

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.

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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.


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Signature of the Candidate

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List of Abbreviations

SPL	<i>Spathodea campanulata</i> leaves
TCL	<i>Tecoma capensis</i> leaves
SN	Nitrogen doped biomass carbon from <i>Spathodea campanulata</i>
TN	Nitrogen doped biomass carbon from <i>Tecoma capensis</i>
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
