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## **CFD Simulations and Visualization of Experimental Verification study on Nucleate Pool Boiling of Liquid Nitrogen**

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With the aim of formulating a new correlation for super-heat and bubble departure diameter, an experimental apparatus was built to conduct a visualization and verification study on the nucleate pool boiling of liquid nitrogen. Bubble features (including departure diameters, frequencies, and shapes) were captured by a high speed camera during nucleate pool boiling. With the acquired data, the influences of super-heat on the bubble departure diameters and the procedures from bubble formation to departure were studied and analyzed. With several existing correlations being further selected and modified, a new correlation was established and improved in accordance to the experimental results and the CFD simulations which was mainly to correlate super-heat and bubble departure diameter of liquid nitrogen on nucleate pool boiling.

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