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Experimental investigation of the flow pattern, pressure drop and void fraction of two-phase flow in the corrugated gap of a plate heat exchanger

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Highlights

- The two-phase flow patterns in the corrugated gap of a plate heat exchanger were investigated experimentally and characterized by means of momentum flux of each phase.
- Two-phase pressure drop in plate heat exchangers is affected by the prevailing flow pattern.
- A new pressure drop correlation is derived, combining the homogeneous and the heterogeneous approach and taking into account different flow patterns, which appear during condensation.
- The electrical capacity is systematically connected to the void fraction of a two-phase flow in a corrugated gap. The mean and the standard deviation of the time dependent electrical capacity gives indication about the flow pattern.

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