

**A STUDY OF MATERIAL CHARACTERIZATION USING XRD,
FTIR, UV-VIS, SEM & TEM**

A project submitted to
Sadakathullah Appa College (Autonomous)
affiliated to Manonmaniam Sundaranar University
in partial fulfilment of the requirement for B.Sc Physics.

Submitted by

ASMA.P	(18APH02)
SADHIYA FATHIMA.M	(18APH08)
AYISHA SHEERIN.N	(18APH13)
KAVIYA.M	(18APH18)

Under the Guidance of
DR.M. MOHAMED ROSHAN M.Sc., M.Phil., Ph.D.,
Assistant Professor



**DEPARTMENT OF PHYSICS
SADAKATHULLAH APPA COLLEGE (AUTONOMOUS),
TIRUNELVELI - 627011**

MOLECULAR INTERACTIONS OF SALBUTAMOL SULPHATE WITH L-PHENYLALANINE

A Project submitted to SadakathullahAppa College
(Autonomous) affiliated to Manonmaniam Sundaranar University
in Partial fulfillment of the requirement for B.Sc physics

submitted by

P. PON ILAKIYA	18APH23
M. SALAM MUTHU BEGAM	18APH25
N. SRIDEVI KAMALAM	18APH26
K. SUBA	18APH27
M. THANGAM	18APH28

Under the guidance of

Dr. M. MOHAMED ROSHAN M.Sc., M.Phil., Ph.D.,

Assistant Professor



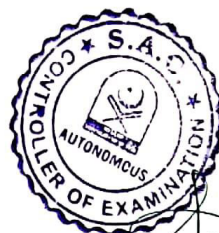
DEPARTMENT OF PHYSICS
SADAKATHULLAH APPA COLLEGE (AUTONOMOUS)
TIRUNELVELI – 627011

**SYNTHESIS AND CHARACTERIZATION OF COBALT OXIDE
NANOPARTICLES USING SOLANUM NIGRUM**

A project submitted to Sadakathullah Appa College (Autonomous)
affiliated to Manonmaniam Sundaranar University in partial fulfilment of
the requirement for B.Sc Physics

Submitted

DAHIRA SHERIN . M	(18APH03)
SAFFRIN SUBYTHA . A	(18APH09)
CHITHRA BHARATHI . S	(18APH14)
MALLIKA ISVARYA LAKSHMI . S	(18APH19)
POORNIMA . S	(18APH24)



UNDER THE GUIDANCE OF

Dr.S.NAZARATH BEGUM M.Sc.,M.Phil., PhD., MBA.,

ASSISTANT PROFESSOR OF PHYSICS

SADAKATHULLAH APPA COLLEGE (AUTONOMOUS)

RAHMATH NAGAR, TIRUNELVELI-627011

APRIL - 2021

CHARACTERIZATION OF CuO THIN-FILM PREPARED BY SILAR METHOD USING XRD AND FTIR ANALYSIS

A project submitted to Sadakathullah Appa College
(Autonomous) Affiliated to Manonmaniam Sundharanar
University in partial fulfillment of the requirements for B.sc
Physics.

Submitted by

A. FATHIMA RAZIA	18APH04
S. SHABANA	18APH10
G. KARPAGAVALLI	18APH15
A. MOHAIDEEN SABEENA	18APH20

Guided by,

Dr.R. Kumuthini M.sc., M.Phil., Phd.,

Assistant professor



GROWTH OF BIS-THIOUREA ZINC CHLORIDE SINGLE CRYSTALS BY SLOW EVAPORATION METHOD

A project submitted to Sadakathullah Appa College
(Autonomous) affiliated to Manonmaniam Sundaranar University
in partial fulfillment of the requirements for B. Sc physics

Submitted by

G. HAJI FATHIMA	18APH06
N. A. SHAKEENA	18APH11
J. KATHEEJAL	18APH16
M. MUKILA	18APH21

Under the guidance of

Dr. D. SATHYA M.Sc., M.Phil., Ph.D.,

Assistant Professor



DEPARTMENT OF PHYSICS

SADAKATHULLAH APPA COLLEGE (AUTONOMOUS)

TIRUNELVELI - 627011

**ESTIMATION OF ULTRASONIC VELOCITY IN BINARY LIQUID
MIXTURES USING C++ PROGRAM**

**A Project report submitted to
SADAKATHULLAH APPA COLLEGE (Autonomous)
affiliated to MANONMANIAM SUNDARANAR UNIVERSITY
in partial fulfilment of the requirements for the award of the degree of
Bachelor of Science in Physics**

Submitted by:

AMINA. S. N. - 18APH01
NADIRA BANU. M. S. - 18APH07
SHALIHA. P. - 18APH12
KAVITHA. P. - 18APH17
PADMINI PRIYA. M.M. - 18APH22



Under the Guidance of

Dr. S. M. ABDUL KADER, M.Sc., M.Phil., PGDCA., SLET., Ph.D.,

Associate Professor



DEPARTMENT OF PHYSICS

SADAKATHULLAH APPA COLLEGE (Autonomous)

TIRUNELVELI – 627 011,

APRIL 2021

**SYNTHESIS AND CHARACTERISATION OF CuCrO_2 AS AN EFFECT OF
CALCINATION TEMPERATURE**

A Project Report Submitted to

SADAKATHULLAH APPA COLLEGE (Autonomous)

Affiliated to MANONMANIAM SUNDARANAR UNIVERSITY

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

BACHELOR OF SCIENCE IN PHYSICS

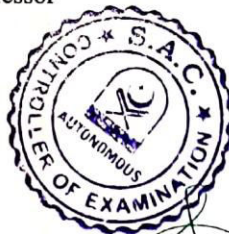
Submitted By

Name	Register Number
SHEIK SALMAN S	18APH33
MOHAMED ARKAM S	18APH38
SANTHANA SELVAKUMAR I	18APH43
VIJAYA RAGAVAN T	18APH48

Under the Guidance of

Dr. S.M. ABDUL KADER, M.Sc., M.Phil., PGDCA., SLET., Ph.D.,

Associate Professor



DEPARTMENT OF PHYSICS

SADAKATHULLAH APPA COLLEGE (Autonomous)

TIRUNELVELI - 627 011

April 2021

MOBILE PHONE DETECTOR

USING IC CA3130

A project submitted to Sadakathullah Appa College (Autonomous) affiliated to Manonmaniam Sundaranar University in partial fulfilment of the requirements for B.Sc. Physics

Submitted By

S.MOHAMED AATHIF	18APH29
R.ESAKKIRAJA	18APH34
V.KALI MUTHU	18APH35
M.PETCHI RAMAN	18APH40
M.SIVA	18APH45

Under the guidance of

Dr.S.NAZARATH BEGUM, M.Sc., M.Phil., Ph.D., MBA.,

Assistant Professor



DEPARTMENT OF PHYSICS

SADAKATHULLAH APPA COLLEGE (AUTONOMOUS)

TIRUNELVELI-627011

April -2021

SOCIAL DISTANCING CAP USING ARDUINO

A Project Report

Submitted to the

Sadakathullah Appa College (Autonomous)

Affiliated to Manonmaniam Sundaranar University

In partial fulfilment of the requirements for B.Sc. Physics

Submitted By

A. MOHAMED AZARUDIN	18APH30
S.M.J. KRISHNAN	18APH36
S. MOHAMED SUBIYAN KASIM	18APH39
P. PETCHI RAJ	18APH41
K. VASANTH RAJA	18APH46

Under the guidance of

Dr. R. KUMUTHINI DURAIMUTHU M.Sc., M.Phil., Ph.D.,

Assistant Professor



DEPARTMENT OF PHYSIC

SADAKATHULLAH APPA COLLEGE (Autonomous)

TIRUNELVELI-62701

**CONSTRUCTION OF SANKARANARAYANAN-
RAMASAMY (SR) METHOD SETUP & SYTHESIS OF
BIS-THIOUREA ZINC CHLORIDE SINGLE CRYSTALS
BY SR METHOD**

A project submitted to Sadakathullah Appa College (Autonomous)
affiliated to Manonmaniam Sundaranar University in partial fulfilment of
the requirements for B.Sc. Physics

Submitted By

M. SHEIK IBRAHIM SIRAJDEEN	18APH32
S. MARIAPPAN	18APH37
N. SANTHANA RAJ	18APH42
A. SIRANJEEVI	18APH44
V. VEERAPANDIAN	18APH47

Under the guidance of

Dr. D. SATHYA M.Sc., M.Phil., Ph.D.,

Assistant Professor



DEPARTMENT OF PHYSICS

SADAKATHULLAH APPA COLLEGE (AUTONOMOUS)

TIRUNELVELI-627011

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Roll No: NPTEL20HS43S82420537

To
SANKARAN V
4/332 VOC NAGAR
GOPALASAMUTHIRAM ROAD, SUTHAMALLI
VILLAKKU
TIRUNELVELI
TAMILNADU - 627604
PH. NO :9345777263



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

SANKARAN V

for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **49** %

Online Assignments	18.25/25	Proctored Exam	30.76/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: 8393

Prof. Rajesh M. Hegde
Chairman, Centre for Continuing Education
IIT Kanpur

Sep-Nov 2020
(8 week course)

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL20HS43S82420537

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This certificate is computer generated and can be verified by scanning the QR code given below. This will display the certificate from the NPTEL repository, <https://nptel.ac.in/noc/>

Roll No: NPTEL20HS43S82420518

To
SABITHA SAMEENA
5/166, THENNANCHOLAI STREET
SEYDUNGANALLUR
TUTICORIN
TAMIL NADU - 628809
PH. NO :9787210979



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
SABITHA SAMEENA
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **72** %

Online Assignments	24.42/25	Proctored Exam	47.27/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **8393**

Prof. Rajesh M. Hegde
Chairman, Centre for Continuing Education
IIT Kanpur

Sep-Nov 2020
(8 week course)

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL20HS43S82420518

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Roll No: NPTEL20HS43S82420236
To
F HIDHAYA FATHIMA
105/33, KOTTUR ROAD, PALAYAMKOTTAI.
TAMILNADU - 627002
PH. NO :9361957283

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:2
An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
F HIDHAYA FATHIMA
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **60** %

Online Assignments	23.83/25	Proctored Exam	36.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: 8393

Prof. Rajesh M. Hegde
Chairman, Centre for Continuing Education
IIT Kanpur

Sep-Nov 2020
(8 week course)

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL20HS43S82420236

To validate and check scores: <https://nptel.ac.in/noc/>

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Roll No: NPTEL20HS43S82420296

To
FATHIMA SAMEERA A S
M.145,STAGE 111,TNHB COLONY,TUTUCORIN
ROAD,V.M CHATRAM
TAMILNADU - 627002
PH. NO :8489063282



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
FATHIMA SAMEERA A S
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **65** %

Online Assignments	23.46/25	Proctored Exam	41.39/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **8393**

Prof. Rajesh M. Hegde
Chairman, Centre for Continuing Education
IIT Kanpur

Sep-Nov 2020
(8 week course)

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL20HS43S82420296

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Roll No: NPTEL21HS07S22430011

To
RAJASHREE D
19 2ND STREET
VEERAMANICKAPURAM MELAPALAYAM POST
TIRUNELVELI
TAMILNADU - 627005
PH. NO :8056788394

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

RAJASHREE D

for successfully completing the course

Soft Skill Development

with a consolidated score of **55** %

Online Assignments	17.25/25	Proctored Exam	37.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: **2267**

Prof. G P Raja Sekhar
Dean, Continuing Education
IIT Kharagpur

Jan-Mar 2021
(8 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No:NPTEL21HS07S22430011

To validate and check scores: <https://nptel.ac.in/noc>

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Roll No: NPTEL20PH15S72420168

To
SUKITHA S
PLOT NO 111/1, ASIRIYAR D COLONY, KTC
NAGAR, TIRUNELVELI
TAMILNADU - 627011
PH. NO :9788124856



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

SUKITHA S

for successfully completing the course

Solid State Physics

with a consolidated score of **47** %

Online Assignments | 10.69/25 | Proctored Exam | 36/75

Total number of candidates certified in this course: **166**

Prof. G P Raja Sekhar
Dean, Continuing Educa: CN
IIT Kharagpur

Sep-Dec 2020
(12 week course)

Prof. Debjani Chakraborty
Co-Director, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL20PH15S72420168

To validate and check scores: <https://nptel.ac.in/noc/>

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Roll No: NPTEL21HS07S12430338

To
JAFFAR SHADHIK SHIFANA
1/420 RAILWAY COLONY
SUTHAMALLI
TIRUNELVELI
TAMILNADU - 627604
PH. NO :9659679011



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
JAFFAR SHADHIK SHIFANA
for successfully completing the course

Soft Skill Development

with a consolidated score of **45** %

Online Assignments	13.08/25	Proctored Exam	32.25/75
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Total number of candidates certified in this course: **2267**

Prof. G P Raja Sekhar
Dean, Continuing Education
IIT Kharagpur

Jan-Mar 2021
(8 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No:NPTEL21HS07S12430338

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Roll No: NPTEL20HS43S82420412

To
MJ MUTHUJEEVITHA
PLOT NO.157, SRINIVASAGAM NAGAR A COLONY
V.M.CHATRAM
TIRUNELVELI
TAMILNADU - 627011
PH. NO :9345711103

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to
MJ MUTHUJEEVITHA
for successfully completing the course

Developing Soft Skills and Personality

with a consolidated score of **71** %

Online Assignments	23.21/25	Proctored Exam	48.2/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: 8393

Prof. Rajesh M. Hegde
Chairman, Centre for Continuing Education
IIT Kanpur

Sep-Nov 2020
(8 week course)

Prof. Satyaki Roy
NPTEL Coordinator
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL20HS43S82420412

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Roll No: NPTEL21HS07S22430160

To
JEEVITHA M
A48, 7TH STREET, NGO B COLONY
JAWAHAR NAGAR, PALAYAMKOTTAI
TIRUNELVELI
TAMILNADU - 627007
PH. NO :9952299458

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

JEEVITHA M

for successfully completing the course

Soft Skill Development

with a consolidated score of **61** %

Online Assignments	16.71/25	Proctored Exam	44.39/75
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Total number of candidates certified in this course: **2267**

Prof. G P Raja Sekhar
Dean, Continuing Education
IIT Kharagpur

Jan-Mar 2021
(8 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No:NPTEL21HS07S22430160

To validate and check scores: <https://nptel.ac.in/noc>