

**Academic Information detail from Sep 2013 to December 2014 by**

**Dr. Rakesh Kumar Singh,**

**Asst. Professor cum Prof. Incharge-Establishment**

**Aryabhata Centre for Nanoscience & Nanotechnology, Aryabhata knowledge University, Patna**

**Reference:**

**Research Project Submitted in March 2014, Sponsored by UGC:**

Title of the Research Project : Study of composition and annealing temperature effect on structural, electrical and magnetic properties of some rare earth ions substituted Ferrite **Nanoparticles**.

UGC approval No. : **F.PSB-43/11-12(ERO)**

**Publication in International/ National Journal/ Proceeding**

1. Modification of Photoconductivity and PL spectrum of ZnO **nanoparticles** through codoping with Sr and Cd, The Journal of Physics, **Photon** an **International** Journal 107(2013)160-167, ,
2. Study of Structural and Optoelectronic Properties of ZnO Codoped with Ca and Mg **Hindawi** Publishing Corporation Indian Journal of **Materials Science** Volume 2013, Article ID 405147 (2014)p.1-6 <http://dx.doi.org/10.1155/2013/405147>,
3. Synthesis of NiFe<sub>2</sub>O<sub>4</sub> and MgFe<sub>2</sub>O<sub>4</sub> **nanoparticles** through citrate precursor method, annealed at 650C and study their structural & Magnetic properties, proceeding of National conference, VVIT, **ISBN-978-81-925776-9-2**, (2014)p.72-74.
4. Structural, Magnetic & Dielectric behavior of Ni<sub>0.5</sub>Zn<sub>0.5</sub>Fe<sub>1.99</sub>R<sub>0.01</sub>O<sub>4</sub> **Nanoparticles**; R= Pr, Sm and Gd, synthesized using Citrate Precursor method, annealed at low temperature 450C, **International journal of Engineering & technical research**,2(2014)125-130.
5. The structural, electrical and magnetic properties of perovskite (1-x)Ba Fe<sub>1/2</sub>Nb<sub>1/2</sub>O<sub>3</sub>-xBaTiO<sub>3</sub> ceramics, **J.Advanced Materials Letters**, DOI-10.5185/amlett.2013 fdm.28(2013)

6. Low dielectric loss of Mg doped Ni–Cu–Zn nano-ferrites **Nanoparticles** for **power applications**, **Applied Surface Science** , Elsevier, Volume 258, Issue 14, (2014), P. 5342–5347
7. Synthesis, Structural and Magnetic properties of  $Ni_{0.8}M_{0.2}Fe_2O_4$  (M=Co,Cu) **nanoparticles** synthesized by Citrate Precursor Method, Explore, Vol. V, (2013)p.7.
8. Synthesis and effect of annealing temperature on structural and magnetic properties of  $Ni_{0.75}Zn_{0.25}Fe_2O_4$  and  $Ni_{0.25}Zn_{0.75}Fe_2O_4$  **Nanopowder**, annealed at temperature 550C, 650C and 700C, **IRIS, J. of Young Scientist**, Vol.3( 2014)p.6-11.
9. Creating interest in Physics Learning and Developing Scientific Temper through low cost - no cost Demonstrations, Proceeding National. Conference on **Educational technology in teaching and learning: Prospects and Challenges**,(2013)p.77-82, **ISBN-978-81-927627-1-5**.
10. Structural, Magnetic and Dielectric behavior of  $Ni_{0.5}Zn_{0.5}Fe_{1.99}R_{0.01}O_4$  ; R=Gd, Pr and Sm, synthesized using Citrate precursor method, annealed at 450C, **IJETR(2014)p.125-130-International journal of Engineering and technical Research**.

**Note-1.**Paper published/accepted in Journal **Impact factor** (2.206, 1.786& 1.413) **ICV value**( 4.27, 5.21& 3.29)

2. Detail of academic activities published in **Annual report of AKU**, year 2013-2014

#### **Abstract Published/ presented papers in International/ National Conferences.**

11. Modification in photoconductivity of ZnO nanoparticles due to co-doping with Sr and Mg prepared by chemical method, **International Conference on Nanoscience and Nanotechnology-2013, Central university of Lucknow**, P.235
12. Change in structural, Optical and Photoconductivity properties of ZnO nanoparticles due to co-doping with Sr and Ca and made by chemical method, **National Conf. On Emerging Trends in Condensed matter Physics**, Jan-2014, P. 17.
13. Low temperature synthesis of Barium hexa ferrite nanoparticles using Citrate precursor method , in **11<sup>th</sup> International Quadrennial European Symposium** on Thermal Analysis and Calorimetry at the **Helsinki, Finland** on **August 14, 2014**
14. Some Possible applications of ferrite nanoparticles, **International conference** on Science & Technology (BSC-2015), 24<sup>th</sup> Dec. 2014, P.

15. Magnetic and Photoluminescence studies of Some ferrite **nanoparticles** , 2014, Natn. Conf. On photonic, **IIT Patna**, P.



Delivering a lecture at **IIT Kanpur** as **Resource person** (teachers workshop)

Inspired lecture for research at J.P.Univ, Chapra in a programme of DST-Govt. of India

[Research papers are in progress for publication in International journal \(1<sup>st</sup> page is attached\)](#)

16. Structural, Magnetic and dielectric properties of  $\text{Ni}_{0.5}\text{Zn}_{0.03}\text{Fe}_{1.97}\text{R}_{0.05}\text{O}_4$  **Nanoparticles**; R= Pr, La, Sm and Gd, synthesized using Citrate Precursor method, annealed at low temperature  $450^\circ\text{C}$ ., **International Journal of Magn. Mater.**(**Feb.2015**)

17. Effect of Zn and Cd on magnetic behaviour of Ni-Zn Nanoparticles, **International journal of Alloys and compound**(March 2015).

#### **Consultancy Services provided:**

Question paper Setter member of **Ph.D Examination 2014** of **Ranchi University, Jharkhand** ( Both English and Hindi medium)

#### [Other contributions in Research and Development](#)

1. Research Committee (**Managing Editor**) member of the **Journal . IRIS: Journal for Young Scientists**, ISSN. 2278-6384 (Online); ISSN.2278-618X (Print).
2. Research Committee (**Managing Editor**) member of the **Journal Explore: Journal of Research for Undergraduate and Post-Graduate students**, ISSN. 2278-6414(Online); ISSN. 2278-0297 (Print).



**Budding Scientist selection- Screening committee member, Kilkari, Dept. of Education, Govt. of Bihar**

## Seminars/ Conferences Organized

S.No	Name	Date and Venue	Responsible for
1	National seminar on” <b>Trends in Technological Development for Military Applications</b> ”VITM	18-19 jan 2014	<b>Organizing Committee Member</b>
2.	5 <sup>th</sup> Global Bihar Science Conference- 2013	16-18 Nov 2013 A.M.College Patna Magadh University	<b>Excutive Council cum Organizing Committee member</b>
3.	National Graduate Physics Examination-2014 of Indian Association of physics Teachers(IAPT)	19 <sup>th</sup> January 2014.	<b>Jt. Coordinator</b>
4.	21 <sup>st</sup> National Children Science Congress: <b>A Programme of Govt. of India on Focal theme “ Energy: Explore, Harness and Conserve”</b>	6 <sup>th</sup> Dec 2013 State council of educational research and training, <b>Dept. of Education, Govt. of Bihar,Patna</b>	<b>Valued guidance as a member of Evaluation committee member for the selection of national team( Bihar state awardee)</b>
5.	Science fair on “ <b>Indian Science and Scientists-Ancient and Modern” for College and University levels</b> Organized by- National Anvesika Anvesika Network of India- Coordinated by Prof. H.C.Verma, IITkanpur(Indian Association of Physics teachers)	5 <sup>th</sup> October 2013, Science College Patna University	<b>Joint. Progrmme Coordinator</b>
6.	6 <sup>th</sup> Global Bihar Science Conference-2014: An <b>International Conference on Science &amp; Technology</b>	22-25Dec. 2014	<b>Excutive Council cum Organizing Committee member</b>

## Refresher course/ orientation courses/ Seminars attended

S.No	Programme	Date	Venue	Organized by
1.	<b>Refresher course entitled “ Update of intellectual Property Rights”</b>	17 <sup>th</sup> Dec 2013	<b>Lucknow</b>	DST, Govt. of U.P
2.	in the <b>training cum orientation workshp on development of communication skills, computer Application and Stress busting proficiency</b>	12 <sup>th</sup> jan 2014	Aryabhatta Knowledge University, Patna	Aryabhatta Knowledge University, Patna and Institute of Engineers (India).
3.	National seminar on “ <b>Unpleasing Innovation”</b>	20-21 Sep 2013	Hotel Patliputra Ashok, Patna	Bihar State Innovation Council, <b>Dept. of Planning &amp; Development, Govt. of Bihar</b>
4.	NME-ICT Awareness Workshop	17 <sup>th</sup> Jan 2014	Patna Women’s College, Patna University	NIT Patna, MHRD, Govt. Of India
5.	Seminar on Full bright <b>Fellowship of USA for Indian citizen academicians</b>	4 <sup>th</sup> March 2014	A.N.College Patna	A.N.College Patna and <b>European Union knowledge exchange programme</b>

**Talk /Paper presented/ Lecture delivered as a Resource Person**

S. No	Topic of Lecture	Date	venue	Details
1.	Converging Technologies and 21 <sup>st</sup> Century	9 <sup>th</sup> jan 2014	M.M.College Patna University	In a one day <b>Research Exposure camp on nanotechnology under CPE-UGC scheme</b>
2.	Physics education and Global Recognition	30 <sup>th</sup> October 2013	J.D.College J.P.university Chapra	Innovation in Science Pursuit for Inspired Research(INSPIRE) of <b>DST, Govt. of India Programme</b>
3	Developing Scientific temper through low Cost/No cost experiments	28 <sup>th</sup> Sep 2013	A.N.College Patna	Innovation in Science Pursuit for Inspired Research(INSPIRE) of <b>DST, Govt. of India Programme</b>
4.	Synthesis of NiFe <sub>2</sub> O <sub>4</sub> and MgFe <sub>2</sub> O <sub>4</sub> nanoparticles through citrate precursor method, annealed at 650C and study their structural & Magnetic properties, proceeding of National conference,	14 <sup>th</sup> March 2014	V V I T Purnea	In National Conference of <b>Focal theme” Quality Education and Excellence in the field of Engineering and Research”</b>
5.	Physics and its scope: <b>Nanoworld to Universe</b>	26 <sup>th</sup> May 2014	<b>IIT kanpur</b>	In National workshop of Utsahi Physics Teachers, Organized by Dept. of Physics, IIT Kanpur
6.	Revitalization of Physics education, <b>Foster cutting edge research and Innovation in Science</b>	6-8 June 2014	<b>Kolkata</b>	Anvesika and <b>Senior resource person of IIT Kanpur of Utsahi Physics Teachers(utsahiphysicsteachers.com)</b>

## **Life Membership / Linkage of Learned Societies/ Academic bodies**

1. **Society for Scientific values, Delhi., coordinated by Padamshri Prof. K.L.Chopra, former Director-IIT kharagpur**

**Objective:** To promote objectivity, Integrity and Ethical values in all pursuits of Scientific research, Education and management.

2. **Science for Society Bihar, Member-NCSTC network, New Delhi.**

State level organization for producing Science & Technology Communication and **cutting edge research**

3. **The Art of Living foundation, India**

Promote human values, global peace and harmony through comprehensive seva project orientation courses and development programmes

4. **Magnetic Society of India (MSI), Hyderabad**

National organization to promote , encourage & Develop the growth of Magnetic materials, Components and Devices.

5. **Senior Resource Person of Utsahi Physics Teacher Group- of Prof. H. C.Verma, I.I.T Kanpur**

A group of teachers of India that advocates for experiment-assisted teaching and creating Scientific temper ( [www.utsahiphysicsteachers.com](http://www.utsahiphysicsteachers.com))

6. **Indian Association of Physics Teachers( Joint Secretary-Bihar State Unit) and Anvesika**

National level organization of Scientists, Teacher, Technocrats for Physics Education and its latest development

7. **Indian Science Congress**



Conducting **Teachers Workshop of Vaishali District of Bihar**, under the mentorship of **Prof. H.C.Verma, IIT Kanpur** and **Prof. Rajmani Pd Sinha(Higher education council member, Govt.of Bihar( on the dias), on the topic- Nurturing fundamental science for research and sustainable development.**



## Contribution of faculty to the corporate life of AKU/ Other contributions

1. At present Dr. Rakesh Kuma Singh is an **Asst. Prof cum Prof. In charge-Establishment** of Centre for Nanoscience & Nanotechnology of Aryabhatta Knowledge University Patna AND LOOKING DIFFERENT AFFAIRS OF DEVELOPMENT , PLANNING WORK OF **ACNN AS WELL AS AKU ALONG WITH M.TECH & PH.D TEACHING - RESEARCH** IN NANOSCIENCE & TECHNOLOGY AND OTHER ACADEMIC OUTREACH PROGRAMME.
2. **Engagement of Work comprise in following parts:**
  - A. **M.Tech and Ph.D** programme Initiative in **Nanoscience, Education, Engineering and Medical Sciences( 45 days full time engaged in preparation, printing, distribution and counseling programme of entrance cum admission test.)**.
  - B. Library enrichment Plan and its Development of ACNN, AKU, Patna
  - C. Infrastructure Plan and Its developemrnt of ACNN, AKU( Place for siting, display board of ACNN, class romm etc.)
  - D. Preparation of Technical specification of **about 25 equipments of about 10 crore and** Contacting scientific person/organization.
  - E. Completing syllabus of M.Tech & Ph.D programme-First semester (**Students Class room note-book phocopy is attached herewith-** p. ), preparation of syllabus & Questation papers, conducting Mid semester & End semester Examinations, Evaluation of their answer sheets.
  - F. Preparation of DSIR certificate documents & Annual report of AKU.
  - G. Tender documents preparation, Advertize tender, Open tender and purchase order of equipments processes.
  - H. Staff recruitment(Teaching , non-teaching and technical staff) process.
  - I. **Engage as a member of following committee: Tender opening committee** of AKU, M.Tech & Ph.D. regulation programme of Nanoscience, **Local purchase committee** of ACNN, **BTA system**, Interview committee member of admission in M.Tech & Ph.D programme of ACNN, Ph.D programme answer sheets of nanoscience, Medical science and engineering science evaluator, **Interview committee member of Psychological and computational work** of technical staff member appointment in ACNN, AKU, preparation of budget documents of ACNN, **Board of governance member of Ambedkar Institute of Higher education**( AKU representative), **Inspection committee member** of Gaya College Gaya-community College,
  - J. **First Convocation- one of the nodal officer**(for First Convocation which was scheduled to be held on 20<sup>th</sup> Oct 2013, 22<sup>nd</sup> Dec 2013 and 23<sup>rd</sup> Feb 2014.

- K. **Organizing committee member** of : National seminar on Role of nanoscience & nanotechnology for the development of Bihar, Talk of Dr. K.Ogura, a Scientist from Jeol, Japan on the topic “ promises and Application of the SEM, Dr. R.K.Sinha, CSIR New Delhi, Dr. Animesh Jha, University of Leeds, England, Talk on Thermal analysis of nanomaterials by Prof. R.K.Verma, Pro-Vice-chancellor, Patna University, Workshop on stress management in June-2014,

### **Mentors (References):**

1. **Dr.(Sister) Doris D’Souza, Principal, Patna Women’s college, Patna university**
2. **Prof. H.C.Verma, Dept. of Physics, IIT Kanpur**
3. Prof. Asheshwar Yadav, Former V.C, B.R.B.U, Muzaffarpur
4. **Sri V.S.Dubey, Former V.C, Nalanda Open University Patna**
5. Dr. Amarendra narayan, Dept. of Physics, Patna University
6. **Prof. K.L.Chopra (Padam sri), former Director, IIT kharagpur**
7. Prof. S.P.Verma, Ex-University Prof. & head, Dept. of Physics, Science College, Patna University
8. **Prof. Rajmani Pd Sinha, higher education council member, HRD, Govt. of Bihar**
9. Prof. R.B.Singh, V.C, Nalanda Open University Patna
10. Prof. Avinash C.Pandey, director, nanotechnology application Centre, University of Allahabad( At present - Vice-chancellor, University of Jhansi)
11. Prof. R.K.Verma, Pro-Vice chancellor, Patna University
12. Prof. Dolly Sinha, Principal, Magadh Mahila College, Patna University

Information and feedback (from 2<sup>nd</sup> Sep 2013 to March 2016) Submitted By-

**Dr.Rakesh kumar Singh**

**Asst. Professor cum Establishment officer, ACNN, AKU**

**of**

**Establishment & general administrative responsibility**

**&**

**Curricular Aspect, Teaching-learning & Evalution, Research, Consultancy and**

**Extension, Governance & leadership, Innovative practices**

**(Date of Joining- 2<sup>nd</sup> September 2013).**

**Catogory I. Establishment progress work detail - Attached on page 1 and 2.**

**Catogory II.**

- 1. Research paper published/ Reported/ in Progress for Publication in International Journal :12**
- 2. Research paper published/ Reported/ in Progress for Publication in National Journal :06**
- 3. UGC-Minor Research Project submitted in March 2014 on rare-earth Nanoferrite : 01**
- 4. Patent work in progress :01**

**Catogory II.**

1. Research paper presented in **International** Conferences/Seminars : 03
- 2..Research paper presented in **National** Conferences/Seminars : 04
3. Talk delivered as **Resource person** in **International** Conferences/ Seminar : 01
4. Talk delivered as **Resource person** in **national** Conferences/ Seminar : 10
5. Talk delivered as **Resource person** in State level Conferences/ Seminar : 09

**Catogory III.**

1. No. of **International** Conferences/Seminars Organized :02
2. No. of **National** Conferences/Seminars Organized :05
3. No. of **State/Local level** Conferences//Academic innovative programmes Organized :15
5. No. of conferences/ training programmes/ workshop **attended** :15

**Catogory IV.**

- 1. Different Committee member of AKU and engage in :24**
- 2. Different Committee member of ACNN including, P.I-E :05**

**Formidable Task-**

1. World class interdisciplinary Nanoscience university center setup in addition to academic duty as an Assistant Professor of Nanoscience at ACNN, AKU.
2. Could not used my all C.L in years 2013, 2014 and 2015 due to active involvement in different affairs of Establishment of ACNN and different committee member of AKU. Also worked in D.P, summer vacation and Christmas like holidays.
3. Before joining to AKU, I was at Patna Women's College, Patna University (As an Asst. Prof.). Due to local linkage with IIT'S and scientific vendors/Persons/ Organizations, Scientific Establishment work of ACNN could be progressed.

**Note-** few Supporting documents are attached herewith