CHAPTER 53

TECHNOLOGY
ELECTRONIC AND COMMUNICATION ENGINEERING

Doctoral Theses

479. MAHAJAN (Alka)
Some Studies of Active Power Filter.
Supervisors : Dr. Pramod Kumar and Dr. Bhim Singh
Th 15463

Abstract

Focuses on developing effective control algorithms and configu-
rations of single phase active power filters. Simulation studies
require the mathematical models of the loads used to show the
usefulness and conformity of the control algorithm for active
power filters. Their perfomance criteria such as total harmonic
distoration, power factor, reactive power, distortion factor, etc
are quite important for the design of control algorithm for
active power filter.

Contents

1. Introduction. 2. Literature Review. 3. Nonelinear loads and
shunt active Power filter. 4. Fuzzy Logic Control of Shunt APF. 5.
Neuro-fuzzy control of shunt APF. 6. Fuzzy-genetic control of shunt
active power filter. 7. Series active filters for sensitive loads
and universal harmonic compensator. 8. Conclusion and futher
scope of the work. Bibliography.

480. SHARMA (Ravindra Kumar)
**Investigation into Some Classes of Current-Mode Analog
Electronic Circuits.**
Supervisor : Prof. Raj Senani
Th 15289

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Abstract

Presents the results of the investigations into the realization of some classes of current-mode analogue electronic circuits. The classes of networks considered include current mode universal biquad filters, current-mode single-resistance-controlled-oscillators and simulted floating inductors. The building blocks considered are Current Feedback Operational amplifiers (CFOA), Operational Transconductance Amplifiers (OTA) and Operational Mirrored Amplifiers (OMAs), all of which are prominent building blocks for analog circuit design which are either available commercially as off-the-shelf integrated circuits (as applicable of CFOAs and OTAs) or can be constructed from commercially available devices (as in case of OMA). Deals with the generation / realization of new circuits configurations for current-mode biquad filters, current-mode oscillators and synthetic inductors using CFOAs, OTAs and OMAs with particular emphasis on attaining features or evolving the types of structures. The functioning of any circuit invariably contains an interplay of voltages and current, whever relevant, the resulting of related voltage-mode circuits have also been detailed out.

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