

## วิธีการสืบค้น ข้อมูลผู้เขียนร่วม (Co-Authors)

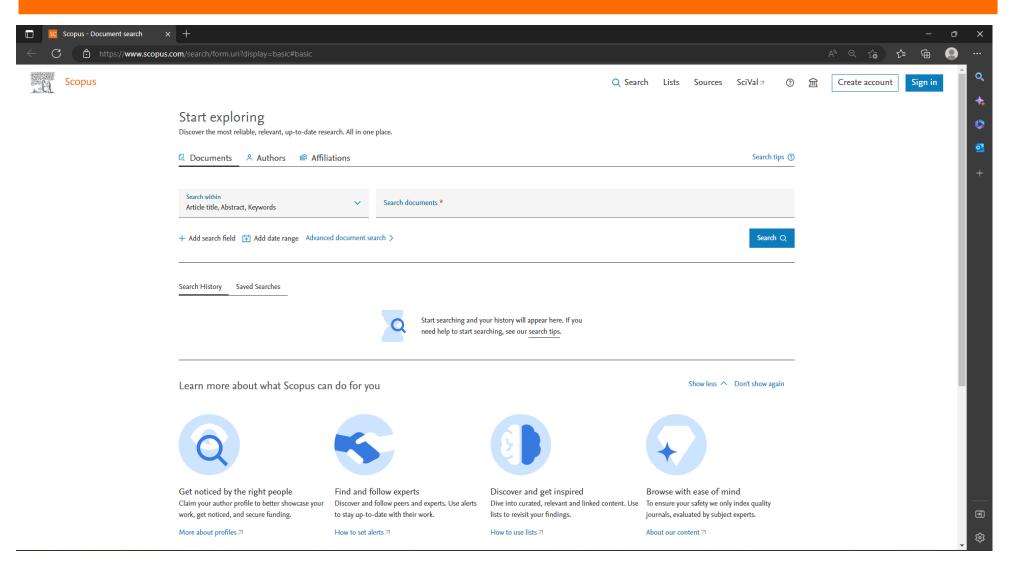
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Case Studies in Thermal Engineering 28 (2021) 101496





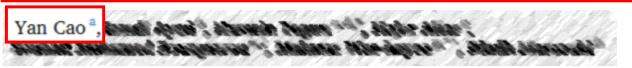
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### ARTICLE INFO

Keywords: Computational fluid dynamic Phase change material Local thermal non-equilibrium porous media Buoyant force Darcy model

### ABSTRACT

The aim of this study is numerically to investigate the effects of local thermal non-equilibrium porous media on the melting process of paraffin with the melting temperature 33°C. The geometry consists of a half-cylinder containing paraffin with a uniform constant temperature and an insulating wall. Also, Darcy model and buoyant force due to density changes are considered in this simulation. The effects of the presence of aluminum foam with porosity  $\varepsilon=0.8$ , and 0.95 and difference temperature  $\Delta T = 5$ , 10, and 15 have been studied on the melting fraction of PCM, temperature and streamlines contours and heat flux of cylinder's surface. The observations show that enhancement of porosity 0.8 to 0.9 increases the volume of PCM 11.7%, and reduces time of melting process 30.8% for  $\Delta T=15$ . Moreover, increment of  $\Delta T=5$  to 15 leads to decrease time of melting process 71.8% when porosity is 0.95.



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