

C O N T E N T S

CHAPTER NO	T I T L E	PAGE NO
CHAPTER-I	INTRODUCTION AND SURVEY	1-26
1.1	Introduction	
1.2	Survey of literature	
1.3	Basic Filter Circuits and Classification	
1.4	Basic Active Filters and Advantages	
1.4.1	Advantages of Active Filters	
1.4.2	Drawbacks of Active RC Realization	
1.4.3	Applications of Active Filters	
1.5	Active R Filter	
1.5.1	Active R Filter Design Procedure	
1.6	Concluding Remarks	
	REFERENCES	
CHAPTER-II	THEORY OF FILTER	27-81
2.1	Discussion of Lower and Higher Order Filter Circuits	
2.1.1	The First Order Filter	
2.1.2	The Second Order Filter	
2.1.3	Biquad Second Order Filter	
2.1.4	Higher Order Filters	
2.2	Sensitivity	
2.2.1	W and Q Sensitivity	
2.2.2	Magnitude and Phase Sensitivity	
2.2.3	The Multiparameter Sensitivity	
2.2.4	Gain Sensitivity	
2.2.5	Root Sensitivity	
2.3	Various Approximations in Filter Circuit Theory and Design Consideration	

- 2.3.1 Butterworth Approximation
- 2.3.2 Chebyshev Approximation
- 2.3.3 The Inverse Chebyshev Approximation
- 2.3.4 Elliptic Approximation
- 2.3.5 Bessel Approximation
- 2.4 Frequency and Impedance Scaling
- 2.5 State Variable Analysis
- 2.5.1 State Variable Filter
- 2.6 Filter Topology
- 2.6.1 Negative Feedback Topology
- 2.6.2 Positive Feedback Topology
- 2.7 Concluding Remarks

REFERENCES

**CHAPTER-III STUDY OF A NEW ACTIVE R FILTER
CIRCUIT**

82-103

- 3.1 Introduction
- 3.2 The New Active R Circuit
- 3.3 Circuit Analysis
- 3.4 Design Consideration
- 3.5 Experimental Study With Variation
of Q
- 3.6 Results and Discussion
- 3.7 Sensitivity Consideration
- 3.8 Concluding Remarks

REFERENCES

**CHAPTER-IV STUDY OF RESPONSE OF THE CIRCUIT WITH
VARIATION OF CENTER FREQUENCY F_0**

104-114

- 4.1 Circuit Diagram and Experimental
Study
- 4.2 Results and Discussion
- 4.3 Concluding Remarks

REFERENCES

CHAPTER NO	T I T L E	PAGE NO
CHAPTER-V	STUDY OF RESPONSE OF THE CIRCUIT WITH CHANGE OF THE TAPPING POINT	115-128
	5.1 Circuit Diagram	
	5.2 Circuit Analysis	
	5.3 Design Consideration	
	5.4 Experimental Study With Variation in Tapping Point Parameter	
	5.5 Result and Discussion	
	5.6 Concluding Remarks	
	REFERENCES	
CHAPTER-VI	SUMMARY AND CONCLUSIONS	129-136
	APPENDIX -I	137-141
	Calculation of Q	
	APPENDIX-II	142
	Theoretical Results	
	APPENDIX-III	143-144
	Tables of Element Values Used in Circuits	