

Application open for Aryabhata Centre for Nanoscience & Nanotechnology

ADMISSION NOTICE – 2022

M.Tech and Ph.D. in Nano Science and Technology

(First cutting edge research centre in University of Bihar as P.G. centre of Aryabhata Knowledge University, Patna)

Promoting Excellence in frontiers area of Research for Atma Nirbhar Bharat

Highlights:

- The Nano Science Department was first established by whole hearted support and encouragement from the Honourable Chief Minister of Bihar Shri Nitish Kumar Ji.
- 6 nanomaterial research laboratories of about 10 crore with 22 high-end research instruments such as Atomic force microscope, Scanning Electron Microscope, Multiferroic system, Vibrating sample Magnetometer etc. are well equipped and its impact is being felt globally.
- Faculty member and scholar of this research centre have published more than 150 research papers in Indexed/Scopus Journals. More than 100 eminent academician visited this academic centre.
- Thrust areas of research are – Nanotechnology in Food & Agriculture, Nanotechnology in Ayurvedic Science, Nano Electronics Magnetic nanomaterial's, Nano medicine, Nano-Biotechnology, Nanosilica from Rice husk (Agriculture waste), purification of water through Nanomaterial etc.

Eligibility: Science/Engineering/Technology Post graduate are eligible for Ph.D. programme and Engineering Graduates & Science Post-Graduate are eligible for M.Tech programme.

(Engineering graduates and Science post-graduates students except few branches are eligible to take admission)

Details of world class scientific infrastructure/research activities and admission details can also be seen on website:- www.acnn.akubihar.ac.in

Contact: For any support during the process, applicants may contact office on 8102926986/info@akubihar.ac.in; akuacnn@gmail.com



Hon'ble C.M, Sri Nitish Kumar Ji and Other Government Dignitaries Visited Nano Science & Technology Centre and appreciated the research activities and scientific infrastructure.

ARYABHATTA KNOWLEDGE UNIVERSITY, PATNA

Ordinance for Admission to M.Tech. (*Nano Science & Technology*) programme in the School of Engineering & Technology

Nomenclature:

This ordinance may be called as "Ordinance for Admission to M.Tech. (*Nano Science & Technology*) programme in the School of Engineering & Technology" of Aryabhata Knowledge University, Patna.

- O.1.** Eligibility for admission, admission policy and procedure shall be decided from time to time by the Court of the Aryabhata Knowledge University, Patna (AKU Patna) hereafter mentioned as University.
- O.2.** The normal duration of the M.Tech. (*Nano Science & Technology*) programme, including project work, shall be **four semesters** (two years). The duration can be extended to a maximum of six semesters (3 academic years). The maximum limit can be extended by 1 or 2 semester subject to the approval of university on case to case basis. Candidates may be permitted to do their project work in the industry and other approved organizations.
- O.3.** Award of M.Tech. (*Nano Science & Technology*) shall be in accordance with the regulations of the University.
- O.4.** The University will conduct this course at its headquarters and in any viable institutions affiliated to this University from the Session 2013.
- O.5.** The Court of the University has the right to modify any regulations stated from time to time.
- O.6. Admission:**
 - a. A candidate seeking admission to M.Tech. (*Nano Science & Technology*) Semester I must have:
 - i. Bachelor's degree in
Nanotechnology/Electrical/Mechanical/Electronics/
Instrumentation/Chemical/Biochemical Engineering/ Medical/Veterinary

Sciences or equivalent, with not less than or 60% aggregate marks for General Category and 55% for all reserved categories in the absolute system or equivalent grade.

OR

- ii. M.Sc. or equivalent degree in Physics/Chemistry/Electronics/Electronics Science/Material Science/ Nanoscience/Biotechnology/Agriculture, with not less than 55% aggregate marks for General Category and 50% for all reserved categories in the absolute system or equivalent grade.
- b. Candidates who have qualified for the award of the Bachelor's degree in Engineering / Technology or Master's degree in Science in above mentioned subjects through distance education/ correspondence mode are also eligible to apply for admission to the M.Tech. (*Nano Science & Technology*) programme.
- c. Notwithstanding what has been stated in **O.6a** above, applications from ***candidates sponsored*** by organizations recognized by the Court, and applications from ***foreign nationals*** received through proper channel, may be considered for admission to the M.Tech. (*Nano Science & Technology*) programme without ***University M.Tech. Entrance Test***. Their admission shall, however, be governed by the regulations prescribed by the Court.
- d. Candidates from Government / Public Sector Organizations with Associate Membership qualification (AMIE, AESI, AMIM, AMIChemE, AMIETE) and having two years of experience, can be permitted to apply for admission to M.Tech. (*Nano Science & Technology*) under sponsored programme without ***University M.Tech. Entrance Test***.
- e. The reservation of the seats for this course shall be as per the reservation rules of the Govt. of Bihar.
- f. Seats left unfulfilled in any of the reserved category by reason of the fact that eligible candidates are not available shall be filled up admitting applicants from amongst candidates available in other categories in order of ascending categories.

O.7. Disqualification:

No applicant shall be admitted to this course who has not applied for admission within the notified time.

- a. The admitted students will have to get themselves registered within a specified time notified by the university.
- b. No such applicant shall be admitted who in the opinion of the Vice Chancellor is not a fit candidate to be admitted to guard the best interest of the University.
- c. The admission of any student admitted to M.Tech. (*Nano Science &*

- Technology*) shall be cancelled if it is found at any later point of time that any document submitted or statement made by him/her in support of his/her admission is forged or false, the concerned student will be solely liable for the act.
- d. No candidate shall be allowed to register as a student in any course during the academic years of his/her study for M.Tech. (*Nano Science & Technology*).

Application Fee

Online fee of Rs. 1,500/- (One Thousand Five Hundred Only) & Rs. 500/- (Five hundred Only) for SC/ST candidates only.

Description of M.Tech Admission Test

Papers	Questions	Full Marks	Syllabus
PAPER-I	Multiple Choice questions 50	50	Multiple Choice questions on General Awareness.
PAPER-II	Multiple Choice questions 50	50	Multiple Choice questions in the subject concerned.

The written test comprising two papers of 50 marks each. Paper-I will consist of Multiple Choice questions on General Awareness. The paper – II will consist of Multiple Choice questions on the subject concerned (syllabus details can be seen on website).

- No negative marking for wrong answers.
- The question paper will be in English only.

ARYABHATTA KNOWLEDGE UNIVERSITY, PATNA

Ordinance for Admission to Ph.D. (*Nano Science & Technology*) program in the School of Engineering & Technology

Nomenclature:

This ordinance may be called as "Ordinance for Admission to Ph.D. (*Nano Science & Technology*) programme in the School of Engineering & Technology" of Aryabhata Knowledge University, Patna.

- O.1.** Eligibility for admission, admission policy and procedure shall be decided from time to time by the Court of the Aryabhata Knowledge University, Patna (AKU Patna) hereafter mentioned as University.
- O.2.** The normal duration of the Ph.D. (*Nano Science & Technology*) programme, including project work, shall be minimum **six semesters** (three years). The duration can be extended to a maximum of ten semesters (5 years). The maximum limit can be extended with the permission of competent authority on +1 and +1 year basis up to 7 years maximum. Candidates may be permitted to do their research project work in the industry and other approved organizations.
- O.3.** Award of Ph.D. (*Nano Science & Technology*) shall be in accordance with the regulations of the University.
- O.4.** The University will conduct this course at its headquarters and in any viable institutions affiliated to this University from the Session 2013.
- O.5.** The Court of the University has the right to modify any regulations stated from time to time.

O.6. Admission:

- a. At present there is only one possible categories of admission in Ph.D. (*Nano Science & Technology*) programme:
 - i. **Full-time doctoral students:** Such students are entirely focused on carrying out their coursework, research, and other requirements of the Ph.D. Program at the University or University recognized institutions.
- b. A candidate seeking admission to Ph.D. (*Nano Science & Technology*) should possess either i, ii or iii, to pursue research in nanoscience and nanotechnology:
 - i. M.E./ M.Tech./ M.S. or equivalent degree with a minimum of 55% marks in Nanotechnology/Electrical/Mechanical/Electronics/ Instrumentation/ Chemical/Biochemical Engineering.
 - ii. M.Sc. (Nanoscience/Nanotechnology) or an equivalent degree in any branch of Physical/Chemical/Material Science/Biological/Agricultural sciences with a minimum of 55% marks.
 - iii. Master degree in any branch of Medical (Allopathic, Ayurveda, Homeopathy or Unani)/ Veterinary sciences or an equivalent degree with a minimum of 55% marks.

- b. Candidates who have qualified for the award of the M.Sc. degree in Science in above mentioned subjects through distance education/ correspondence mode are also eligible to apply for admission to the Ph.D. (*Nano Science & Technology*) programme.
- c. Candidates having Master degree in Science/Engineering/Technology with a minimum of 55% marks and a valid UGC-NET or DST-INSPIRE score will be exempted from the **University Ph.D. Entrance Test**.
- d. The reservation of the seats for this course shall be as per the reservation rules of the Govt. of Bihar.
- e. Seats left unfulfilled in any of the reserved category by reason of the fact that eligible candidates are not available shall be filled up admitting applicants from amongst candidates available in other categories in order of ascending categories.
- f. The total number of seats for the Ph.D. (*Nano Science & Technology*) shall be notified time-to-time (includes reservation as per Government of Bihar norms).

O.7. Disqualification:

- a. No applicant shall be admitted to this course who has not applied for admission within the notified time.
- b. The admitted students will have to get themselves registered within a specified time notified by the university.
- c. No such applicant shall be admitted who in the opinion of the Vice Chancellor is not a fit candidate to be admitted to guard the best interest of the University.
- d. The admission of any student admitted to Ph.D. (*Nano Science & Technology*) shall be cancelled if it is found at any later point of time that any document submitted or statement made by him/her in support of his/her admission is forge or false, the concern student will be solely liable for the act.
- e. No candidate shall be allowed to register as a student in any course during the academic years of his/her study for Ph.D. (*Nano Science & Technology*).

Application Fee

Online fee of **Rs. 1,500/- (One Thousand Five Hundred Only) & Rs. 500/- (Five hundred Only) for SC/ST candidates only.**

Description of Ph.D. Admission Test (PAT)

Papers	Questions	Full Marks	Syllabus
PAPER-I	Multiple Choice questions 50	100	Multiple Choice questions on qualitative, teaching and research aptitude
PAPER-II	Long 3	60	Subjective type in the subject concerned
	Short 5	40	

The PAT is a written test comprising two papers of 100 marks each. Paper-I will consist of Multiple Choice questions on qualitative, teaching and research aptitude. The paper – II will be subjective type in the subject concerned (syllabus similar to CSIR UGC NET).

- No negative marking for wrong answers.
- The question paper will be in English only.

Some Frontiers Interdisciplinary Nanomaterials Research Activities (Details can be seen- www.acnn.akubihar.ac.in):



Ceramics electronics Nanomaterials

Production of Red color Turmeric Nanopowder



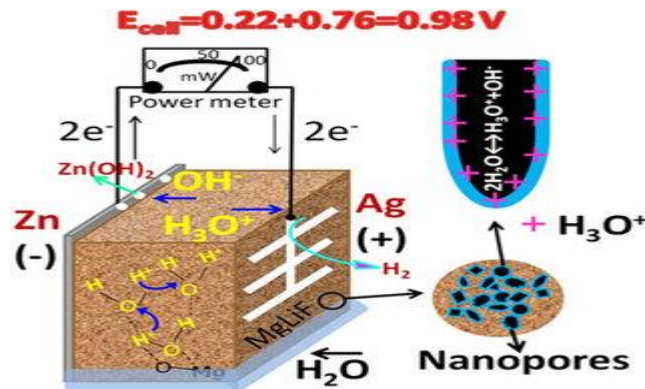
Silica Nanomaterials from Rice husk



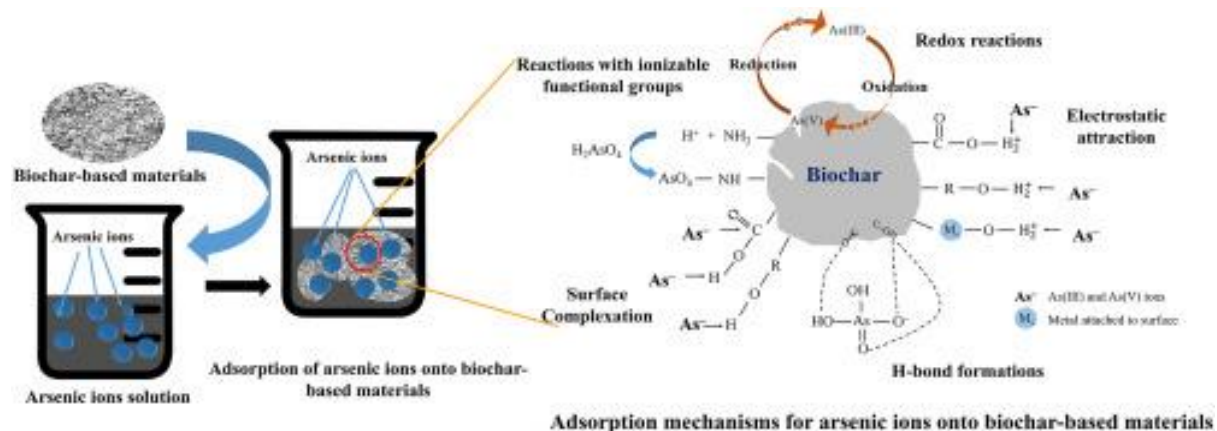
Superfine Nanoscale Food powder ,



Nanomedicine



Hydroelectric Shell invented (Great Invention of 21st Century) by Hon'ble Dr. R K Kotnala of CSIR-NPL, Delhi. Dr. Rakesh Kr Singh and his Ph.D. students, are working in collaboration with Dr. Kotnala Sir.



Adsorption mechanisms for arsenic ions onto biochar-based materials

Research Activities on Purification of water through nanomaterials