

Thesis Title

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Thesis Title

*Thesis submitted to
Indian Institute of Technology, Kharagpur
for the award of the degree
of*

Doctor of Philosophy

by

Author Name

under the supervision of

Prof. Supervisor 1

and

Prof. Supervisor 2



Department of <Department Name>
INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

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APPROVAL OF THE VIVA-VOCE BOARD

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Declaration

I certify that

- a. the work contained in the thesis is original and has been done by me under the guidance of my supervisors;
- b. the work has not been submitted to any other institute for any other degree or diploma;
- c. I have followed the guidelines provided by the Institute in preparing the thesis;
- d. I have conformed to ethical norms and guidelines while writing the thesis;
- e. whenever I have used materials (data, models, figures and text) from other sources, I have given due credit to them by citing them in the text of the thesis, and giving their details in the references, and taken permission from the copyright owners of the sources, whenever necessary.

Author Name

Dedicated to

My loving parents

Acknowledgment

Abstract

*T*he abstract of the dissertation goes here

Keywords: Keyword, Keyword, Keyword, Keyword.

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List of Abbreviations

AC Alternating current
AR Autoregressive

List of Symbols

- $(\cdot)^T$ Transpose operation.
 $(\cdot)^H$ Hermitian transpose operation

CHAPTER 1

Introduction

*T*his thesis focuses

1.1 Motivation

Motivate ...

1.2 Background

Tell the background. Cite reference [1] and [2]. You can add an image here as shown in Fig. 1.1. You can add table as shown in Table 1.1

1.3 Research Issues

List the issues here.

Table 1.1: Caption of table

Heading 1	Heading 2	
	Sub Heading 1	Sub Heading 2
Item 1	123 %	456
Item 1	123 %	456



Figure 1.1: Caption of Figure

1.4 Research Objectives

This thesis objectives can be listed as follows:

- obj1
- obj2
- obj3

1.5 Contributions

The main contributions of this thesis can be summarized as follows:

- **Developed XYZ:** Say something here.

1.6 Thesis Organization

- **Creation of PQR:** Text here.

1.6 Thesis Organization

1.7 Conclusions

Summary of the chapter goes here

Conclusions from the Thesis and Future Research Directions

*T*_{his thesis}

Appendices

Appendix 1

A.1 Appendix Section 1

Text 2.

A.2 Appendix Section 2

Text 2.

APPENDIX **B**

Appendix-2 Title

Bibliography

- [1] A. K. Samanta, A. Routray, S. R. Khare, and A. Naha, “Direct Estimation of Multiple Time-Varying Frequencies of Non-Stationary Signals,” *Signal Process.*, vol. 169, p. 107384, 2020.
- [2] A. K. Samanta, A. Naha, A. Routray, and A. K. Deb, “Fast and Accurate Spectral Estimation for Online Detection of Partial Broken Bar in Induction Motors,” *Mech. Syst. Signal Process.*, vol. 98, pp. 63–77, 2018.

Publications from the Thesis

Patent Filed

1. A. Routray, A. Naha, **A. K. Samanta**, Amey Pawar, & Chandrasekhar Sakpal, “A system for assessment of multiple faults in induction motors”, WO2019167086A1, 2019.

Journals

1. **A. K. Samanta**, A. Routray, S.R. Khare, & A. Naha, “Minimum Distance-based Detection of Incipient Induction Motor Faults using Rayleigh Quotient Spectrum of Conditioned Vibration Signal [Accepted]”, *IEEE Transactions on Instrumentation and Measurement*.
2. **A. K. Samanta**, A. Routray, S.R. Khare, & A. Naha, “Direct Estimation of Multiple Time-varying Frequencies of Non-stationary Signals”, *Signal Processing*, vol.169, 2020.
3. **A. K. Samanta**, A. Naha, A. Routray, & A. K. Deb “Fast and accurate spectral estimation for online detection of partial broken bar in induction motors”, *Elsevier Mechanical Systems and Signal Processing*, vol. 98, pp. 63-77, 2018.

Author Biography

Anik Kumar Samanta is currently pursuing his Ph.D. from Advanced Technology Development Centre, Indian Institute of Technology, Kharagpur. He has completed his Masters from the same institute in 2016. His research interests include high-resolution spectral estimation, signal-based fault diagnosis of induction motors, detection theory, detection and estimation of parameters under non-stationary conditions, and embedded signal processing. For more information see: <https://eceanik.github.io/>

