World Academy of Science, Engineering and Technology
International Journal of Mechanical and Materials Engineering
Vol:9, No:12, 2015

The Used of Ceramic Stove Cover and It's Gap to the Efficiency of Water Boiling System

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Abstract : Water boiling system (WBS) using conventional gas stove (CGS) is relatively inefficient unless its mechanism being considered. In this study, an addition of ceramic stove cover (CSC) to a CGS and the gap between CSC and pan have been assessed. Parameters as energy produced by fuel, CSC temperature and water temperature were used to analyze the performance of a CGS. The gaps were varied by 1 – 7 mm in a step of 1 mm. The results showed that a CSC able to increase the performance of a CGS significantly. In certain fuel rate of 0.75 l/m, the efficiency of a CGS obtained in a gap of 4 mm. The best efficiency obtained in this study was 46.4 % due to the optimum condition that achieved simultaneously in convection and radiation heat transfer processes of the heating system. CSC also indicated a good characteristic for covering heat release at the initially of WBS.

Keywords : WBS, CSC, CGS, efficiency, gap
Conference Title : ICMSME 2015 : International Conference on Materials Science and Mechanical Engineering
Conference Location : Bangkok, Thailand
Conference Dates : December 17-18, 2015

Open Science Index, Mechanical and Materials Engineering Vol:9, No:12, 2015 publications.waset.org/abstracts/38101/pdf