Tabriz, Iran

Mousa Mohammadpourfard - Faculty of Chemical and Petroleum Engineering, Tabriz university, Tabriz, Iran

## خلاصه مقاله:

Heat exchangers have been widely used for efficient heat transfer from one medium to another. Nanofluids can afford excellent thermal performance in heat exchangers. The influences of nanofluid utilization as the working fluid in a plate heat exchanger was experimentally analyzed in this study. In order to show off the improvement in heat transfer, the experiments were performed by using distilled water and Carboxyle multi-walled carbon nanotube/distilled water nanofluid. The nanofluid was prepared at the rate of 0.03 % to 0.06% as weighted. A surface-active agent, Gum Arabic, was also doped into the mixture to prevent the sedimentation and flocculation of the nanoparticles inside the solution. The results indicate that heat transfer coefficient in plate heat exchanger can be improved using nanofluid as the working fluid in place of distilled water. The maximum improvement in Convective heat transfer coefficient was obtained as 40.1 % in experimental study. Also, the increment of particle weight fraction of nanofluids enhanced the .pressure drop insignificantly

## کلمات کلیدی:

.Plate heat exchanger, Heat transfer performance, Nanofluid, Pressure drop, Experimental analysis

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1655326>

