



## Original Paper

# Fabrication and Determination of an Aluminium Fixed Point Cell as a Secondary Standard in Thermocouple Calibration

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**Received:** 17 September 2015 / **Accepted:** 12 November 2015 / **Published online:** 1 December 2015

## Abstract

A new open-type aluminium (Al) fixed-point cell has been fabricated in Puslit Metrologi-LIPI. The cell was successfully characterized by direct comparison with a commercial Al cell. The cell plateau lasted for four hours with a flatness of 0.014 °C, measured as the difference between the beginning and the end of the plateau using a type S thermocouple. The reproducibility of realizations is 0.04 °C; the immersion profile of the cell was measured for 30 mm depth, from the bottom of the cell, and the variation was found to be 0.02 °C. A good agreement within 0.16 °C was measured at the freezing point. Furthermore, the cell improves the entry in Appendix C, calibration and measurement capability (CMC) by 0.24 °C, allowing the cell to be included as a secondary standard of the international temperature scale of 1990 realization in Puslit Metrologi-LIPI.

## Keywords

Al fixed point; Appendix C CMC; Fabrication