

**STRUCTURAL AND MORPHOLOGICAL CHARACTERISTICS OF
Ce DOPED V₂O₅ NANOPARTICLES**

PROJECT REPORT

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University

In partial fulfilment of the requirement for the award of the degree of

MASTER OF SCIENCE IN PHYSICS

Submitted by

S.GOMATHI (212PH001)

Under the guidance of

Dr. A.ANU KALIANI M.Sc., M.Phil., Ph.D



DEPARTMENT OF PHYSICS

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

RE-ACCREDITED BY NAAC 'A+' GRADE (4th CYCLE)

31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

**SYNTHESIS AND CHARACTERIZATION OF PURE AND
COPPER DOPED NICKEL OXIDE NANOPARTICLES
PROJECT REPORT**

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University

In partial fulfilments of the requirement for the award of the degree of

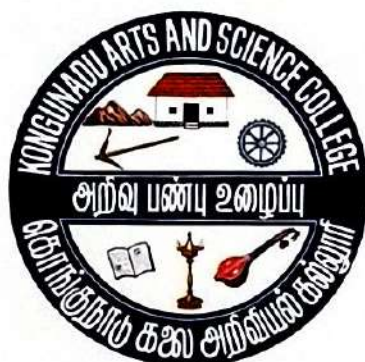
MASTER OF SCIENCE IN PHYSICS

Submitted by

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

RE-ACCREDITED BY NAAC 'A+' GRADE (4th Cycle)

31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

**SYNTHESIS AND CHARACTERIZATION OF PURE AND
MAGNESIUM-DOPED NICKEL OXIDE
NANOPARTICLES**

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University Coimbatore in partial fulfillment

Of the requirements for the award of the Degree of

MASTER OF SCIENCE IN PHYSICS

Submitted by

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DEPARTMENT OF PHYSICS

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RE-ACCREDITED BY NAAC WITH 'A+' GRADE (4th cycle)

31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE (UGC)

APRIL - 2023

MAGNETIC AND OPTICAL PROPERTIES OF ZnFe_2O_4

NANOPARTICLES

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfilments of the requirement for the
Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

Submitted by

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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31st RANK AMONG COLLEGES IN NIRF 2022

COIMBATORE-641029

APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF ZINC DOPED NICKEL OXIDE NANOPARTICLES

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University

In Partial fulfilment of the Requirement for the award of the Degree of

MASTER OF SCIENCE IN PHYSICS

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029.

APRIL -2023

DECLARATION

**GREEN SYNTHESIS OF COPPER - POTASSIUM - CARBON
NANOPARTICLES AND IT'S AGRICULTURAL
APPLICATION.**

Submitted to

Kongunadu Arts and Science College (Autonomous)

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In Partial fulfillment of the Requirement for the award of the Degree of

MASTER OF SCIENCE IN PHYSICS

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31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF ZnO (0.025M CONCENTRATION) SELF POWERED PHOTODETECTORS

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to Bharathiar
University, Coimbatore in Partial fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

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DEPARTMENT OF PHYSICS

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

FABRICATION OF AEROSOL – ASSISTED CHEMICAL VAPOR DEPOSITION

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to Bharathiar
University, Coimbatore in Partial fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

**SELFPOWERED NANOSCALE PHOTODETECTOR
PROJECT REPORT**

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University, Coimbatore

In partial fulfillment of the requirement for the award of the degree of

MASTER OF SCIENCE IN PHYSICS

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COLLEGE OF EXCELLENCE(UGC)

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COIMBATORE-641029

APRIL-2023

**ROLE OF CuO CONCENTRATION IN (CeO₂:CuO:NiO) MIXED
OXIDES-SYNTHESIS AND CHARACTERIZATION**

PROJECT REPORT

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University

In Partial fulfilment of the requirement for the award of the degree of

MASTER OF SCIENCE IN PHYSICS

Submitted by

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

**SYNTHESIS AND CHARACTERIZATION OF
EQUIMOLAR CONCENTRATION OF
 CeO_2 : CuO : NiO**

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to Bharathiar
University Coimbatore in Partial fulfilments of the Requirement for the
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MASTER OF SCIENCE IN PHYSICS

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[RE-ACCREDITED BY NAAC 'A+' GRADE (4th Cycle)]**

**31st RANK AMONG COLLEGES IN NIRF 2022
COLLEGE OF EXCELLENCE (UGC)
COIMBATORE-641029**

APRIL-2023

**SYNTHESIS AND CHARACTERIZATION OF $\text{CeO}_2\text{:CuO:NiO}$
MIXED OXIDES WITH HIGH NiO CONCENTRATION
PROJECT REPORT**

Submitted to

Kongunadu Arts and Science College (Autonomous)

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DEPARTMENT OF PHYSICS

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

**QUATERNARY METAL CHALCOGENIDES ALLOY THIN FILM
FOR PHASE CHANGE MEMORY APPLICATION**

PROJECT REPORT

Submitted to Kongunadu arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfillment of the Requirements for
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MASTER OF SCIENCE IN PHYSICS

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31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE(UGC)

COIMBATORE-641029

APRIL-2023

**MAGNETIC BEHAVIOURS OF EXCHANGE COUPLED OF ZINC
FERRITE AND COBALT FERRITE NANOCOMPOSITE**

PROJECT REPORT

Submitted to Kongunadu arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfillment of the Requirements for
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MASTER OF SCIENCE IN PHYSICS

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COIMBATORE-641029

APRIL-2023

STRUCTURAL AND MORPHOLOGY OF IRON DOPED TITANIUM DIOXIDE THIN FILM BY DIP COATING METHOD

Submitted to

Kongunadu Arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in Partial fulfilments of the Requirement for the

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL 2023

PHOTOCATALYTIC ACTIVITY OF IRON DOPED TITANIUM DI-OXIDE THIN FLIMS PREPARED BY DIP COATING METHOD

Submitted to

Kongunadu arts and Science College (Autonomous) affiliated to

Bharathiar University Coimbatore in partial fulfillment of the Requirements for the

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COLLEGE OF EXCELLENCE(UGC)

COIMBATORE-641029

APRIL 2023

STRUCTURAL AND PROPERTIES OF FERRIC DOPED TITANIUM DIOXIDE THIN FILM BY DIP COATING METHOD

PROJECT REPORT

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to

Bharathiar University Coimbatore in Partial fulfilments

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

Soft

SYNTHESIS AND CHARACTERIZATION OF STRONTIUM DOPED TITANIUM DI-OXIDE THIN FILMS

Submitted to Kongunadu arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfilment of the Requirements for

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MASTER OF SCIENCE IN PHYSICS

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KONGUNADU ARTS AND SICIENCE COLLEGE (AUTONOMOUS)

RE-ACCREDITED BY NAAC WITH 'A+' GRADE (4th Cycle)

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COLLEGE OF EXCELLENCE(UGC)

COIMBATORE-641029

APRIL 2023

SYNTHESIS AND CHARACTERIZATION OF CNT EMBEDDED TiO₂ THIN FILMS

*Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfilments of the requirement for the Award of
the Degree of*

MASTER OF SCIENCE IN PHYSICS

Submitted by

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[RE-ACCREDITED BY NAAC 'A+' GRADE (4th CYCLE)]

31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE – 641029

APRIL – 2023

**SYNTHESIS AND CHARACTERISTIC STUDY OF STRONTIUM DOPED TITANIUM
DI-OXIDE THIN FILMS**

Submitted to Kongunadu arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfillment of the Requirements for
the Award of the Degree of
MASTER OF SCIENCE IN PHYSICS

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31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE(UGC)

COIMBATORE-641029

APRIL 2023

**SYNTHESIS AND CHARACTERIZATION OF REDUCED GRAPHENE OXIDE
ANCHORED VANADIUM PENTOXIDE (V₂O₅) NANOPARTICLES**

*Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfilments of the requirement for the
Award of the Degree of*

MASTER OF SCIENCE IN PHYSICS

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31st RANK AMONG COLLEGES IN NIRF 2022

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE – 641029

APRIL – 2023

**STRUCTURAL AND MORPHOLOGICAL PROPERTIES OF rGO ENCAPSULATED
SAMARIUM DOPED VANADIUM PENTOXIDE (V_2O_5) NANOPARTICLES**

*Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfilments of the requirement for the
Award of the Degree of*

MASTER OF SCIENCE IN PHYSICS

Submitted by

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COIMBATORE – 641029

APRIL – 2023

**SYNTHESIS AND CHARACTERIZATION OF REDUCED GRAPHENE OXIDE
SUPPORTED Gd³⁺ DOPED (V₂O₅) NANOPARTICLES BY COPRECIPITATION
METHOD**

*Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfilments of the requirement for the
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MASTER OF SCIENCE IN PHYSICS

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COIMBATORE – 641029

APRIL – 2023

**SYNTHESIS AND CHARACTERIZATION OF ZINC
DOPED NICKEL VANADATE NANOPARTICLES
BY CO-PRECIIPITATION METHOD**

PROJECT REPORT

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University Coimbatore

In Partial fulfilment of the Requirement for the Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

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[RE-ACCREDITED BY NAAC 'A+' GRADE (4th Cycle)]

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF COPPER DOPED MANGANESE OXIDE NANOPARTICLES

PROJECT REPORT

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University

In Partial fulfilment of the Requirement for the Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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COIMBATORE-641029

APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF NICKEL DOPED ZINC OXIDE NANOPARTICLES

PROJECT REPORT

Submitted to

Kongunadu Arts and Science College (Autonomous)

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In Partial fulfilment of the Requirement for the Award of the Degree of

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF $\text{Zn}_{(0.5)}\text{Mg}_{(0.5)}\text{Fe}_2\text{O}_4/\text{CoFe}_2\text{O}_4$ NANOCOMPOSITE

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to Bharathiar
University, Coimbatore in Partial fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

Submitted by

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DEPARTMENT OF PHYSICS

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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COIMBATORE-641029

APRIL-2023

**PREPARATION AND MAGNETIC PROPERTY OF
 $\text{Zn}_{(0.7)}\text{Mg}_{(0.3)}\text{Fe}_2\text{O}_4/\text{CoFe}_2\text{O}_4$ NANOCOMPOSITE**

PROJECT REPORT

Submitted to Kongunadu arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfillment of the Requirements for
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MASTER OF SCIENCE IN PHYSICS

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DEPARTMENT OF PHYSICS

KONGUNADU ARTS AND SICIENCE COLLEGE (AUTONOMOUS)

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COIMBATORE-641029

APRIL-2023

**SYNTHESIS AND MAGNETIC PROPERTY OF
 $\text{Zn}_{(0.9)}\text{Mg}_{(0.1)}\text{Fe}_2\text{O}_4/\text{CoFe}_2\text{O}_4$ NANOCOMPOSITE**

PROJECT REPORT

Submitted to Kongunadu arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfillment of the Requirements for
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DEPARTMENT OF PHYSICS

KONGUNADU ARTS AND SICIENCE COLLEGE (AUTONOMOUS)

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COIMBATORE-641029

APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF ZINC VANADATE NANO PARTICLES BY CO-PRECIPITATION METHOD

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to Bharathiar
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COIMBATORE-641029

APRIL-2023

**SYNTHESIS OF ZnV_2O_4 NANAOPARTICLES BY SOLID STATE
METHOD**

PROJECT REPORT

Submitted to Kongunadu arts and Science College (Autonomous)

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MASTER OF SCIENCE IN PHYSICS

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KONGUNADU ARTS AND SICIENCE COLLEGE (AUTONOMOUS)

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

BUILDINDG AN EASY LINE FOLLOWER ROBOT USING MICROCONTROLLER

PROJECT REPORT

Submitted to

Kongunadu Arts and Science College (Autonomous)

Affiliated to Bharathiar University

In Partial fulfilments of the Requirement for the Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

Submitted by

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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31st RANK AMONG COLLEGES IN NIRF 2022,

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE-641029

APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE NANOPARTICLES CO-PRECIIPITATION METHOD

PROJECT REPORT

Submitted to Kongunadu arts and Science College (Autonomous) affiliated to
Bharathiar University Coimbatore in partial fulfillment of the Requirements for
the Award of the Degree of

MASTER OF SCIENCE IN PHYSICS

Submitted by

P.SANJAY KUMAR

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DEPARTMENT OF PHYSICS

KONGUNADU ARTS AND SICIENCE COLLEGE (AUTONOMOUS)

RE-ACCREDITED BY NAAC WITH 'A+' GRADE (4th Cycle)

31st RANK AMONG COLLEGES IN NIRF 2022

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SYNTHESIS AND CHARACTERIZATION OF COPPER OXIDE NANOPARTICLES CO-PRECIIPITATION METHOD

PROJECT REPORT

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SYNTHESIS OF MgO NANOPARTICLES BY CO-PRECIIPITATION

METHOD

Submitted to

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COIMBATORE – 641029

APRIL – 2023

**SYNTHESIS AND CHARACTERIZATION OF
IRON OXIDE (ϵ -Fe₂O₃) NANOPARTICLES
BY CO-PRECIPITATION METHOD**

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to
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Award of the Degree of

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COIMBATORE-641029

APRIL - 2023

GREEN ROUTE SYNTHESIS OF COPPER-POTASSIUM NANOPARTICLES

PROJECT REPORT SUBMITTED TO

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

Affiliated to Bharathiar University, Coimbatore in partial fulfilment of the requirements for the

Award of the degree of

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APRIL 2023

SELF POWERED NANOSCALE PHOTODETECTORS

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to Bharathiar

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APRIL-2023

SYNTHESIS AND CHARACTERIZATION OF MANGANESE DOPED COPPER VANADATE NANOPARTICLES

Submitted to Kongunadu Arts and Science College (Autonomous) affiliated to Bharathiar

University Coimbatore in Partial fulfilments of the Requirement for the

Award of the Degree of

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APRIL-2023

**GREEN SYNTHESIS AND CHARACTERIZATION OF
CHITOSAN DOPED Cu-K NANOPARTICLES**

PROJECT REPORT

Submitted to Kongunadu Arts and Science College (Autonomous)

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