

Proceedings of the Korean Nuclear Society Spring Meeting

Pohang, Korea, May 1999

**Measurement of temperature profile using the infrared thermal camera
in turbulent stratified liquid flow for estimation of condensation heat
transfer coefficients**

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ABSTRACT

Direct-contact condensation experiments of atmospheric steam and steam/air mixture on subcooled water flowing co-currently in a rectangular channel are carried out using an infrared thermal camera system to develop a temperature measurement method.

The inframetrix Model 760 Infrared Thermal Imaging Radiometer is used for the measurement of the temperature field of the water film for various flow conditions.

The local heat transfer coefficient is calculated using the bulk temperature gradient along the flow direction. It is also found that the temperature profiles can be used to understand the interfacial condensation heat transfer characteristics according to the flow conditions such as noncondensable gas effects, inclination effect, and flow rates.