**عنوان مقاله:**

Simultaneous Heat and Mass Transfer in Inclined Channel with Asymmetrical Conditions

**محل انتشار:**

دوماهنامه مکانیک سیالات کاربردی, دوره 5, شماره 3 (سال: 1392)

تعداد صفحات اصل مقاله: 10

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**خلاصه مقاله:**

The present work is a numerical study of simultaneous heat and mass transfer with phase change in an inclined channel formed by two parallel plates. The lower one is covered by a thin liquid water film and the upper one is considered impermeable. The plates are maintained at a constant temperature. The liquid film is assumed to be extremely thin and its temperature is uniform and equal to that of the wall. Thermo-physical properties are considered constant and the Boussinesq assumption is adopted. Results show that the effects of the buoyancy forces on the hydrodynamic, thermal and mass fraction fields are important. These effects depend on the channel inclination and may result on flow reversal when the channel approaches the vertical position. This phenomenon is addressed and a flow reversal chart, as well as the corresponding correlations, for different channel inclinations is given. These correlations give the values of Grashof numbers, which induce flow reversal for a given Reynolds number and inclination angle.

**کلمات کلیدی:**

Simultaneous

**لینک ثابت مقاله در پایگاه سیویلیکا:**

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