

DECLARATION

The thesis entitled “**Extraction and encapsulation of phytochemicals from edible flower for application in food system**” is being submitted to School of Engineering, Tezpur University in partial fulfillment for the award of the degree of Doctor of Philosophy in the Department of Food Engineering and Technology is a record of bonafide research work accomplished by me under the supervision of Prof. Laxmikant Shivnath Badwaik. All helps from various sources have been duly acknowledged. No part of the thesis has been submitted elsewhere for the award of any other degree.

Date: 28.07.2025

Place: Tezpur


(Indrani Chetia)

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तेजपुर विश्वविद्यालय/ TEZPUR UNIVERSITY
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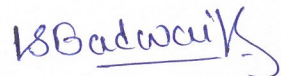
This is to certify that the thesis entitled “**Extraction and encapsulation of phytochemicals from edible flower for application in food system**” submitted to School of Engineering, Tezpur University in partial fulfillment for the award of the degree of Doctor of Philosophy in the Department of Food Engineering and Technology is a record of research work carried out by Miss Indrani Chetia under my supervision and guidance.

All helps received by him from various sources have been duly acknowledged.

No part of the thesis has been submitted elsewhere for award of any other degree.

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(Prof. Laxmikant S. Badwaik)
Supervisor

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Lists of Abbreviations

<u>Symbol</u>	<u>Reference</u>
%	Percentage
a*	Redness
b*	Blueness
L	Lightness
h	Hour
min	Minute
MAE	Microwave assisted extraction
n	Release (diffusional) exponent
R ²	Coefficient of determination
SFE	Supercritical fluid extraction
SEM	Scanning electron microscope
t	Time
UAE	Ultrasound-assisted extraction
ΔH°	Change in enthalpy
GAE	Gallic acid equivalent
QE	Quercetin equivalent
RSM	Response Surface Methodology
CCD	Central composite design
BBD	Box-Behnken Design
HPLC	High performance liquid chromatography
RSM	Response Surface Methodology
DSC	Differential Scanning Calorimetry
FTIR	Fourier Transform Infrared Spectroscopy