

Information and feedback (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

Research Project Submitted in May 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 (1st page attached)

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. Sm Iron Garnet **nanoparticles**, synthesis and high magnetization obtained through Citrate Precursor method, JTAC-Springer, **International Journal**, Reported (2014)
4. Effect of quenching on Ba-hexa ferrite nanoparticles and study their, Structural, thermal and Magnetic studies, JTAC-Springer, International Journal, reported(2014)
5. Synthesis of NiFe₂O₄ and MgFe₂O₄ 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.
6. Structural, Magnetic & Dielectric behavior of Ni_{0.5}Zn_{0.5}Fe_{1.99}R_{0.01}O₄ 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.
7. Cation distribution and dielectric relaxation in Ni-Zn ferrite nanomaterials and Low dielectric loss for power application, **J.of alloys and Compound**, jan. 2015(reported).
8. IRIS
9. Explore

Abstract Published of presented papers in International/ National Conferences

10. 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
11. 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.
12. R.K.verma
13. Some Possible applications of ferrite nanoparticles, International conference on Science & Technology(BSC-2015), 24th Dec. 2014, P.-----
14. IIT Patna- mail.

Research papers are in progress for publication in International journal (1st page is attached)

15. Rakesh Kr Singh, Chandan Upadhyay, Amarendra Narayan, Manoranjan Kar, R.K.Kotnala. 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°C., **International Journal of nanoscience & nanotechnology, Hinduai**
16. Rakesh Kr Singh, Amarendra narayan, M. Misra, Manoranjan Kar, Effect of Zn and Cd on magnetic behaviour of Ni-Zn Nanoparticles, International Journal of Science and technology(IJST).

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)

Seminars/ Conferences Organized

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

Refresher course/ orientation courses/ Seminars attended

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

Talk /Paper presented/ Lecture delivered as a Resource Person

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

Life Membership / Linkage of Learned Societies/ Academic bodies

1. Society for Scientific values, Delhi-

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 .

6. Indian Association of Physics Teachers and Anvesika

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

7. Indian Science Congress

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

- 1. At present Dr. Rakesh Kuma Singh is Asst. Prof cum Prof. In charge-Establishment of Centre for Nanoscience & Nanotechnology of Aryabhata Knowledge University Patna. AND LOOKING DIFFERENT AFFAIRS OF DEVELOPMENT AND PLANNING WORK OF ACNN AS WELL AS AKU ALONG WITH M.TECH & PH.D TEACHING AND RESEARCH IN NANOSCIENCE & TECHNOLOGY AND OTHER ACADEMIC CUM OUTREACH CONTRIBUTION OF GLOBAL KNOWLEDHE CREATION**

Engage in following work at AKU:

- Poster preparation of M.Tech /Ph.D programme in Nanoscience, Education, Enginnering & Medical Science research and its distribution , counselling in different Institutions of Patna and outside Patna(**15 days campaigning**)
- Vinyl board preparation of ACNN and arrangement of hanging with lightening on front of ACNN building, Preparation of book listing for ACNN library, Model questation paper preparation for M.Tech and Ph.D entrance test of ACNN, AKU(**8days Campaigning**)
- Coordinating in printing materials such as Invitation card, Convocation Magzine, V.C report, minute to minute programme, oath and pledge etc. for Ist

Convocation which was scheduled to be held on 20th oct 2013, 22nd Dec 2013 and 23rd Feb 2014. (**Approx one month engagement**)

Was a member of various committee

1. Refreshment committee(1st convocation-2013),
2. BTA system(core committee member)
3. Evalution of Answer books of the Pre-Ph.D/M.Tech programme in nanoscience, Engineering & medical science research
4. Interview committee member of Pre-Ph.D/ M.Tech in nanoscience
5. Interview committee member of Psychological and computational work of technical staff member appointment in ACNN, AKU
6. Tender committee member of AKU
7. Admission incharge of M.Tech /Ph.D programme in Nanoscience.
8. **Ornanizing committee member** of : National seminar on Role of nanoscience & nanotechnology for the developemnt 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.
9. Engage in quotations, technical specifications availability of instruments for nanoscience laboratory, Syllabus preparation, Teaching and Research programme for M.Tech and Ph.D programme, organizing workshop on stress management in summer vacation-2014

1. Dr.(Sister) Doris D'Souza, Principal, Patna Women's college, Patna university
2. Prof. H.C.Verma, 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



Delivering a lecture at **IIT Kanpur** as



Inspired lecture for research at J.P.Univ, Chapra

Resource person (teachers workshop)



Senior Resource Person Meet at Kolkata



Counselling session of Science Teachers
of +2 school of Bihar at Dept. of Zoology
Science College, Patna University

Information and feedback (from 2nd Sep 2013 to Dep. 2014) Submitted By-

Dr.Rakesh kumar Singh

Asst. Professor cum Establishment officer, ACNN, AKU

of

**Curricular Aspect, Teaching-learning & Evaluation, Research, Consultancy and Extension,
Governance & leadership, Innovative practices**

Catogory I.

1. **Research paper** published/ Reported/ in Progress for Publication in **International Journal** :08
2. **Research paper** published/ Reported/ in Progress for Publication in **National Journal** :02
3. **UGC-Minor Research Project** submitted in May 2014 on rare-earth **Nanoferrite** : 01

Catogory II.

1. Research paper presented in **International** Conferences/Seminars :03
2. Research paper presented in **National** Conferences/Seminars :02
3. Talk delivered as **Resource person** in **International** Conferences/ Seminar :01
4. Talk delivered as **Resource person** in **national** Conferences/ Seminar :05
5. Talk delivered as **Resource person** in State level Conferences/ Seminar :01

Catogory III.

1. No. of **International** Conferences/Seminars Organized :02
2. No. of **National** Conferences/Seminars Organized :01
3. No. of **State/Local level** Conferences//Academic innovative programmes Organized :10
4. Question setter of **Ph.D examination-2014 of Ranchi University, Jharkhand**
5. No. of conferences/ training programmes/ workshop **attended** :08

Catogory IV.

Formidable Task in which Physical movement required-(1.) Campaigning for Ph.D program in Nanoscience, Education, Engineering science/ Medical science(2) Procurement, technical specification and tender process of Equipment (3) Scientific tour/Participation of ACNN students, Library enrichment,(4) Money for establishment work for ACNN in 2014-2015 financial year, (5)1st Convocation of AKU, (6)Technical committee for equipment, (7)Technical board and display board of ACNN, (8)Annual report 2013-2014 of AKU, (9)Talk organized by different companies representatives for sophisticated research equipment, (10)Budget preparation/Tender materials for 2014-15 & 2015-2016 financial year.

Catogory V. Administrative Responsibilities:

Conducting Mid& End semester exam of M.Tech and Ph.D examination of ACNN, Procurement of equipments for teaching and Research, Tender committee member of AKU & ACNN, Faculty recruitment for ACNN in a year 2014, Anti-ragging committee member, Evaluator of answer sheet Pre-Ph.D/M.Tech entrance test-2013 of Nanoscience, Engineering science and Medical science, Interview committee member of M.Tech & Ph.D programme of nanoscience, Academic incharge of ACNN, BTA system member, Board of governance member of Ambedkar Institute of Higher education(AKU representative), Inspection committee member of Gaya College Gaya-community College, Expert committee member of psychological test in technical staff member recruitment of ACNN, one of the Nodal officer of 1st Convocation of AKU, Local purchase committee member of ACNN, Academic regulation committee member of M.Tech & Ph.D courses of ACNN,

Looking Different affairs of Establishment of ACNN and AKU along with academic work

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

Future Plan: Create a conducive atmosphere of **Nanoscience Research/ Fundamental science & Technology** so that it became a centre for knowledge creation for humanity in next 2 year **at Global level**

