Dedicated to

Abba & Abba in law, Amma & Amma in law,

Iftikar and Apu

DECLARATION

I hereby declare that the thesis entitled "**Characterization of ambient Ozone (O_3) and its precursor compounds at a remote site of mid-Brahmaputra valley"** is being submitted to Tezpur University in partial fulfillment for the award of the degree of Doctor of Philosophy in the Department of Environmental Science is a record of bonafide research work accomplished by me under the supervision of Prof. R. R. Hoque, Department of Environmental Science, Tezpur University.

The results obtained and related interpretations included in this thesis are based on my original work. All the helps received from various resources (books, research papers, websites etc.) when writing the thesis are acknowledged at the respective place in the text.

I would also like to mention that no part of this thesis has been submitted elsewhere for award of any other degree.

Date: (Warisha Rahman)

Place: Tezpur University

DEPARTMENT OF ENVIRONMENTAL SCIENCE
(UGC SAP-DRS-II)

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(Awardee of Visitor's Best University Award, 2016 and 5th among India's Top 100 Universities, MHRD-NIRF Ranking, 2016)

CERTIFICATE OF THE SUPERVISORS

This is to certify that the thesis entitled **"Characterization of ambient Ozone (O_3) and its precursor compounds at a remote site of mid-Brahmaputra valley**" submitted to the School of Sciences, Tezpur University in partial fulfillment for the award of the degree of Doctor of Philosophy in **Environmental Science** is a record of research work carried out by **Ms. Warisha Rahman** under our supervision and guidance.

All help received by her from various sources have been duly acknowledged.
No part of this thesis has been submitted elsewhere for award of any other degree.

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Warisha Rahman

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ACRONYMS AND ABBREVIATIONS

Abbreviations	Full Form
µg/m3	Microgram per meter cube
%	Percentage
AT	Ambient Temperature
ARL	Air Resources Laboratory
O3	Ozone
NOx	Oxides of Nitrogen
CO	Carbon Monoxide
TNMHC	Total non methane hydrocarbon
NO	Nitric Oxide
NO2	Nitrogen di oxide
0C	Degree Celsius
CAAQMS	Combined Ambient Air Quality Monitoring Station
CBPF	Conditional Bivariate Probability Function
CPF	Conditional probability function
DoE	Department of Environment
EPA	Environmental Protection Agency
HYSPLIT	Hybrid Single Particle Lagrangian Integrated Trajectory Model
IITM	Indian Institute of Tropical Meteorology
IMD	India Meteorological Department
MAPAN	Modeling Air Pollution and Networking
MMH	Maximum Mixing Height
NOAA	National Oceanic and Atmospheric Administration
RH	Relative Humidity
SPSS	Statistical Package for the Social Sciences
USEPA	United States Environmental Protection Agency
WD	Wind Direction
WS	Wind Speed
WHO	World Health Organization
PSCF	Potential Source Contribution factor
CWT	Concentrated Weighted Trajectory