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3.

NAME: BABAJI CHARAN SAHOO

ROLL NO: 17PPHY10

INTERNSHIP TOPIC: SYNTHESIS AND CHARACTERISATION OF $\text{Bi}_{0.9}\text{Gd}_{0.1}\text{FeO}_3$ - BaTiO_3 COMPOSITE

INSTITUTE NAME: INDIAN INSTITUTE OF TECHNOLOGY, PATNA

GUIDE NAME: Dr. MANORANJAN KAR (ASSOCIATE PROFESSOR)

DURATION: 11/05/2018 TO 05/07/2018

ABSTRACT

This report explains the synthesis and characterization of individual Gd doped BiFeO_3 , BaTiO_3 and composite $\text{Bi}_{0.9}\text{Gd}_{0.1}\text{FeO}_3$ - BaTiO_3 . The three conventional synthesis methods i.e. solid state, sol-gel and ball mill method have been used for synthesis of nanocrystalline samples. The phase formation and crystal structure were checked by the X-Ray diffraction pattern analysis. The magnetic properties of individual sample and composite system were studied by using the vibrating sample magnetometer (VSM). The ferroelectric properties were studied using silver electrode. In the composite a significant improvement in the ferroelectric properties observed. To observe the magnetoelectric effect of the composite system, magnetodielectric study carried out, as Bismuth ferrite is a well-known multiferroic material, the composite prepared from this also shows some magnetoelectric effect. An enhancement in the dielectric properties has been observed in the composite system.

Babaji Charan Sahoo


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PR

5.

NAME: BIJAYALAXMI MOHANTY

ROLL NO: 17PPHY04

INTERNSHIP TOPIC: ION IRRADIATION INDUCED MODIFICATIONS OF Au/Ge SYSTEM

INSTITUTE NAME: NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH,
BHUBANESWAR

GUIDE NAME: Dr. PRATAP KUMAR SAHOO

DURATION: 15/05/2018 TO 15/07/2018

ABSTRACT

In this project work, ion irradiation induced defects were studied theoretically. "SRIM" software was used to computationally calculate the defects produced for different energies of incidence of gold ions at different angles on a sample, Gold and Germanium thin films deposited over Silicon substrate. For a particular energy of incidence 30 Kev, the deposition energy was calculated. In the experiment, 5 and 10 nanometer Germanium thin films were deposited on Silicon substrates by Physical Vapour Deposition method. Then 5 and 10 nanometer Gold thin films were deposited by same method on the Ge thin films. The characterisation of the sample was done by XRD and FESEM.

Bijayalaxmi Mohanty


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119

7.

NAME: SUSHREE SANGITA JENA

ROLLNO:17PPHY015

INTERNSHIP TOPIC: MEASUREMENT OF DIELECTRIC AND IMPEDANCE
SPECTROSCOPY STUDY OF MAGNETIC OXIDE

INSTITUTE NAME: NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA

GUIDE NAME: Dr. SIMANCHALA PANIGRAHI

DURATION: 24/05/18 TO 13/07/18

ABSTRACT

Mn substituted multiferroic materials $\text{NdCr}_{1-x}\text{Mn}_x\text{TiO}_5$ ($x=0,0.1$) have been prepared by solid state reaction. XRD pattern of the materials confirm a single phase with orthorhombic structure and doping of Mn effectively changes the electrical and magnetic behaviour of the magnetic oxide. Dielectric properties show that the dielectric constant for both cases (real and imaginary part of dielectric constant) increases with increase in temperature and become independent beyond 3500C. Dielectric loss graph also exhibits same trend as dielectric constant graph. Impedance study (real and imaginary part of impedance) decreases with increase in frequency and become independent beyond frequency 105 Hz.

Sushree Sangita Jena



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9.

NAME: SUNIL LUGUN

ROLL NO: 17PPHY05

INTERNSHIP TOPIC: SYNTHESIS AND STRUCTURAL ANALYSIS OF ZIRCONIUM DOPED BARIUM CERATE ($BaCe_{1-x}Zr_xO_3$) USING SOLID STATE METHOD.

INSTITUTE NAME: BIRLA INSTITUTE OF TECHNOLOGY MESHRA RANCHI.

GUIDE NAME: DR S.K ROUT

DURATION: 09/05/2018 TO 20/6/2018

ABSTRACT

The solid state method is generally applied for the synthesis of zirconium doped barium cerate. The solid state method is usually taken because other processes like solid gel method are very Time taking and the reagents used in such processes are very expensive. The zirconium doped Barium cerate is basically chosen because of its stability towards atmospheric condition. more over High electrical conductivity that is derived from cerate base also goes in its favour. It is found that Between 20% -40% of zirconium doping gives the required result. The XRD pattern shows that the sample Prepared have single phase for all components. These samples have wide range of applications such as an electrolyte in solid oxide fuel cell (SOFCs) due to their higher proton conductivity. Since it is difficult to apply doped barium cerates for fuel cells. In contrast trivalent cation doped $BaCeZrO_3$ has a great Potential for proton conductive electrolytes in fuel cells.

Sunil Lugun



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13.

NAME: RASHMIRANI SETHI

ROLL NO - 17PPHY03

INTERNSHIP TOPIC: STRUCTURAL AND DIELECTRIC STUDY OF BARIUM CALCIUM TITANATE CERAMIC.

GUIDE-Dr. Tanmaya Badapanda

INSTITUTE NAME- C.V. Raman College of Engineering, Bhubaneswar

INTERNSHIP PERIOD- 15th June 2018 to 16th July 2018

ABSTRACT

BST ($Ba_{0.7}S TiO_3$) ceramic were prepared employing a solid state sintering technique. According to XRD data along with $BaTiO_3$ tetragonal peaks, $CaTiO_3$ rich orthorhombic peaks were also observed at room temperature. Abnormal double like hysteresis polarization-electric field (P-E) loops were observed at room temperature for BCT ceramic. Frequency dependent dielectric property was well exhibited by the ceramic at room temperature and could be an alternative material for high dielectric response device.

Rashmirani Sethi



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11.

NAME: PARTHA SARATHI PARIDA

ROLL NO: 17PPHY18

INTERNSHIP TOPIC: CRYSTAL STRUCTURE, MAGNETIC AND
MAGNETODIELECTRIC STUDIES ON $\text{Bi}_{0.9}\text{Gd}_{0.1}\text{FeO}_3\text{-Ni}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$

INSTITUTE NAME: INDIAN INSTITUTE OF TECHNOLOGY, PATNA

GUIDE NAME: DR MANORANJAN KAR (ASSOCIATE PROFESSOR)

DURATION: 11/05/2018 TO 05/07/2018

ABSTRACT

Crystal structure Magnetic and Magneto-dielectric properties of BGFO (sol gel), BGFO (ball mill), NZFO (sol gel), NZFO (ball mill) and BGFO-NZFO composite has been analysed and compared. X-Ray diffraction pattern reveals the formation of the crystal structure of the compound. Crystallite size of BGFO (sol-gel), BGFO (ball mill), NZFO (sol-gel), NZFO (ball mill) and BGFO-NZFO composite are calculated to be 23.79nm, 10.42nm, 14.02nm, 13.04nm and 17.46nm respectively. An enhanced ferromagnetic property and magneto-dielectric coefficient has been observed in the BGFO-NZFO composite suggesting a magneto electric coupling between ferroelectric BGFO and magnetic ZNFO phase.

Partha Sarathi Parida

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12.

NAME: OM PRAKASH MOHAPATRA

ROLL NO - 17PPHY17

INTERNSHIP TOPIC: STRUCTURAL AND DIELECTRIC STUDY OF BARIUM CALCIUM TITANATE CERAMIC.

GUIDE-Dr. Tanmaya Badapanda

INSTITUTE NAME- C.V. Raman College of Engineering, Bhubaneswar

INTERNSHIP PERIOD- 15th June 2018 to 16th July 2018

ABSTRACT

BCT ($Ba_{0.7}Ca_{0.3}TiO_3$) ceramic were prepared employing a solid state sintering technique. According to XRD data along with $BaTiO_3$ tetragonal peaks, $CaTiO_3$ rich orthorhombic peaks were also observed at room temperature. Abnormal double like hysteresis polarization-electric field (P-E) loops were observed at room temperature for BCT ceramic. Frequency dependent dielectric property was well exhibited by the ceramic at room temperature and could be an alternative material for high dielectric response device.

Om Prakash Mohapatra



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CERTIFICATE

This is to certify that the dissertation entitled "PRODUCTION & QUANTIZATION OF BIOFILM COMPONENTS BY ENVIRONMENTAL ISOLATE" submitted MISS ELINA MISHRA to GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA has been carried out at Regional Institute of Biotechnology, Plot No. 266, Damana Square, Bhubaneswar.

The work carried out during dissertation is up to the standard for the partial fulfillment of the degree of MASTER OF SCIENCE IN BOTANY. The help and support received during the dissertation has been duly acknowledged.



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This is to certify that the dissertation entitled "PROCESS PARAMETER OPTIMIZATION FOR PRODUCTION OF BIOSURFACTANT" submitted by MISS SANGEETA MUNDARY to GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA has carried out the work under my supervision.

Further it is certified that the dissertation work is an original work and has not been previously formed the basis for the award of any degree, diploma, fellowship or any other similar title and is independent work done by candidate.

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This is to certify that the dissertation entitled "ANTIMICROBIAL ACTIVITY OF BACTERIAL BIOSURFACTANT" submitted by MISS SWETASHREE PATRA to GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA has been carried out at Regional Institute of Biotechnology, Plot No. 266, Damana Square, Bhubaneswar.

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This is to certify that the dissertation entitled "BIOLEACHING OF MANGANESE FROM LOW GRADE ORE" submitted by MISS NIBEDITA BEHERA to GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA has carried out the work under my supervision.

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This is to certify that Mr. Debashish Sahoo, M.Sc, 3rd Semester, Department of Botany, GOVERNMENT AUTONOMOUS COLLEGE, Rourkela affiliated to SAMBALPUR UNIVERSITY, Jyotivihar, Burla has carried out his summer internship work entitled "Evaluation of *Indica* rice varieties for callus response" under my supervision and guidance for a period of one month (June-July, 2018).

PLACE - CUTTACK

DATE - 05 July 2018

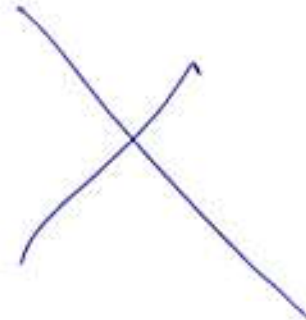
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Certified that **Ms. Swastika Sahoo**, student of M.Sc., Botany, session 2017-2019, Government Autonomous College, Panposh, Rourkela, has successfully completed her training on **Plant Tissue Culture** in the College of Biotechnology, B. A. U., Ranchi from **21.05.2018** to **20.06.2018**.

Her performance during the training was satisfactory.

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This is to certify that the dissertation entitled "DISCOVERY OF CHEMICAL ENTITIES AS POTENT DRUGS AGAINST CANCER" submitted by MISS SWARNAPRAYA TRIPATHY to GOVERNMENT AUTONOMOUS COLLEGE, ROURKELA has carried out the work under my supervision. Further it is certified that the dissertation work is an original work and has not been previously formed the basis for the award of any degree, diploma, fellowship or any other similar title and is independent work done by candidate.

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CERTIFICATE OF COMPLETION

This is to certify that Mr./Miss. SWARNAPARVA TRIPATHY, Batch

ID: RQJ201805/002, Student ID: MSCBot007, a student of M.Sc

Botany of GOVERNMENT AUTONOMOUS COLLEGE, Rourkela,

Odisha has successfully completed 01 (ONE) month (From 21ST May,

2018 to 21ST June, 2018) Dissertation/Internship programme at

REGIONAL INSTITUTE OF BIOTECHNOLOGY, Bhubaneswar.

During his/her Dissertation/Internship tenure with us he/she was found

sincere, hardworking and inquisitive.

The overall score for his/her performance during the project is excellent.

We wish him/her all the very best for his/her future endeavors.

Signature
Dean
Regional Institute of Biotechnology



Signature
Managing Director
Regional Institute of Biotechnology

Issued On Date : 20th June 2018
Approval No : RIB05180024

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This is to certify that the dissertation entitled “Removal of Cr (VI) from water using cerium oxide modified onion peel as a bio adsorbent” being submitted by Jaya Krushna Sahu, Roll number 17PCHE04, the Department of Chemistry, Govt. Autonomous College, Rourkela, Odisha, for the award of the degree of Master of Science is a record of bonafide research carried out by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the dissertation has not been submitted to any other University/Institute for the award of any Degree or Diploma.

The present study is a valuable contribution for the advancement of knowledge in the field of material chemistry and its environmental application.

NIT Rourkela

Date: 18-7-18


Prof. R. K. Patel
(Supervisor)



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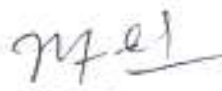
CERTIFICATE

This is to certify that the dissertation entitled "Removal of Cr (VI) from water using cerium oxide modified onion peel as a bio adsorbent" being submitted by Sujata Tripathy, Roll number 17PCHE02, the Department of Chemistry, Govt. Autonomous College, Rourkela, Odisha, for the award of the degree of Master of Science is a record of bonafide research carried out by her under my supervision and guidance. To the best of my knowledge, the matter embodied in the dissertation has not been submitted to any other University/Institute for the award of any Degree or Diploma.

The present study is a valuable contribution for the advancement of knowledge in the field of material chemistry and its environmental application.

NIT Rourkela

Date: 19.7.18


Prof. R. K. Patel
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