Certificate

This is to certify that the thesis entitled **"Investigation of Biomass Derived Functional Carbon Electrodes from leaves of *Spathodea campanulata* and *Tecoma capensis* for Supercapacitor applications"** submitted to Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore in partial fulfillment of the requirement for the award of the degree of **Doctor of Philosophy (Ph.D.)** in **Chemistry** by **Mrs. Tharani .S** during the period from July 2019 to September 2024 under my supervision and guidance and the thesis has not formed the basis for the award of any degree/ Diploma/ Associateship/ Fellowship or similar titles to any other candidate of any university.

25-9-2024

Signature of the

Head of the Department

25/9/24

Signature of the Guide

25/09/2024

Signature of the Dean

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Declaration

I hereby declare that the thesis entitled **"Investigation of Biomass Derived Functional Carbon Electrodes from leaves of *Spathodea campanulata* and *Tecoma capensis* for Supercapacitor applications"** submitted to Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore in partial fulfillment of the requirement for the award of the degree of **Doctor of Philosophy (Ph.D.) in Chemistry** is the record of work carried out by me during the period from July 2019 to September 2024 under the guidance of **Dr. A. Prithiba**, Assistant Professor (SS), Department of Chemistry, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore and has not formed the basis for the award of any degree/ Diploma/ Associateship/ Fellowship or similar titles to any other candidate of any university.

25/9/24

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S. Dhaa
25/09/24

Signature of the Candidate

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Tharani

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SPL	*Spathodea campanulata* leaves
TCL	*Tecoma capensis* leaves
SN	Nitrogen doped biomass carbon from *Spathodea campanulata*
TN	Nitrogen doped biomass carbon from *Tecoma capensis*
FT-IR	Fourier Transform Infrared spectroscopy
XRD	X-ray Diffraction
BET	Brunauer–Emmett–Teller
FESEM	Field Emission Scanning Electron Microscope
EDAX	Energy Dispersive X-Ray Analysis
TEM	Transmission Electron Microscopy
CV	Cyclic Voltammetry
GCD	Galvanostatic Charge – Discharge
EIS	Electrochemical Impedance Spectroscopy
EDLC	Electric double-layer capacitors
ID/IG	Intensity ratio of D and G band
Csp	Specific capacitance
mV/s	Millivolt per second
F/g	Farad per gram
A/g	Ampere per gram
KHz	Kilohertz
Rct	Charge Transfer Resistance
AC	Commercially available activated carbon materials