

CERTIFICATE

This is certify that the thesis, entitled “**INVESTIGATIONS ON METAL (Ag, Au) / METAL OXIDES (ZnO, CuO) NANOPARTICLES INCORPORATED ON CHITOSAN BLENDED REDUCED GRAPHENE OXIDE NANOCOMPOSITES FOR ELECTROCHEMICAL SENSING OF p-AMINOPHENOL AND ANTIBACTERIAL & ANTICANCER APPLICATIONS**”, submitted to the Bharathiar University, in partial fulfilment of the requirements for the award of the **DEGREE OF DOCTOR OF PHILOSOPHY IN PHYSICS** is a record of original research work done by **Mrs.S.YUVASHREE** during the period 2016-2019 of her research in the Department of Physics at **PSGR KRISHNAMMAL COLLEGE FOR WOMEN, COIMBATORE**, under my supervision and guidance and the thesis has not formed the basis for the award of any Degree/ Diploma/ Associate ship/ Fellowship or other similar title to any candidate of any University.

**SIGNATURE OF THE GUIDE
(J.BALAVIJAYALAKSHMI)**

Counter Signed

HEAD OF THE DEPARTMENT

PRINCIPAL

DECLARATION

I, **S. YUVASHREE** hereby declare that the thesis, entitled **“INVESTIGATIONS ON METAL (Ag, Au) /METAL OXIDES (ZnO, CuO) NANOPARTICLES INCORPORATED ON CHITOSAN BLENDED REDUCED GRAPHENE OXIDE NANOCOMPOSITES FOR ELECTROCHEMICAL SENSING OF p-AMINOPHENOL AND ANTIBACTERIAL & ANTICANCER APPLICATIONS”**, submitted to the Bharathiar University, in partial fulfilment of the requirement for the award of the **DEGREE OF DOCTOR OF PHILOSOPHY IN PHYSICS** is a record of original and independent research work done by me during the period of 2016-2019 under the Supervision and Guidance of **Dr.(Mrs.) J. Balavijayalakshmi, M.Sc., M.Phil (Phy), Ph.D, MCA., M.Phil (Comp.Sci)**, Assistant Professor, Department of Physics and it has not formed the basis for the award of any Degree/ Diploma/Associateship/ Fellowship or other similar title to any candidate of any university.

Signature of the Candidate

(S.YUVASHREE)

CERTIFICATE OF GENUINENESS OF THE PUBLICATION

This is to certify that the Ph.D candidate **Mrs. S. YUVASHREE** working under my supervision has published the research article in the refereed UGC indexed journal named

1. Journal of Emerging Technologies and Innovative Research: A Study on Electrochemical Properties of Reduced Graphene Oxide-copper Oxide Nanocomposites under Facile Chemical Treatment with Volume 5, Issue 8, Year of publication: 2018, published by UGC.
2. Material Research Express: Polymer functionalized carbon/metal nanohybrids as a versatile electrochemical sensor for the detection of p-Aminophenol, Year of publication: 2019, published by IOP, <https://doi.org/10.1088/2053-1591/ab11fa>.

The content of the publication incorporates part of the results presented in her thesis.

Counter Signed

Research Supervisor

HOD/ Principal of the Institution
(with seal)