

FDRG Seminar

CFD Analysis of Convective Boiling Heat Transfer with Significant Void Fraction – Improvement of Modelling, Evaluation and Application

presented by

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Flow boiling and associated heat transfer characteristics are crucial design considerations for thermal power generation and heat recovery systems such as tube boilers, refrigerating systems and nuclear reactors. Convective boiling is an important mode of heat transfer, by emanating evaporation (i.e. latent heat due to vaporization) and liquid flashing in area of vapour generation significantly enhances heat transfer. Inception of bubble formation, detachment and liquid flashing originate harmonic hydro-thermodynamic behaviour on the heated surface and develop this compartment to flow field where parameters such as turbulent structures, slip velocity between phases and pressure field will be affected. In spite of extensive boiling investigations in last few decades, numerical modelling of this intricate phenomena is under development and yet to accurately address all the hydrodynamic and thermal characteristics in various boiling regimes. This research, attempts to initially address phenomenological concerns, in convective channel flow boiling originated by presence of significant void fraction and then to improve and extend validity of common Eulerian framework of boiling CFD modelling known as RPI method.

Date: Friday 15th November
Time: 4pm – 5pm
Location: 216:207
Curtin University, Bentley Campus

No RSVP required. For queries please email:
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