



Directorate of Research and Development
Jawaharlal Nehru Technological University Hyderabad

4TH Floor, Administrative Building,
Kukatpally, HYDERABAD – 500 085

Dr. M. Anji Reddy

M.Tech.(ITK), Ph.D

**Professor of Environmental Science & Technology
DIRECTOR**

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Lr. No. R/ DRD /Ph.D./BM/Physics/ Viva-Voce/119/2010-2015, Dt.06-10-2015.

To

Dr. Venugopal Reddy K

(External Examiner)

Associate Professor, Department of Physics

National Institute of Technology Warangal

Warangal-506004, Telangana

Ph.: 9958676482

Email: dkrvgreddy@gmail.com, kvr@nitw.ac.in

Sir,

Sub: DRD – Ph.D. (PHYSICS) Viva-Voce – Appointment of Examiners – Date of Examination
- Reg.

Ref: 1) Academic Regulations & Guidelines R & D.

2) Order No. JNTUH/R&D/Ph.D. Viva/Rem/2010, Dt. 30-3-2010.

3) Order No. JNTUH/ Procds No: D1/3268/2011, Dt. 13-7-2011.

4) JNTUH D.O.Lr.No.P7/Ph.D./14165/06-38/BM/Physics/2014/Revised,Dt.21-09-2015.

It is pleasure to inform that you have been appointed as the External Examiner for the conduct of Ph.D. Viva-Voce Examination, in respect of **Ms. Boinane Mamatha** (H.T. No. **0903PH1711**), Research Scholar in the Faculty of Physics.

A Copy of this letter is also communicated to the Internal Examiner, with a request to kindly contact the External Examiner, Head of the Dept, JNTUH & Research Scholar, for suggesting **TWO dates convenient to all (Preferably after 15 days of receipt of your reply Letter to DRD)**, so as to arrange for the conduct of Ph.D. Viva-Voce Examination at Kukatpally Campus, J.N.T. University Hyderabad. TA, DA and Honorarium/Sitting Charges may please be accepted as per University norms.

Yours sincerely,

DIRECTOR

NOTE: Please Bring the Enclosed Copies of the Examiner Reports on Thesis at the time of Viva – Voce Exam.

Encl: Examiners Report.

Cc to :

1. Dr. P. Sarah (Internal Examiner)
Professor & Dean of R & D
Vardhaman College of Engineering, Kacharam,
Shamshabad, R.R.Dist. – 501218, T.S.
Ph.: 9440008222, Email: pasala_sarah@yahoo.com
2. Dr. T. Radhakrishna, (Co-Supervisor)
Retired Professor & Principal
Vardhaman College of Engineering, Kacharam,
Shamshabad, R.R.Dist.-501218, T.S.

Subject: Report of the Thesis submitted by Ms. Boinane Mamatha in partial fulfillment for the award of Ph.D. in Physics (Science) to be conferred upon by the Jawaharlal Nehru Technological University, Hyderabad.

Title: Investigation of Electrical Properties of Bismuth Layered Piezoelectric Ceramics.

Name of the Candidate: Ms. Boinane Mamatha

Review of the work:

The authors have presented a comprehensive report on the preparation, characterization and electrical properties like dc conductivity, ac conductivity, dielectric response, ferroelectric, piezoelectric properties etc of different Bismuth layered piezoelectric ceramics. The background material, in particular literature review, sample preparation, measurement instrument etc, is sufficiently detailed to give the reader a comprehensive overview that greatly facilitates understanding the research described in the main body of the work. The experimental protocols are appropriate. This thesis is original and good quality in scientific and technological points of view. Author has successfully presented the experimental result.

I therefore, recommend that the candidate be awarded the Doctoral Degree in Physics (Science) by the Jawaharlal Nehru Technological University, Hyderabad.

Having said this, I list below some minor comments:

- (1) Aim and importance of the work should be more focused.
- (2) A systematic comparison of different samples has not been given.
- (3) Discussion of the figures is not systematic in many places.
- (4) Author did not focus the future scope of this study.
- (5) Author did not include the list of abbreviation.

H

Evaluation of Ph.D thesis entitled " Investigation of Electrical properties of Bismuth layered Piezoelectric Ceramics " submitted by Ms B.Mamatha Physics, Jawaharlal Nehru Technological University, Hyderabad.

Investigation of electrical properties of Bismuth layered Piezoelectric Ceramics are potential materials, because of their excellent properties. The present thesis explores to enhance the electromechanical activity and increase the Curie temperature of SrBi₄Ti₄O₁₅ by suitable doping materials for suitable applications at high temperatures.

The above thesis presents a comprehensive characterization of structural, electrical, Impedance and electromechanical properties etc. This material has technological applications. Thus, it seems appropriate that a systematic experimental study has been carried out to discover whether doping or alternative methods of sample preparation might lead to a material with more suitable properties. This thesis is well written and represents a substantial amount of technical work both in terms of sample preparation as well as characterization.

In chapter 1, the author has given brief introduction and literature survey to Bismuth layered Piezoelectric Ceramics. It has readily reflected in the subsequent chapters. Chapter 2 deals with the preparation and experimental techniques employed such as X-ray diffraction for characterization, Scanning Electron Microscopy, Energy dispersive Spectra, Dielectric constant, Ferroelectric, Impedance analyzer, Piezoelectric and electromechanical properties.

Chapter 3 gives the detail preparation of SrBi₄Ti₄O₁₅ by solid state and Sol-gel methods and studied their properties. X-ray method reveals single phase formation with orthorhombic crystal structure was confirmed and particle sized is determined. SEM, dielectric constant, ferroelectric, Impedance conductivity, Piezoelectric and electromechanical properties of the samples are analyzed

Chapter 4 & 5 gives the La, Nd, Zr doped SBT samples are synthesized and characterized and also studied various properties such as Impedance, conductivity of the samples etc. In chapter 6, the dielectric, ferroelectric, Piezoelectric and electro mechanical properties of the prepared samples are studied and discussed.

II

I have several general comments on the experimental results presented in the thesis. Author should address these questions in order to make the thesis useful one.

Page No : 47

Q 1 : Why authors had chosen different sintering temperatures for samples prepared with solid state and sol-gel method?

Q 2 : Structure of the samples was not mentioned in the results and discussion section.

Q 3: Authors have prepared sufficiently large large no. of samples and characterized and presented in a well manner in the thesis. However, authors did not give proper explanations for the changes occurred with temperature variation and method of synthesis. I think such kind of discussion make the thesis sound scientific point of view and helpful to the scientific community.

Page : 53

Q 4 : The morphology appearance will change with magnification. If you go for still higher resolutions and sophisticated equipment like FE-SEM and TEM, then you will be able to know actual particle size with ordinary SEM, you cant say the particle size.

Q 5 : why authors did not calculate particle size from XRD. If you do then you will know that your reported particle size will not match with that.

Q 6 : Which sample is having higher electrical conductivity? Why?

Q 7 : Why authors avoid presenting the proper discussion in the thesis for the changes that have been observed with La and Nd doping?

It would be better if authors add some physical insights deduced from the experimental results in the discussion section in all the chapters.

After going through the thesis in detail, my overall impression on the thesis is that it is a good piece of work. The interpretation and the way of presentation of the results are good. The quality and the contents of the thesis were already published in reputed Journals. Finally I recommend for the award of Ph.D degree to Ms B.Mamatha from JNTU, Hyderabad.

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Report on the Thesis

Report on the Ph.D., thesis entitled: "*Investigation of Electrical Properties of Bismuth Layered Piezoelectric Ceramics*" submitted by **Ms.Boinane Mamatha**, for the award of degree of Doctor of Philosophy (Ph.D.) in Physics, by the Jawaharlal Nehru Technological University Hyderabad, Hyderabad-500 085.

The entire thesis has been drafted by the candidate into **SIX** Chapters, in a synchronized manner to follow the contents easily and conveniently. The author has made a significant contribution in synthesizing various SBT-ss, SBT-sg, SBZT-x, SLBZT-x, SNLBZT-x systems by solid state and sol gel methods and studied their performance through various experimental methods to understand their properties. The author has, also, comprehensively presented the results in a simpler manner in the summary section of the thesis. All the references given in the thesis are all relevant and clearly updated. The components of the thesis are given below.

Chapter-1 the author has introduced the bismuth layered piezoelectric ceramics and their importance. She also done extensive literature survey on bismuth layered piezoelectric ceramics and summarized in this chapter.

Chapter-2 describes material preparation methods with the help of flow charts and tables. In this chapter, the author also describes about various experimental techniques used to characterize these newly developed materials, such as XRD, SEM and other characterization techniques.

Chapter-3 describes preparation of SBT material $\text{SrBi}_4\text{Ti}_4\text{O}_{15}$, by solid state (SBT-ss) and sol gel (SBT-sg) methods and their characterization. This chapter also contains the analysis of XRD, SEM/EDS, dielectric, ferroelectric, impedance, conductivity, piezoelectric and electromechanical techniques used to characterize these materials. The author concluded that single-phase formation with orthorhombic structure was confirmed from XRD Sol gel method has reduced the sintering temp and improved remnant polarization, may be due to better homogeneity. Dielectric constant is higher for SBT-ss than SBT-sg system.

Chapter-4 $\text{SrBi}_4\text{Zr}_x\text{Ti}_{4-x}\text{O}_{15}$ (SBZT-x) and $\text{Sr}(\text{Bi}_{4-x}\text{La}_x)(\text{Ti}_{3.975}\text{Zr}_{0.025})\text{O}_{15}$ (SLBZT-x), $\text{Sr}(\text{Bi}_{3.9-x}\text{Nd}_x\text{La}_{0.1})(\text{Ti}_{3.975}\text{Zr}_{0.025})\text{O}_{15}$ (SNLBZT-x) are prepared by solid state reaction method. These materials were characterized by various experimental methods. A Single-phase formation with orthorhombic structure was confirmed from XRD. Lattice parameters changed with Zr, Nd and La concentrations. Particle size was found to be around 1-6 μm .

Chapter-5 in this chapter the author has studied the impedance and AC and DC conductivity studies of Zr substituted in place of Ti in SBT systems. Similarly, La and Zr in place of Bi and Ti. Nd, La for Bi and Zr for Ti in SBT systems. Impedance studies revealed multiple relations, negative temp coefficient of resistivity behavior was observed. AC conductivity analysis at low frequency region is due to short-range translational hopping mechanism and at high frequency region, due to reorientational hopping mechanism through dipole formation.

Chapter-6 deals with the dielectrical, ferroelectric, piezoelectric and electromechanical studies of modified SBT systems with La and Nd in A site and Zr in B site and their results.

In the concluding section, the author has suggested that $\text{Sr}(\text{Bi}_{3.825}\text{Nd}_{0.075}\text{La}_{0.1})(\text{Ti}_{3.975}\text{Zr}_{0.025})\text{O}_{15}$ is found to be a potential material for high temperature (>500°C) applications.

The research work carried out by the author, is commendable and the exhaustive. The thesis is also written nicely. All the listed publications are relevant and supportive to the thesis.

Based on the above work contributions, I recommend **Ms.Boinane Mamatha** for the award of Ph.D., degree in Physics by the Jawaharlal Nehru Technological University Hyderabad, Hyderabad-500 085.

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Fwd: Regarding Ph.D / M.S /M.Phil. Course Evaluation Status of the Scholar Mr. Kollu Ashok - under your supervision.

Director of Evaluation <dephd@jntuh.ac.in>

Tue 20-06-2017 15:01

To: Dr P Sarah <p.sarah@vardhaman.org>; sarah pasala <pasalasarah@gmail.com>; radhakrishnat_jntu@yahoo.co.in <radhakrishnat_jntu@yahoo.co.in>;

Dear Sir / Madam,

I am to inform you that the current Evaluation status of the scholar - **Mr. Kollu Ashok, (1003PH1712)**, under your supervision, as on 20.06.2017 - Three Reports are Pending from examiners.

This is for your kind information.

With Regards,

Dr. B. Anjaneya Prasad
Professor of ME & Director of Evaluation
JNTUH-Kukatpally
Hyderabad - 500085
Telangana State



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
ANANTHAPURAMU – 515 002 (A.P.) – INDIA.**

Prof. K. RAMA NAIDU
Director of Evaluation

Lr. No.392/Ph.D/ECE-18/BS/ECE./2016 dt. 29.05.2017.

NOTIFICATION

Sub:- Award of Ph.D-Degree in Electronics & Communication Engineering to
Mr. BHASKAR.S

The thesis entitled "A NOVEL HANDOFF MANAGEMENT PROTOCOLS FOR MOBILE NETWORKS" Submitted by Mr. BHASKAR. S [H.T.No.10Ph0409], has been accepted by the University on the recommendation of the panel of examiners. Mr. BHASKAR.S is provisionally declared and qualified for the award of Doctor of Philosophy, in the faculty of Electronics & Communication Engineering. The viva voce examination is conducted on 26.05.2017.

Date: 29.05.2017.

//By Order//


Director, of Evaluation

1. Mr. BHASKAR. S – through the Director, R&D, JNTUA, Ananthapuramu.
2. **Dr.G.A.E.Satish Kumar, Professor, Dept of ECE, Vardaman College of Engineering, Hyderabad. [Supervisor]**
3. Dr.P.Ramana Reddy, Professor, Dept of ECE, JNTUA, College of Engineering, Ananthapuramu.
[Co-Supervisor]
4. Dr.K.Babulu, Professor & HOD, Dept of ECE, JNTUK College of Engineering Kakinada. [External Examiner]
5. PA to Vice-Chancellor, Administrative Building, JNTUA, Ananthapuramu.
6. PA to Rector, Administrative Building, JNTUA, Ananthapuramu
7. PA to Registrar, Administrative Building, JNTUA, Ananthapuramu.
8. The Director, R&D, Administrative Building, JNTUA, Ananthapuramu.
9. The Director, Academic and Planning, Administrative Building, JNTUA, Ananthapuramu.
10. The Controller of Examinations, Administrative Building, JNTUA, Ananthapuramu.
11. The Director Association of Indian Universities, Rouse Avenue, New Delhi.
12. The Public Relations Officer, Administrative Building, JNTUA, Ananthapuramu.



SHRI JAGDISHPRASAD JHABARMAL TIBREWALA UNIVERSITY

(Conducted by Shri Rajasthani Seva Sangh, Mumbai)

(Established U/S 2(f) of UGC Act, 1956 vide Act No. 7377, Volume 32905 of 1-2-2009, Govt. of Rajasthan)
(UGC & AICTE Approved)

Date: 15.06.2019

TO WHOM IT MAY CONCERN

This is to certify that **MD. Ejaz Ahamed**, Registration No. **28216082** attended the Ph.D. viva-voce examination in the subject of **ECE** on 15th June, 2019.

Authorized Signatory

Main Office :

Vidya Nagari, Jhunjhunu-Churu Road, Chudela,

Dist. Jhunjhunu- 333001, Rajasthan

Tel.: 8104883405, 8104883413

E-mail: srss1986@gmail.com Website : www.jjtu.ac.in

Mumbai Office :

C/o Shri Rajasthani Seva Sangh, J.B Nagar, Andheri (E),

Mumbai-400059. (MAH)

Tel.: 9323973505/9819695239 Fax +91-22-26224926

E-mail: srss1986@yahoo.co.in/ srss1986@gmail.com

Website : www.jjtu.ac.in

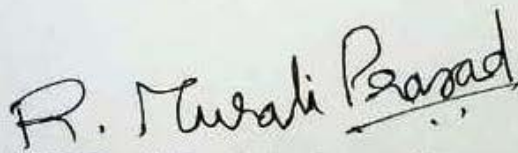
Dr.R.Murali Prasad,
Professor in ECE Department,
Vardhaman College of Engineering, Hyderabad.

CERTIFICATE OF THE CO- SUPERVISOR

This is to certify that the work entitled "**Development of Low Power Test Data Compression Techniques in Digital VLSI Circuits**" is a piece of research work done by **Mr.Mohammad Iliyas** under my guidance and co-supervision for the degree of Doctor of Philosophy Sunrise University, Alwar (Raj) India.

To the best of my knowledge and belief the thesis:

- (1) Embodies the work of the candidate himself.
- (2) Has duly been completed.
- (3) Fulfills the requirements of the ordinance relating to the Ph.D. degree of the University.
- (4) Is up to the standard both in respect of contents and language for being referred to the examiner.


Signature of the Co-Supervisor

Dr. R. Murali Prasad, Ph.D
Professor, Department of ECE
Vardhaman College of Engineering
Shamshabad, HYDERABAD,
Telangana, INDIA.



Reference No: JPU/ADMIN/2019

Date: 13.07.2019

TO WHOM IT MAY CONCERN

This is to certify that **D. Chandraprakash**, Registration No **26616070** attended the Ph.D. viva-voce examination in the subject of **ECE** on 13th July, 2019.

Authorized Signatures

Main Office

Sri Jagdish Prasad Jhabarmal Tiwari Wala University,
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SHRI JAGDISHPRASAD JHABARMAL TIBREWALA UNIVERSITY

श्री जगदीशप्रसाद ज़ाबरमल टीबडेवाला विश्वविद्यालय
Vidyavagar, Jhunjhuna - Chudella Dist- Jhunjhuna, Rajasthan - 333001

(Established U/S 2(F) of UGC Act, 1956 vide Act No. FZ(S) Vidhu/2/2009 of 5-2-2009 of Govt. of Raj)

Thesis Submission Certificate

This is to certify that *Dharani Chandra Prakash* has submitted Ph.D. Thesis entitled "CONTENT BASED SATELLITE CLOUD IMAGE RETRIEVAL USING VARIOUS METHODS AND DISTANCE METRICS", for evaluation of the degree of Doctor of Philosophy on the date 08/05/2019.

Ref No- JUTPA/D/TH/ 2019

Issue Date: 08/05/2019

Asst. Registrar / Registrar
ASST REGISTRAR
JT UNIVERSITY
CHUDELLA (JHUN-RAJ)



Reg No- 28216082

Enroll No: PEN/PED/16/00331



SHRI JAGDISHPRASAD JHABARMAL TIBREWALA UNIVERSITY

श्री जगदीशप्रसाद झाबरमल टीबडेवाला विश्वविद्यालय

Vidyanagari, Jhunjhunu - Churu Road, Dist- Jhunjhunu, Rajasthan - 333001

(Established U/S 2(f) of UGC Act. 1956. vide Act No. F2(5) Vidhi/2/2009 of 5-2-2009 of Govt. of Raj)

Provisional Degree

Doctor Of Philosophy

Certified that the thesis on the subject ' AN EFFICIENT BRAIN IMAGE SEGMENTATION BASED ON GRADIENT BASED WATERSHED TRANSFORM IN LEVEL SET METHOD AND CLASSIFICATION ' Submitted by MD. Ejaz Ahamed For the Degree of Doctor of Philosophy in the Subject of Electronics and Communication Engineering Has been approved by the President on 15/06/2019.

The Ph.D. degree has been awarded in compliance of the University Grants Commission (Minimum standards and procedure for award of Ph.D. Degree) Regulation July 2009.

Ref No- JJT/Ph.D./Degree/2019/2267

Issue Date 24/06/2019



Registrar
Registrar
Shri JJT University
Jhunjhunu (Raj.)

Note: - Degree of Ph.D. subject to confirmation after the formal approval by the Board of Management.

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
(Established by JNTU Act No. 30 of 2008)
Kukatpally, Hyderabad – 500 085, Telangana (India)

Dr. B. ANJANEYA PRASAD
M.Tech., Ph.D., F.I.E., MISTE, M.C.I., MSESIL, MASME
Professor of Mechanical Engg. &
DIRECTOR OF EVALUATION


Ref:- P7/Ph.D./16213/10-31/MSV/CSE/2016
Dt : 01.05.2017

NOTIFICATION

Sub: Award of **Ph.D. Degree in Computer Science and Engineering** to **Mr. Muni Sekhar Velpuru**
(**HT. No. 1103PH0631**).

The thesis entitled "**Content Aware Data Hiding to Trade Off Between Embedding Capacity & Image Quality**", submitted by **Mr. Muni Sekhar Velpuru** has been accepted by the University on the recommendation of the panel of examiners **Mr. Muni Sekhar Velpuru** is provisionally declared and qualified for the award of **Doctor of Philosophy**, in the faculty of **Computer Science and Engineering**.

//By order//


DIRECTOR OF EVALUATION

1. **Mr. Muni Sekhar Velpuru** - through the Director, DRD, JNTUH, Kukatpally, Hyderabad.
2. Dr. K. Venugopala Rao, Professor, Department of CSE, G. Narayanamma Inst. of Technology & Science for Women, Shaikpet, Hyderabad - 500 104, Telangana State. [**Supervisor**]
3. Dr. N. Sambasiva Rao, Principal, Sumathi Reddy Institute of Technology for Women, Ananthasagar, Hasanparthy, Warangal - 506 371, Telangana State. [**Co-Supervisor**]
4. Dr. B. Ramadoss, Professor, Department of Computer Applications, National Institute of Technology Trichy, Tiruchirapalli - 620 015, Tamilnadu. [**External Examiner**]
5. PA to Vice-Chancellor, Administrative Building, JNTUH, Kukatpally, Hyderabad.
6. PA to Registrar, Administrative Building, JNTUH, Kukatpally, Hyderabad.
7. The Director, Directorate of R&D, JNTUH, Kukatpally, Hyderabad.
8. The Director, Academic and Planning, JNTUH, Kukatpally, Hyderabad.
9. The Controller of Examinations, JNTUH, Kukatpally, Hyderabad.
10. The Director, Association of Indian Universities, Rouse Avenue, New Delhi.
11. The Public Relations Officer, Administrative Building, JNTUH, Kukatpally, Hyderabad.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
HYDERABAD - 500 085, TELANGANA STATE, INDIA

TS 1291142



H.T No. : **1103PH0631**

Mr. Muni Sekhar Velpuru

S/o. V Muddu Krishna Reddy

having fulfilled the academic requirements in *April - 2017*
has this day been admitted by the Executive Council to the Degree of

Doctor of Philosophy

Computer Science And Engineering

Topic: "Content Aware Data Hiding to Trade Off Between Embedding Capacity & Image Quality".

Given under the Seal of the University

Date: 09-05-2018



Uppanna

DIRECTOR OF EVALUATION

Acharya

REGISTRAR

Alexander

VICE CHANCELLOR



47114109234

PC No
317000581