This Thesis is dedicated to

To my Family (Maa, Deta, Dadu and Bubu),

for your endless love, blessings, and the values that guide me every day.

To my dearest husband,

for being my calm, my cheer, and my constant through it all.

And finally, to myself

for enduring, growing, and finding strength I never knew I had.

DECLARATION

I hereby declare that this thesis entitled **'Characterization of Air Pollutants and Settled Dust in Different Indoor Environments'** is being submitted to Tezpur University in partial fulfilment for the award of the degree of Doctor of Philosophy in the Department of Environmental Science, Tezpur University. This is a record of bonafide research work accomplished by me under the supervision of Dr. Pratibha Deka, Department of Environmental Science, Tezpur University, Assam, India.

The obtained results and related interpretations included in this thesis are based on my original work. All the help received from various resources (books, research papers, websites, etc.) when writing the thesis are acknowledged at respective sections of the text. I would like to mention that no part of the thesis has been submitted elsewhere for the award of a similar or any other degree.

Date: 14-11-2025 **Anamika Nath**

Place: **Tezpur** **Reg. No: TZ188753** of **2018**

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CERTIFICATE OF THE SUPERVISOR

This is to certify that the thesis entitled **"Characterization of Air Pollutants and Settled Dust in Different Indoor Environments"** being submitted by **Ms. Anamika Nath** to the School of Sciences, Tezpur University, India for the award of degree of Doctor of Philosophy in the Department of Environmental Science is a record of genuine research work carried out by her under my 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 the award of any other degree.

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Date: 14-11-2025

Place: Tezpur

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ACKNOWLEDGEMENTS

I would like to express my deepest and most heartfelt gratitude to my supervisor, Dr. Pratibha Deka, whose unwavering support, encouragement, and guidance have been the foundation of this research journey. From the very beginning, she believed in me, even when I doubted myself, and her constant reassurance helped me navigate the most challenging phases of this work. Dr. Deka has not only been a brilliant mentor but also a pillar of strength, patience, and wisdom. Her insightful suggestions, thoughtful critiques, and steady presence have shaped the course of this research in more ways than words can fully express.

In addition, I am deeply thankful to the Head of the Department, Prof. Kasi Marimuthu**,** for cultivating a research-friendly atmosphere within the department and for his unwavering support and encouragement throughout my Ph.D. journey.

I am sincerely grateful to my Doctoral Committee (DC) members: Prof. Raza Rafiqul Hoque, Dr. Sumi Handique and Dr. Amit Prakash, for their invaluable feedback, thoughtful suggestions, and steady guidance throughout the progress of my research. Their collective expertise and insightful advice have played a vital role in refining the focus and depth of this study, providing both clarity and encouragement during critical moments.

I wish to express my deepest gratitude to the esteemed faculty members of the department for their unwavering support and encouragement throughout my Ph.D. journey. I sincerely thank Prof. A.K Das, Prof. Ashalata Devi, Dr. Nirmali Gogoi, Dr. Satya Sunder Bhattacharya, Dr. Nayanmoni Gogoi, and Dr. Santa Kalita for their invaluable support and encouragement during my interactions with them.

Special thanks to my lab mates, Mebaaibok L Nonglait, Nicholas Khundrakpam**,** Rebekha Mushahary, Baishali Paul, and Bishal Mahanta for their camaraderie, insightful discussions, and assistance in refining my work and thesis. Their support and teamwork made the challenges of research much more manageable and enjoyable.

I am also grateful for the excellent instrument facilities provided by the Department of Environmental Science, Tezpur University, and Sophisticated Analytical Instrumentation Centre (SAIC), Tezpur University and, which played a crucial role in carrying out this research.

I extend my heartfelt gratitude to Tezpur University and Cotton University for granting me permission to carry out the study. I am also deeply thankful to the households who allowed the research to be conducted on their premises, as well as to the 550 household occupants who participated and cooperated during the surveys and sampling process. Their support, patience, and willingness to share their experiences and knowledge were invaluable and played a critical role in the successful completion of this research.

I am also deeply grateful to University Grants Commission (UGC) Start up grant Project [F.30-437/2018 (BSR) for financial assistance to carry out the research work.

I would also like to express my sincere thanks to the campus drama group, which provided me with a creative outlet throughout my Ph.D. journey. Being part of the group allowed me to perform, unwind, and find a sense of fulfilment beyond academics. It truly helped me stay balanced and connected during the more challenging phases of research. I would also like to thank my friends on campus for their constant support, encouragement, and companionship throughout my Ph.D. journey. Their presence made this academic experience more enjoyable, meaningful, and memorable.

Finally, I am profoundly grateful to my family, Maa, Deta, Bubu, and Dadu, for their unwavering love, support, and encouragement, which have been the cornerstone of my strength throughout this journey. Their faith in me has been a constant source of motivation and has inspired me to persevere through every challenge. I would also like to thank my new family for their immense love, patience, and understanding, which have greatly contributed to the successful completion of this work.

I am deeply thankful to my husband, Samiran. I could not have come even this close to the finish line without him. His unshakeable support, quiet strength, and belief in me, even in the moments when I struggled to believe in myself. This journey, and its completion, would not have been possible without him.

Finally, I owe a word of gratitude to myself, for showing up each day, for not giving up when things got hard, and for discovering the strength I never knew I had.

I express my gratitude to all those who have directly or indirectly contributed to this work and supported me in this academic journey. This thesis would not have been possible without your support.

Anamika Nath

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Abbreviations

ADD	Average Daily Dose
AIHA	American Industrial Hygiene Association
AOR	Adjusted Odds Ratio
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
CF	Contamination Factor
CO_2	Carbondioxide
COD	Crystallography Open Database
CR	Cancer Risk
EF	Enrichment Factor
Derm	Dermal
FTIR	Fourier Transform Infrared Spectroscopy
HAP	Household Air Pollution
HCl	Hydrochloric Acid
HF	Hydrofluoric Acid
HI	Hazard Index
HMs	Heavy Metals
HNO_3	Nitric Acid
HQ	Hazard Quotient
IAP	Indoor Air Pollution
IAQ	Indoor Air Quality
IAQA	Indoor Air Quality Association
ICP-OES	Inductively Coupled Plasma Optical Emission Spectrometry
ISIAQ	International Society of Indoor Air Quality and Climate
Ing	Ingestion
Inh	Inhalation
LADD	Lifetime Average Daily Dose
LEED	Leadership in Energy and Environmental Design
LIB	Library
MH	Main Hall
MPPD	Multiple-Path Particle Dosimetry
NAAQS	National Ambient Air Quality Standards
PLI	Pollution Load Index
PM	Particulate Matter
RH	Relative Humidity
RfD	Reference Dose
SBS	Sick Building Syndrome
SD	Settled Dust

TRE	Traffic Related Elements
USEPA	U.S. Environmental Protection Agency
USGBC	United States Green Building Council
WHO	World Health Organization
XRD	X-ray Diffraction