

عنوان مقاله:

ANALYSIS OF NATURAL CONVECTION IN SQUARE ENCLOSURE WITH TWO ISOTHERMAL DISCRETE HEAT SOURCES ON OPPOSITE VERTICAL WALLS

محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

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نویسندگان:

A . P Haghighi - *Department of Mechanical Engineering. Faculty of Engineering. Tarbiat Modares University, Tehran, Iran*

.Neda Gilani - *Department of Chemical Engineering. Faculty of Engineering. Tarbiat Modares University, Tehran, Iran*

M . M Moharrer - *Department of Mechanical Engineering. Faculty of Engineering. Tarbiat Modares University, Tehran, Iran*

خلاصه مقاله:

In this paper, analysis is carried out in order to investigate the effects of heat sources location on opposite vertical walls on heat transfer. The vertical walls are isothermally heated, while the horizontal walls are adiabatic. The two-dimensional unsteady problem is solved by means of the stream function–vorticity approach and the numerical solution is carried out by means of the finite difference technique. Results are obtained for Rayleigh number of 105. The results show that the required time to reach steady state condition is minimized when two heat sources are located on top of the walls. The finding also show that the average temperature of the fluid inside the enclosure reach to maximum value when the hot source on cool wall is located at the $0.2 \leq Y \leq 0.4$.

کلمات کلیدی:

analysis, natural convection, discrete hot sources

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