

## Abstract

Research Title : A Synthesis and Design of Immittance Simulator Using CCCCTA

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A circuit topologies for synthesis of immittance simulator based on CCCCTA is proposed in this paper. The proposed circuits can simulate grounded pure inductor and series inductor with resistor. The proposed simulators employ 1 current controlled current conveyor transconductance amplifiers (CCCCTA) and only 1 grounded capacitor without external resistor and component matching requirements. The simulated component values can be adjusted electronically by input bias currents of the CCCCTA. The proposed circuits are then suitable for IC architecture. The application example as current-mode filter and voltage-mode filter are included. The simulation results using PSPICE and experimental results are given to verify the theory and to exhibit the performances of the circuit.

Keywords: Inductance Simulator, CCCCTA