



Shri Shivaji Education Society, Amravati's

# Jijamata Mahavidyalaya, Buldhana

Chikhali Road, Buldhana - 443 001

NAAC Reaccredited with 'B' Grade - CGPA 2.88 (2013-18)

Affiliated to

Sant Gadge Baba Amravati University, Amravati

Website: [www.jmvbuldhana.ac.in](http://www.jmvbuldhana.ac.in)



## SELF STUDY REPORT

FOR

NAAC REACCREDITATION 'CYCLE 3'





Shri Shivaji Education Society, Amravati's

**Jijamata Mahavidyalaya, Buldhana**

## **SELF STUDY REPORT**

### **CRITERION - III**

#### **Research, Innovations and Extension**

#### **3.1 QnM**

#### **Resource Mobilization**

#### **for Research**

\*\*\*\*\*

##### **3.1.1.1 QnM**

**Grants received from Government and non-  
governmental agencies for research projects /  
endowments (INR in Lakhs)  
(last 5 years)**



## Resource Mobilization for Research

### Index

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## Criterion III: Research, Innovations and Extension

### DVV Clarification

#### 3.1.1

1) The Minor Research Project entitled “A Critical Study of the Economic and Social Work of Women’s Saving Group in Khamgaon Tahsil” was sanctioned by UGC in September 2009. The Principal Investigator submitted his research project and UGC (WRO) has finalized this project vide its letter F.No.23-1017/09(WRO) dated 28 February 2020.

2) List of Grant for Research Project received during assessment period

Name of the research project/ endowment	Name of the Principal Investigator/ Co-investigator	Department of Principal Investigator	Year of Award	Amount Sanctioned (In Lakhs)	Duration of the project	Name of the Funding Agency	Type (Government/ non-Government)
Production & Optimization of a commercially viable alkaline protease from Haloalkaliphiles	Dr. V. M. Hemke	Zoology	Aug. 2015	4.50	20.03.2015 to 02.08.2018	UGC WRO	Government
To Synthesize and study the structural, Electrical and Magnetic Properties”, F. No. 47-1238/09 (WRO)	Mrs. S. S. Nimje	Physics	Sep. 2009	1.70	17.09.2009 to 01.09.2017	UGC WRO	Government
A Critical Study of the Economic and Social Work of Women’s Saving Group in Khamgaon Tahsil	Dr. S .N. Gawai	Commerce	Feb 2009	0.40	02.09.2009 to 26.02.2020	UGC WRO	Government





Shri Shivaji Education Society, Amravati's  
**JIJAMATA MAHAVIDYALAYA, BULDHANA**

CHIKHLI ROAD, BULDHANA -443001  
NAAC Reaccredited 'B' (CGPA 2.88 ) 2013-18

Website: [www.jmvbuldhana.ac.in](http://www.jmvbuldhana.ac.in)  
E-mail : [principaljmvbuldhana@gmail.com](mailto:principaljmvbuldhana@gmail.com)



**Dr. Panjabrao Deshmukh**  
Founder President

**Hon'ble Shri Harshvardhan P. Deshmukh**  
President  
Shri Shivaji Education Society, Amravati



**Capt. Dr. Prashant P. Kothe**  
Principal  
Mobile No. 9822461416

JMVBLD/2022-23


Date: 15/11/2022

**Declaration**

This is to declare that the information, reports, true copies, numerical data etc. furnished in this file as supporting documents are verified by the Internal Quality Assurance Cell and found correct.


  
**Subodh N. Chinchole**  
(IQAC Coordinator)  
Coordinator  
I.Q.A.C.  
Jijamata Mahavidyalaya  
Buld. 443001




  
**Dr. Prashant P. Kothe**  
(Principal)  
Principal  
Jijamata Mahavidyalaya,  
Buldana

1. Dr. Vijayshri M. Hemke

MRP Dr V M. Hemke



ज्ञान-विज्ञान विभूक्तये



सत्यमेव जयते

विश्वविद्यालय अनुदान आयोग  
University Grants Commission  
मानव संसाधन विकास मंत्रालय, भारत सरकार  
Ministry of Human Resource Development, Govt. of India  
पश्चिम विभागीय कार्यालय गणेशखिंड, पुणे- ४११००४  
Western Regional Office, Ganeshkhind, Pune - 411007

Ph: 020 - 25696896, 25696897  
Fax: 020 25691477  
Website- www.ugc.ac.in  
Email: [wrougci@gmail.com](mailto:wrougci@gmail.com)

20 FEB 2015

File No: 47-927/14(WRO)

THE PRINCIPAL,  
JIJAMATA MAHAVIDYALAYA, CHIKHALI  
ROAD, BULDANA, BULDANA-443001.

**Subject: Approval for Minor Research Project during XII Plan.**

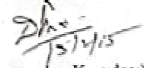
Sir/Madam,

I am directed to convey the approval of the UGC for a Minor Research Project in the subject of **Zoology** entitled "Production and optimization of a commercially viable alkaline protease form haloakaliphiles" to be undertaken by **Dr. Hemke V. M** of JIJAMATA MAHAVIDYALAYA, CHIKHALI ROAD, BULDANA, BULDANA-443001.

Non-Recurring Grant (For Two years)	Amount (Rs.)	Recurring grant (For Two years)	1st Year Amount	2nd Year Amount
Books & Journals	10000	Contingency	25000	25000
Equipment	230000	Special Need	20000	20000
		Travel/Field work	10000	10000
		Chemicals & Glassware	50000	50000
		Others	0	0
Total (Rs.)	240000		105000	105000


Total allocation amount for the project: Rs. 450000/-


You may send the Acceptance Certificate as per Annexure-II (Copy enclosed) duly forwarded by the Principal of the College alongwith acceptance of the conditions governing the research project to this office and through email at [wrougci@gmail.com](mailto:wrougci@gmail.com) immediately.

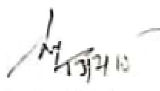
Yours sincerely,  
  
(Dr. Devender Kawday)  
Joint Secretary

Copy to:

- DR. HEMKE V. M,  
HEAD, DEPT. OF ZOOLOGY,  
JIJAMATA MAHAVIDYALAYA,  
CHIKHALI ROAD,  
BULDANA, BULDANA- 443001.
- DIRECTOR (BCID),  
SANT GADGE BABA AMRAVATI UNIVERSITY,  
AMRAVATI, AMRAVATI- 444602.
- GUARD FILE.



  
Principal  
Jijamata Mahavidyalaya  
Buldana

  
(L. N. Sahu)  
Section Officer

Criterion III: Research, Innovations and Extension | QLM 3.1.1



विश्वविद्यालय अनुदान आयोग  
University Grants Commission  
मानव संसाधन विकास मंत्रालय, भारत सरकार  
Ministry of Human Resource Development, Govt. of India  
पश्चिम विभागीय कार्यालय गणेशखिंड, पुणे- ४११००७  
Western Regional Office, Ganeshkhind, Pune - 411007.

Ph: 020 - 25696897, Fax: 020 - 25691477  
Website- www.ugc.ac.in  
Email: mrpugcwro@gmail.com

F. No. 47-927/14 (WRO)

Dated: July 2019

02 AUG 2019

✓ THE PRINCIPAL,  
JIJAMATA MAHAVIDYALAYA,  
CHIKHALI ROAD,  
BULDANA, PIN- 443001.



Subject: NOC/ finalization of Minor Research Project awarded to Dr. Hemke V. M in the Subject of Zoology.

Sir/Madam,

Please refer to your letter no. Nil dated Nil, regarding the Minor Research Project awarded to Dr. Hemke V. M in your College in the subject of "Zoology". I am to inform you that the account of Minor Research Project titled "Production and optimization of commercially viable alkaline protease form haloalkaliphiles" sanctioned by the UGC (WRO), may be treated as finalized and settled as per final report /utilization certificates submitted by the College

Heads	UGC Allocation	1 <sup>st</sup> & 11 <sup>th</sup> Inst. Grants already released	Total Exp. Incurred (as reported by College)	Grants proposed to be released as Final Inst/ Adjustment
<b>Non-Rec:</b>				
Books/ Journals	10000	10000	10171	0
Equipment	230000	230000	230119	0
<b>Total- I</b>	<b>240000</b>	<b>240000</b>	<b>240290</b>	<b>0</b>
<b>Rec:</b>				
Contingency	50000	25000	55680	25000
Special Needs	40000	20000	38850	18850
Travel	20000	10000	28354	10000
Chemicals	100000	50000	100059	50000
Other	0	0	0	0
<b>Total- II</b>	<b>210000</b>	<b>105000</b>	<b>222943</b>	<b>103850</b>
<b>All Total I &amp; II</b>	<b>450000</b>	<b>345000</b>	<b>463233</b>	<b>103850*</b>

\*As the Audited UC/SE was not submitted within six months from the date of completion of the project. Hence the balance amount is not admissible as per UGC Guidelines. Further, the project has not been completed within the prescribed tenure of the project.

It would be highly appreciated if you kindly submit the Feedback Form enclosed herewith.

Yours faithfully,

*(Signature)*  
(Dr. N. Gopuland)  
Joint Secretary

Encl: As Above

Copy to:

- DR. HEMKE V. M, JIJAMATA MAHAVIDYALAYA, CHIKHALI ROAD BULDANA, BULDANA, PIN- 443001.
- REGISTRAR, SANT GADGE BABA AMRAVATI UNIVERSITY, CAMP AREA, NEAR TAPOVAN GATE, AMRAVATI, PIN-44602.
- DIRECTOR, HIGHER EDUCATION, CENTRAL BUILDING, NEAR PUNE RAILWAY STATION, PUNE, PIN- 411001.
- ACCOUNTANT GENERAL, MAHARASHTRA STATE, 101, MAHARSHI KARVE MARG, MUMBAI- 400020
- GUARD FILE



*(Signature)*  
2018/19  
Principal  
Jijamata Mahavidyalaya  
Buldana


*(Signature)*  
(Vinod Singh Yadav)  
Education Officer

Sr. No.	57
P.T.	NIL



## Project Completion Certificate


This is certify that the Minor Research Project entitled," Production and optimization of a commercially viable alkaline Protease from haloalkaliphiles" file No. 47-927/14(WRO)has been completed successfully by Dr. Mrs. V. M. Hemke and submitted the equipments and books to this college.

  
Principal  
Jijamata Mahavidyalaya  
Buldana (M.S.)



  
Principal  
Jijamata Mahavidyalaya  
Buldana





Shri. Shivaji Education Society, Amravati's  
**JIJAMATA MAHAVIDYALAYA, BULDANA**  
 NAAC Re-accredited 'B' Grade with CGPA 2.38  
 President: **Dr. Anil B. Shelke**      Principal: **Dr. D. M. Ambhore**  
 Founder: **Dr. Ganjourao Deshmukh**

Chikhali Road, Buldana 443001 (Maharashtra) Ph.No. : [07262] 287157 (R), Cell:9422182479  
 Index No. Junior College : J-04.01.003      Senior College :302

No.:JMVB/ 133/8/2017-2018  
 Buldana Dated : 16/08/2017

To,

The Joint Secretary  
 University Grants Commission,  
 WRO-Pune.

Sub:- Submission of Final Report on Minor Research Project  
 Ref: File No. 47-927/14(WRO) dated 20/03/2015

Respected Sir,

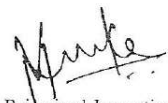
With respect to the above subject we are here with submitting the Final Report on Minor Research Project entitled "Production and optimization of a commercially viable alkaline Protease from haloalkaliphiles".

We are submitting the following documents required for the settlement of this Minor Research Project.


1. Statement of expenditure (Audited by CA)	2. Statement of expenditure incurred on the field work.
3. Utilization Certificate	4. Final Report of Minor Research Project
5. Proforma of Submission	6. Summary
7. Project Completion Report	8. Assets Certificate
9. Accession Certificate	10. Publications

We request you to release the balance amount Rs. 1,05,000 as the second installment of this MRP.


Thanking you.



Principal Investigator



Principal  
 Jijamata Mahavidyalaya  
 Buldana



Principal  
 Jijamata Mahavidyalaya  
 Buldana (M.S.)

Website- [www.jmvb.org](http://www.jmvb.org)      E-mail: [drdmambhore@gmail.com](mailto:drdmambhore@gmail.com)

**Summary of the findings/ achievement made in the Minor Research Project Completed With Financial Assistance from UGC**

Sanction Letter No. file No. 47-927/14(WRO) dated 20-02-2015.

Title of the Project:-

**Production and optimization of a commercially viable alkaline Protease from haloalkaliphiles".**

With increasing importance on the environmental protection with decreasing pollution, the use of enzymes particularly from extremophiles, gained considerable attention from the last several years. Extremozymes are now-a-day replacing chemical catalyst in manufacturing of chemicals, textiles, pharmaceuticals, paper, food, leather processing and agricultural chemicals since the enzymes prepared with suitable properties with the advent of new knowledge in biotechnology. The Lime and sodium sulphide were used for the removal of hair from leather but presence of these chemicals in tannery waste is responsible for remarkable pollution, causing health hazards to the tannery workers and Lime produces a poisonous sludge while sodium sulphide is highly toxic and has obnoxious odor.

Alkaline protease producing bacteria are of also great importance in detergent and textile industry due to their high thermo stability and pH stability and most important industrial enzymes, accounting for about 60% of total enzyme market. As there is large demand of protease, isolation and production of extremozyme is most important to fulfill this demand. But such types of extremozyme are produced from microorganism which survives in extremophilic environment such as soda lake and alkaline hot springs.

In this project work, study is done on the protease producing bacteria from Lonar Lake.

**Target of 1<sup>st</sup> year was**

- To isolate protease producing bacteria by enrichment culture technique.
- Identification of the bacterial isolates.

**Target of 2<sup>nd</sup> year was**

- To isolate protease producing bacteria by enrichment culture technique.



*[Handwritten Signature]*  
Principal  
Jijamata Mahavidyalaya  
Buldhana

- Identification of the bacterial isolates.
- Different experimentation were performed as
- ✓ Enrichment and isolation of microorganisms
  - ✓ Screening of bacterial alkaliphiles
  - ✓ Identification of the bacterial culture
  - ✓ Statistical analysis was done
  - ✓ Preparation of crude enzyme extracts
  - ✓ Partial characterization of protease
  - ✓ Enzyme Assay
  - ✓ Effect of pH on alkaline protease activity
  - ✓ Effect of temperature on alkaline protease activity
  - ✓ Effect of substrate concentration on alkaline protease activity
  - ✓ Effect of enzyme concentration on alkaline protease activity:
  - ✓ Enzyme stability in presence of solvents
  - ✓ Dehairing potential of proteases:
  - ✓ Compatibility with various commercial detergents
  - ✓ Destaining efficiency of enzymes.

Results and its discussion illustrated in detail in final report in bound copy. Conclusion of the projects are given in brief here.

The present study was carried out with the purpose of defining proteolytic enzyme from haloalkaliphilic bacterial strain, which were adapted to live at extreme salt and alkaline environments. In our study, the culturable dependent approach was applied to study the protease producing bacteria from Lonar crater. These extreme haloalkaliphiles in general were specialist since them able to survive under alkaliphilic conditions and may be useful for industrial application. The cultivation based methods have a great importance in research, providing the possibility in investigations of biotechnologically significant bacterial isolates under laboratorial stipulation and this work revealed a data for supporting further studies of enzyme producing bacteria from these evidently alkaliphilic habitats. In the present study the physiological and biochemical and 16S rDNA sequencing were used for the identification of bacterial culture were belonging to *Bacillus*. However, the conventional bacterial classification methods based on the




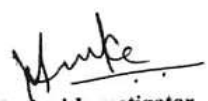
*[Signature]*  
Principal  
Jijamata Mahavidyalaya  
Buldana

morphology, physiology and biochemical test were time consuming. But at the same time it is necessary for the screening of the bacterial culture to avoid the replicating culture for sequencing and other genetic method for identification of bacteria in future. The optimum pH of *Bacillus cereus* and *Bacillus fimus* protease were found to be 10.5. The enzyme was active between pH ranging from 10-12. The protease from *Bacillus pumilus* was active in a wide pH range with optimum activity at pH 9.5


The optimum activities of *Bacillus pumilus* and *Bacillus* sp. DS3 protease were found at pH 9.5 and 10 respectively with 35 U/mL and 23U/mL. The different characteristics toward the sensitivity to organic solvent, metal ions revealed the unique features of protease. The enzyme described in the present report emphasizing several features like to those found in other protease enzymes, including, the alkaline pH profile and thermal stability closely resembled to features reflected in alkalo-thermophilic organisms. The enzyme revealed excellent stability and compatibility towards detergents. Studies indicated its utility for turmeric stain removal properties. The physical properties of the experimental removal of hair from goat skin revealed effective dehairing of fine hairs within 48 h indicating its eco-friendly nature in dehairing. Effects of metal ions and enhance the activity indicated that the alkaline protease belongs to the family of serine proteases thereby give an opportunity to its biotechnological potential and to take super advantage in leather, detergent and pharmaceuticals industries as an eco-friendly.

Alkaline proteases are of great importance in detergent, textile and leather industry. So this research on production and optimization of alkaline protease is beneficial to all above commercial industries.

  
Principal  
Jijamata Mahavidyalaya  
Buldana (M.S.)

  
Principal Investigator  
Dr. Mrs. V. M. Hemke  
(Ph.D.)  
Department of Zoology  
Jijamata Mahavidyalaya, Buldana.



  
Principal  
Jijamata Mahavidyalaya,  
Buldana

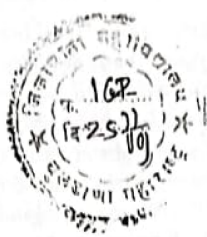
## 2. Prof. Shalini S. Nimje

University Grants Commission  
Western Regional Office  
Ganeshkhind, Pune - 411007

File No: 47-1238/09 (WRO)

The Accounts Officer  
University Grants Commission  
Ganeshkhind, Pune-411007

Phones: (020) 25691477,  
25691178, 25696897  
Fax: (020) 25691477  
Web site: www.ugc.ac.in  
17 NOV 2009



**Subject: Financial assistance to college teachers for undertaking Minor Research Projects – Release of first installment.**

Sir,

The UGC on the recommendations of the Expert Committee has approved the Minor Research Project entitled "To Synthesize and study the structural, Electrical and Magnetic Properties of ... in the subject- Physics to be undertaken by Prof. Nimje S. S., Jijamata Mahavidyalaya, Buldana, Buldana (Vidarbha)- 443001. The financial assistance of the UGC would be limited to Rs. 170000/- (Rupees one lakh seventy thousand Only) for a period of Two years. An amount of Rs. 145000/- (Rupees Only) is presently being sanctioned as the first installment.

Non-Recurring Grant for Two years	Amount (Rs)	Recurring grant	1 <sup>st</sup> Year Amount	2 <sup>nd</sup> Year Amount
Books & Journals	10000	Contingency	7500	7500
Equipment	110000	Special Needs	0	0
		Travel/Field work	2500	2500
		Chemicals	15000	15000
		Others	0	0
<b>Total (Rs.)</b>	<b>120000</b>		<b>25000</b>	<b>25000</b>

**Total amount for the project: 170000/-**

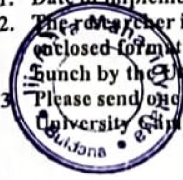
The grant is subject to the terms and conditions as mentioned below.

1. A Certificate of Acceptance of the conditions governing the research project should be sent immediately to this office.
2. The amount of the grant shall be drawn by the Accounts Officer (D.D.O), University Grants Commission on the grant-in-aid bill and shall be disbursed to and credited to the above-mentioned institute through Cheque/D.D.
3. The sanctioned amount is debatable to the major Head 5.3.3. and is valid for payment during the financial year 2009 -2010 only.
4. The grant is subject to adjustment on the basis of Utilization Certificate in prescribed proforma submitted by University/College/Institute.

**NOTE:**

1. Date of implementation will be the date of sanction of first installment.
2. The teacher is required to submit an Acceptance Certificate of the project in the enclosed format to the affiliating university, which would then be sent to UGC (WRO) in a pouch by the University.
3. Please send one copy of the project sanction report to Director, INFLIBNET, Gujarat University Campus, Navrangpura, Ahmedabad for record.

*b Nimje*  
*25/11/09*





विश्वविद्यालय अनुदान आयोग  
University Grants Commission  
मानव संसाधन विकास मंत्रालय, भारत सरकार  
Ministry of Human Resource Development, Govt. of India  
पश्चिम विभागीय कार्यालय गणेशखिंड, पुणे- ४११००९  
Western Regional Office, Ganeshkhind, Pune – 411007.

Ph: 020 – 25696897, Fax: 020 – 25691477

Website- www.ugc.ac.in

Email: mrpugcwro@gmail.com

Dated: 1 SEP 2017

F. No. 47-1238/09(WRO)

THE PRINCIPAL,  
JIJAMATA MAHAVIDYALAYA, CHIKHALI  
ROAD, BULDANA, PIN- 443001.

**Subject: NOC/ Completion of Minor Research Project of Prof. Nimje S. S. in Physics.**

Sir/Madam,

Please refer to your letter no. 173/15-16 dated 31.08.15, regarding the Minor Research Project awarded to Prof. Nimje S. S. in the subject of "Physics" of your College. I am to inform you that the Minor Research Project titled "To Synthesize and study the structural, Electrical and Magnetic Properties .." sanctioned by the UGC (WRO), may be treated as finalized and settled as per final report /utilization certificates submitted by the College.

	UGC Allocation	Total Grant Released	Total Exp. Incurred
Non-Recurring	120000	120000	120572
Recurring	50000	25000	50375
All Total	170000	145000	170947*

\*Audited UC/SE is not submitted within six months from the date of completion of the project. Hence the balance amount is not admissible as per UGC Guidelines.

Yours faithfully,

(Dr. G. Srinivas)  
Joint Secretary

Copy to:

1. PROF. NIMJE S. S.  
JIJAMATA MAHAVIDYALAYA, CHIKHALI ROAD,  
BULDANA, PIN- 443001.
2. DIRECTOR (BCUD), SANT GADGE BABA AMRAYATI  
UNIVERSITY, CAMP AREA, NEAR TAPOVAN GATE,  
AMRAYATI, PIN- 443001.
3. DIRECTOR, HIGHER EDUCATION, CENTRAL BUILDING,  
NEAR PUNE RAILWAY STATION, PUNE, PIN- 411001.
4. GUARD FILE

(Dr. G. Srinivas)  
Joint Secretary



Principal  
Jijamata Mahavidyalaya  
Buldana



## Project Completion Certificate

This is to certify that the Minor Research Project entitled  
“To Synthesis and study of Structural, Electrical & Magnetic properties of Ni<sup>2+</sup>  
substituted nanostructured ferrites” file no 47-1238/09(WRO) has been  
completed by Prof.Mrs. S. S. Nimje and submitted the instruments and books  
of this MRP to this College.



*S.S. Nimje*

PRINCIPAL  
JIJAMATA MAHAVIDYALAYA,  
BULDANA (MAHARASHTRA)

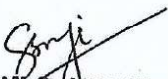
*S.S. Nimje*  
Principal  
Jijamata Mahavidyalaya  
Buldana




To,  
The Under Secretary (FD-III)  
University Grants Commission  
Bahadur Shah Zafar Marg,  
New Delhi - 110 002

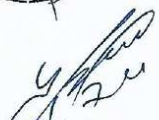
UTILIZATION CERTIFICATE

Certified that the grant of Rs.1,70,000/- (One Lacs Seventy Thousand Rupees Only) received from the University Grants Commission under the scheme of support for Minor Research Project entitled "To synthesize and study the structural, Electrical, Magnetic Properties of Ni<sup>2+</sup> Substituted Nanostructured Ferrites" vide UGC letter No. F.No.47-1238/09 (WRO) Dated 17.11.2009 has been fully utilized for the purpose for which it was sanctioned and in accordance with the terms and conditions laid down by the University Grants Commission.

  
**SHALINI PRASAD**  
Principal  
Jijamata Mahavidyalaya,  
Buldana  
Signature of the Principal  
Investigator

  
**Principal**  
Jijamata Mahavidyalaya,  
Buldana



  
**Principal**  
Jijamata Mahavidyalaya,  
Buldana





UNIVERSITY GRANTS COMMISSION  
BAHADUR SHAH ZAFAR MARG  
NEW DELHI - 110 002

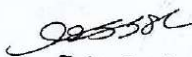
FINAL REPORT OF THE WORK DONE OF THE PROJECT

1. Project Report No. - Final
2. Name and address of the Investigator - Sau. SHALINI S. NIMJE
3. Name and address of Institution - Jijamata Mahavidyalaya Buldana  
Department of Physics Buldana
4. UGC approval No and Date - 47-1238/09 (WRO) Dated 17-11-2009
5. Title of Research Project - "To Synthesis & Study of Structural, Electrical  
& Magnetic Properties of Ni<sup>2+</sup> Substituted  
Nano Structured Ferrites"
6. Date of Implementation - 17-11-2009
7. Total Grant Sanctioned - Rs.1,70,000/-
8. Total Grand Received - Rs.1,45,000/-
9. Final Expenditure - Rs 1,70,947/-
10. Objectives of the Project - Details in final Progress Report
11. Achievements from the Project - Details in final Progress Report
12. Any other information - No

  
Investigator  
SHALINI S. NIMJE  
Associate Professor  
Jijamata Mahavidyalaya,  
Buldana

  
Principal  
Jijamata Mahavidyalaya  
Buldana

  
Principal  
Jijamata Mahavidyalaya,  
Buldana.(Maharashtra)

  
Principal  
Jijamata Mahavidyalaya,  
Buldana.(Maharashtra)



क्रमांक-विमबु/173/2015-2016  
बुलढाणा दिनांक 31/08/2015

To,

Under Secretary,  
University Grant Commission  
Bahadur Shah Zafar Marg,  
New Delhi 110002

Subject :- Submission of Minor Research Project

Respected sir,

According to your reference Letter File No 47-1238/09 (WRO), Dated 17.11.2009 Prof. Sau. S.S.Nimje, Department of Physics have completed her Minor Research Project entitled "To synthesize and study the structural, Electrical, Magnetic Properties of Ni<sup>2+</sup> Substituted Nanostructured Ferrites". And hence submitting the copies along with following enclosures.

- 1) Utilization Certificate
- 2) Project Completion Report
- 3) Statement of Expenditure
- 4) Assets Certificate
- 5) Accession Certificate
- 6) Audited Statement
- 7) Final report of the work done on MRP.

Signature of Principal Investigator  
Associate Professor  
Jijamata Mahavidyalaya,  
Prof. S.S.Nimje

Department of Physics  
Associate Professor  
Jijamata Mahavidyalaya, Buldana

Signature of Principal  
Jijamata Mahavidyalaya,  
Buldana.(Maharashtra)

Principal  
Jijamata Mahavidyalaya,  
Buldana.(Maharashtra)



Principal  
Jijamata Mahavidyalaya  
Buldana



**STATEMENT OF EXPENDITURE**

Name of Investigator - **Sau. SHALINI S. NIMJE**

Name and address of Institutaion - **Jijamata Mahavidyalaya Buldana**  
 Department of Physics Buldana

Date of Starting of Project - **17-11-2009**

Date of completion of project - **30-06-2013**

Heads	Sanctioned Amount	Received Amount	Actual Expenditure (Incurred Rs)
Books & Journals	10000/-	10000/-	10038/-
Equipment	1,10,000/-	1,10,000/-	1,10,534/-
Chemicals	30,000/-	15,000/-	30,200/-
Contingencies	15,000/-	7,500/-	15,095/-
Travels	5,000/-	2,500/-	5,080/-
Sp. Needs	00	00	00
Other	00	00	00
<b>Total</b>	<b>1,70,000/-</b>	<b>1,45,000/-</b>	<b>1,70,947/-</b>

*S.S.N.*  
 Jijamata Mahavidyalaya  
 Signature of Principal  
 Jijamata Mahavidyalaya  
 Buldana (Maharashtra)



*S.N.*  
 Investigator



Signature of Investigator with seal

*S.S.N.*  
 Principal  
 Jijamata Mahavidyalaya  
 Buldana

Name of Investigator :- Sau. Shalini S. Nimje  
 Minor Research Project :- Department of Physics  
 Letter no :- 47-1238/09 (WRO) Dated 17-11-2009

**Audited Statement of Expenditure**

Sr No	Non Recurring grant for Two years	Amount Sanctioned in Rs	Expenditure	Sr No	Recurring grant	1 <sup>st</sup> year amount sanctioned in Rs	2 <sup>nd</sup> Year amount sanctioned in Rs	Total Expenditure
1	Books & Journal	10000/-	10038/-	1	Chemicals	15000/-	15000/-	30200/-
2	Equipment	110000/-	110534/-	2	Contingency	7500/-	7500/-	15095/-
				3	Special Needs	00	00	00
				4	Travel/Field work	2500/-	2500/-	5080/-
				5	Extension Activites	00	00	00
	<b>Total</b>	<b>120000/-</b>	<b>120572/-</b>		<b>Total</b>	<b>25000/-</b>	<b>25000/-</b>	<b>50375/-</b>

Total Amount :- 1,70,947/-

Signature of Principal  
 Jijamata Mahavidyalaya  
 Buldana.



Investigator  
 SHALINI S. NIMJE  
 Associate Professor  
 Jijamata Mahavidyalaya  
 Buldana.

Principal  
 Jijamata Mahavidyalaya  
 Buldana



Signature with seal



### Summary of the MRP

**Title :- To synthesis and study the structural, electrical and magnetic properties of Ni<sup>2+</sup> substituted Nano structured Ferrites.**

**There are three objectives :-**

- 1) To Synthesis and prepare Nano Structured Ferrites.
- 2) To study their structural properties and magnetic properties. & Electrical Properties
- 3) To study To study X-ray diffraction pattern Lattice Parameter, Cation Distribution,

I feel very happy and contended to state that the research study is successfully completed due to my sincere efforts and co-operation.

Ferrites have high electrical resistivity. Ferrites possesses ferimagnetic properties (Fe<sub>3</sub>O<sub>4</sub> i.e. magnetic moments of adjacent atoms are antiparallel but of unequal strength. I have confirmed the ferrites are magnetic oxides containing iron oxide as their main component of crystal structure.

Many systems of Ni<sup>2+</sup> substitute ferrites have synthesized by using co-precipitation method and it has shown the formation of X-ray diffractions photograph and also I have obtained the lattice parameter X-ray density cation distribution.

In the magnetic properties it has confirmed the magnetic moment experimental and theoretical value of magnetic moment are nearly equal.

FTIR studies the cations exchange between A side and B side. The line width decreases with increase in Ni content.

The X-ray diffraction XRD analysis was perform on Siemens diffracto meter by using the  $k\alpha$  radiations.

Intensity data was collected over a  $2\theta$  range of  $20^{\circ}$ - $70^{\circ}$ . The average particles size of the prepared Ni<sup>2+</sup> nano particle was determined to be 23 to 40 Nm from XRD Pattern.




*[Handwritten Signature]*  
Principal  
Jijamata Mahavidyalaya  
Buldhana


Ni<sup>2+</sup> substituted nano structured ferrites was prepared by using co-precipitation or sol gel method. The X-ray analysis was confirmed the single phase and these nano crystals was characterized by XRD. The Lattice parameter was found to increase linearly with composition Ni. I have also calculated X-ray density cation distribution and also found Nano sized particle. IR spectra of nano structured ferrites system have been analysed in the frequency range.

In magnetic properties saturation magnetization measurement exhibit collinear ferri magnetic structure for the sample with X=0.2 and magnetic moment i.e. theoretical and calculated are nearly equal and a.c susceptibility of the polycrystalline sample as a function of temperature was measured at room temperature.

In electrical properties the dielectric measurement at room temperature was carried out by two probe method by using LCR Q meter in the frequency range. It can be seen that the dielectric constant decreases as frequency increases and a.c resistivity also decreases as frequency increases and  $\tan\Delta$  also decreases with high frequency.

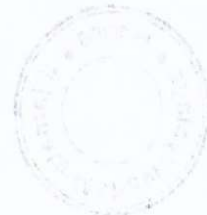
Principal

  
Principal,  
Jijamata Mahavidyalaya,  
Buldana.(Maharashtra)

  
SHALINI S. NIMJE  
Associate Professor  
Principal Investigator  
Jijamata Mahavidyalaya,  
Buldana.



  
Principal  
Jijamata Mahavidyalaya  
Buldana



### 3. Dr. S. N. Gawai

University Grants Commission  
Western Regional Office  
Ganeshkhind, Pune – 411007

Phones: (020) 25691477,  
25691178, 25696897  
Fax: (020) 25691477  
Web site: www.ugc.ac.in

File No: 23-1017/09 (WRO)

The Accounts Officer  
University Grants Commission  
Ganeshkhind, Pune-411007

2 SEP 2009

**Subject: Financial assistance to college teachers for undertaking Minor Research Projects –  
Release of first installment.**

Sir,

The UGC on the recommendations of the Expert Committee has approved the Minor Research Project entitled "A critical study of the economic and social work of women's savings group in khamgaon tahsil." in the subject- Commerce to be undertaken by Prof. Gawai S.N., Jijamata Mahavidyalaya, Buldana, Buldana (Vidarbha)- 443001. The financial assistance of the UGC would be limited to Rs. 40000/- (Rupees Forty thousand Only) for a period of two years. An amount of Rs. 22500/- (Rupees Only) is presently being sanctioned as the first installment.

Non-Recurring Grant for Two years	Amount (Rs)	Recurring grant	1 <sup>st</sup> Year Amount	2 <sup>nd</sup> Year Amount
Books & Journals	5000	Contingency	7500	7500
Equipment	0	Special Needs	0	0
		Travel/Field work	10000	10000
		Chemicals	0	0
		Others	0	0
<b>Total (Rs.)</b>	<b>5000</b>		<b>17500</b>	<b>17500</b>

**Total amount for the project: 40000/-**

The grant is subject to the terms and conditions as mentioned below.

1. A Certificate of Acceptance of the conditions governing the research project should be sent immediately to this office.
2. The amount of the grant shall be drawn by the Accounts Officer (D.D.O), University Grants Commission on the grant-in-aid bill and shall be disbursed to and credited to the above-mentioned institute through Cheque/D.D.
3. The sanctioned amount is debatable to the major Head 5.3.3. and is valid for payment during the financial year 2009 -2010 only.
4. The grant is subject to adjustment on the basis of Utilization Certificate in prescribed proforma submitted by University/College/Institute.

**NOTE:**

1. Date of implementation will be the date of sanction of first installment.
2. The researcher is required to submit an Acceptance Certificate of the project in the enclosed format to the affiliating university, which would then be sent to UGC (WRO) in a bunch by the University.
3. Please send one copy of the project completion report to Director, INFLIBNET, Gujarat University Campus, Navrangpura, Ahmedabad for record.





ज्ञान-विज्ञान विभूक्तये



सत्यमेव जयते

विश्वविद्यालय अनुदान आयोग  
University Grants Commission  
मानव संसाधन विकास मंत्रालय, भारत सरकार  
Ministry of Human Resource Development, Govt. of India  
पश्चिम विभागीय कार्यालय गणेशखिंद, पुणे- ४११००७  
Western Regional Office, Ganeshkhind, Pune - 411007.

Ph: 020 - 25696897, Fax: 020 - 25691477  
Website- www.ugc.ac.in  
Email: mrpugcwro@gmail.com

F. No. 23-1017/09 (WRO)

26 FEB 2020

February 2020

THE PRINCIPAL,  
JJAMATA MAHAVIDYALAYA,  
CHIKHALI ROAD, BULDANA, PIN- 443001.

Subject: **NOC/ finalization of Minor Research Project awarded to Prof. Gawai S. N. in the Subject of Commerce.**

Sir/Madam,

Please refer to your letter no. **168/15-16** dated **28.08.15**, regarding the Minor Research Project awarded to Prof. Gawai S. N. of your College in the subject of "Commerce". I am to inform you that the account of Minor Research Project titled "A critical study of the economic and social work of women's savings group in khangaon tahsil." sanctioned by the UGC (WRO), may be treated as finalized and settled as per final report /utilization certificates submitted by the College.

Heads	UGC Allocation	I <sup>st</sup> & II <sup>nd</sup> Inst. Grants already released	Total Exp. Incurred (as reported by College)	Inadmissible amount, if any	Grants proposed to be released as Final Inst/ Adjustment
<b>Non-Rec:</b>					
Books/ Journals	5000	5000	5287		0
Equipment	0	0	0		0
<b>Total- I</b>	<b>5000</b>	<b>5000</b>	<b>5287</b>		<b>0</b>
<b>Rec:</b>					
Contingency	15000	7500	15117		7500
Special Needs	0	0	0		0
Travel	20000	10000	21120	5720*	5400
Chemicals	0	0	0		0
Other	0	0	0		0
<b>Total- II</b>	<b>35000</b>	<b>17500</b>	<b>36237</b>	<b>5720</b>	<b>12900</b>
<b>All Total I &amp; II</b>	<b>40000</b>	<b>22500</b>	<b>41524</b>	<b>5720</b>	<b>12900**</b>

\* Rs. 5720/- incurred on travelling expenditure etc. is not admissible as per prescribed guidelines.

\*\* As the Audited UC/SE was not submitted within six months from the date of completion of the project.

It would be highly appreciated if you kindly submit the Feedback Form enclosed herewith.

Yours faithfully,

*R Mang Kumar*  
(Dr. R. Manoj Kumar)  
Joint Secretary

Encl: As Above

Copy to:

1. **PROF. GAWAI S. N., JJAMATA MAHAVIDYALAYA, CHIKHALI ROAD, BULDANA, PIN- 443001.**
2. REGISTRAR, SANT GADGE BABA AMRAVATI UNIVERSITY, CAMP AREA, NEAR TAPOVAN GATE, AMRAVATI, PIN-444602.
3. DIRECTOR, HIGHER EDUCATION, CENTRAL BUILDING, NEAR PUNE RAILWAY STATION, PUNE, PIN- 411001.
4. ACCOUNTANT GENERAL, MAHARASHTRA STATE, 101, MAHARSHI KARVE MARG, MUMBAI- 400020
5. GUARD FILE

*Vinod Singh Yadav*  
(Vinod Singh Yadav)  
Education Officer

Sr. No.	396
P.T.	NIL

