

## عنوان مقاله:

thermal comfort analysis of direct evaporative coolers

## محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: ۱۳۹۰)

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## خلاصه مقاله:

In this paper, the capability of direct evaporative cooler (DEC) to meet the thermal needs of individuals and the effects of outdoor air conditions on it have been investigated. For this, mathematical model based on the conservation equations of mass, momentum and energy was developed to determine the heat and mass transfer characteristics of the system. Fortran ۹۰ code on the basis of finite volume scheme was developed for modeling the DEC. The findings show that when the outdoor air temperature and relative humidity are lower than ۳۵°C and ۳۰%, DEC is useful system. It is also found that evaporative cooling systems can not provide thermal comfort conditions when the relative humidity of ambient air reaches up to ۵۰%.

## کلمات کلیدی:

thermal comfort, analysis, direct evaporative cooler

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