Declaration by Research Scholar

Originality of Research Work

I declare that thesis entitled "Virtual Inertia Issue and its Mitigation Technique in Integration

of Renewable Energy with Grids" is my own work conducted under the supervision of Dr.

Dharmesh J Pandya at Department of Electrical Engineering Department, Faculty of

Electrical Engineering, Atmiya University, Rajkot, Gujarat, India and approved by the

Director of Research.

I further declare that to the best of my knowledge the thesis does not contain any part of any

work which has been submitted for award of any degree either in this University or any other

University without proper citation.

Date:

Place:

Signature of the Research Scholar

KATHAD SHILPA KESHUBHAI

Certificate of Supervisor

This is to certify that work entitled "Virtual Inertia Issue and its Mitigation Technique in

Integration of Renewable Energy with Grids" is a piece of research work done by Kathad

Shilpa Keshubhai under my supervision for the degree of Doctor of Philosophy in Department

of Electrical Engineering, Faculty of Engineering, Atmiya University, Rajkot, Gujarat, India

To the best of my knowledge and belief the research work and thesis

I. Embodies the work of candidate herself,

II. Has duly been completed,

III. Fulfils the requirement of ordinance related to Ph.D. degree of the University &

IV. is up to the standard both in respect of content and language for being referred to

the examiner.

Date:

Place:

Signature of the Research Supervisor

Dr. Dharmesh J Pandya

Thesis Approval Form

The Viva-Voce of the Ph.D. thesis entitled "Virtual Inertia Issue and its Mitigation Technique in Integration of Renewable Energy with Grids" submitted by Kathad Shilpa Keshubhai (191153001.) was conducted on DD/MM/YYYY (Day) at Atmiya University, Rajkot, Gujarat

Based on the Performance of the Candidate, We, the panel of examiners, recommend that (Please tick any of the following)

1. She be awarded Ph.D. Degree

Signature

Research Supervisor

2. The following modifications are to be incorporated in the thesis within one month and viva-voce be re-conducted by the same panel of examiners
Please Suggest Modification
3. He / She should not be awarded Ph.D. Degree
Please mention Reason for Rejection
Date:
Place:

University Nominee

External Examiner

Declaration by Research Scholar

Submission of Thesis

I declare that the submitted thesis entitled "Virtual Inertia Issue and its Mitigation Technique in Integration of Renewable Energy with Grids" incorporates

- 1. All the suggestions / directions / modifications / additions / deletions received from the supervisor and the external examiners through their thesis evaluation reports.
- All the suggestions / directions / modifications / additions / deletions received from the panel of examiners during the public viva-voce (Open Defence) conducted on DD / MM / YYYY

Date:
Place:
Signature of the Research Scholar
Kathad Shilpa Keshubhai

Acknowledgements

It gives immense pleasure to present this work for fulfilment of my doctoral research, which was not possible without blessing of almighty god.

Words are not enough to express my gratitude towards my respected Guide and research Super visor **Dr. Dharmesh J. Pandya**, Associate Professor and Head, Department of Electrical Engineering, Atmiya University, Rajkot for his constant supervision, monitoring and support. He has guided me throughout the tenure of my research work in efficient way.

I cherish my special thanks to my DPC members, **Dr. Samir Ved**, Associate Professor, Marwadi University, **Dr. Vimal Patel**, for their valuable suggestions and way of sharing their expertise.

I am heartily thankful to, Honorable President, Pro-Chancellor, Vice-Chancellor, Registrar, Controller of Examination, Dean Transformative Academics, Deputy Registrar of ATMIYA University for their quick approvals, support and providing infrastructure to shape this work in opt way.

I am extremely grateful to my Ph.D. thesis examiners for sparing their valuable time and reviewing it minutely.

I am delighted to thank **Dr. Ashish Kothari** Sir, Deputy Registrar of Atmiya University for his constant guidance, moral support and cooperation throughout my research journey.

I thank Mr. Chirag Belani of Atmiya University for helping me in documentation of Research work.

I express my deep sense of gratitude towards my working place **VVP Engineering College**, Rajkot, for giving me overall support. I am thankful to **Principal** of VVP Engineering College, **Dr. Alpesh Adeshara**, Professor and Head of Electrical Engineering department, **staff members** of Electrical Engineering Department for their Motivation and constant support. I thank all the trustees and staff members of VVP Engineering College for their support.

"I measure the progress of a community by the degree of progress which women have achieved." Truly said by symbol of Knowledge Dr. B R Ambedkar. My husband Mr. PANKAJ KHUMAN being an electrical engineer guided me for this research work. He supported, encouraged, motivated and helped to achieve my academic progress.

My darling daughters **Aesha** and **Shipra** also pushed me to achieve doctorate degree. I am thankful to my **Parents** specially my source of inspiration my **father** and **mother**, my **sisters Heena**, **Chandni**, my **brother Maulik** and **in laws** for their continuous support. I would like to dedicate my research work to my supportive husband and lovable daughters.

Signature of the Research Scholar

Kathad Shilpa Keshubhai