

Numerical Calculation of Heat Transfer in Water Heater

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Abstract : This article is trying to determine the status of flue gas that is entering the KWH heat exchanger from combustion chamber in order to calculate the heat transfer ratio of the heat exchanger. Combination of measurement, calculation, and computer simulation was used to create a useful way to approximate the heat transfer rate. The measurements were taken by a number of sensors that are mounted on the experimental device and by a thermal imaging camera. The results of the numerical calculation are in a good correspondence with the real power output of the experimental device. Results show that the research has a good direction and can be used to propose changes in the construction of the heat exchanger, but still needs enhancements.

Keywords : heat exchanger, heat transfer rate, numerical calculation, thermal images

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