


Original Paper

Evaluation of Three Terminal Capacitance Standards at CSIR-NPL

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Abstract

The reported work is the part of the establishment of metrological traceability of high frequency impedance standards at CSIR-NPL. The evaluation of three terminal GR 1404 type air capacitance standards of nominal values 100 and 1000 pF has been completed using electrical equivalent circuit model. This involves the measurement of reference capacitance at 1 kHz and residual parameters which are capacitive and inductive in nature. Frequency dependent inductance is estimated using linear curve fit from measured residual inductive parameters. Then frequency dependent capacitance value for capacitance standards has been computed at set of frequencies ranging from 1 kHz to 1 MHz.

Keywords

Reference capacitance – Residual parameters – Linear curve fit – Frequency dependent inductance – Capacitance standard