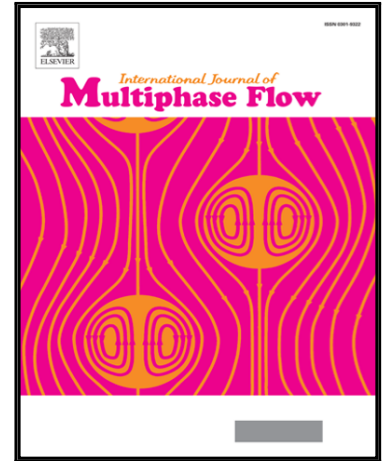


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Heat transfer coefficients during the condensation of low mass fluxes  
in smooth horizontal tubes

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## Highlights

- Measured condensing heat transfer coefficients at low mass fluxes in a smooth horizontal tube at different temperature differences.
- The experiments were also conducted at different wall and saturation temperature differences varying between 3–10°C.
- The flow patterns were recorded with a high-speed video camera at the inlet and outlet of the test section through sight glasses.
- Results showed that the flow patterns during condensation were predominantly stratified and stratified wavy.
- It was also found that the heat transfer coefficients were dependent on the temperature difference between the temperature of the wall on which condensation occurs and the temperature of the condensing refrigerant.
- Furthermore, it was found that the heat transfer coefficient decreased with an increase in this temperature difference.
- When comparing the results of this study at low mass fluxes to the literature, it was found that the absolute mean deviation varied up to 38%.
- An amendment was suggested in a stratified heat transfer coefficient term from literature. It has been found that, with this amendment, the heat transfer coefficients of low mass fluxes could be estimated with errors of  $\pm 5\%$ .

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