



**Department of Metallurgical and Materials Engineering
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL**

Advertisement for Junior Research Fellow (JRF)

Applications are invited for the position of Junior Research Fellow (JRF) in a research and development project (**Ref. No. GNFA/4500004877**) with following details:

Title of the project: Synthesis of Silver Nanoparticles at laboratory scale and further scaling up to pilot scale at HZL.

Principal Investigator:

Dr. Mohammad Rizwanur Rahman,
Assistant Professor,
Department of Metallurgical and Materials Engineering,
National Institute of Technology Karnataka, Surathkal
Mangalore-575025,
Karnataka.
Ph: +91 8884555351
Email: rizwan@nitk.edu.in

Name of the position: Junior Research Fellow (JRF)

No. of Position/Vacancy: 01 (One)

Qualifications:

Metallurgical and Materials Engineering, Electronics and Communication Engineering, Nanotechnology and Mechanical Engineering Stream

Essential Qualifications:- B.E/B.Tech in Metallurgical and Materials Engineering, Electronics and Communication Engineering, Nanotechnology and Mechanical Engineering with a minimum of 60% aggregate score (6.5/10 CGPA) and M.Tech/M.E in Metallurgical and Materials Engineering, Electronics and Communication Engineering, Nanotechnology and Mechanical Engineering /Related branches with a minimum of 60% aggregate score (6.5/10 CGPA). A good GATE score will be an added advantage but not mandatory. Those who are appearing for M.Tech/ M.E last semester may also apply. Proof of M.Tech/ M.E certificate has to be provided during the time of interview.

Desired Skills:-

- Basic exposure to **synthesis of Nanomaterials**
- Work experience related to experimental characterization of Nanomaterials.
- Ability to work in a team, good communication skills and experience in experimental research.

Age Limit: 28 years

Salary: Rs. 25,000/month

Duration: up to 4 month only.

How to apply: Interested candidates must apply with the following documents; (1) Cover letter, (2) Bio-data with passport-sized photograph, (3) Scanned copies of educational certificates and mark sheets, class XII onwards, (4) GATE qualified certificate(Optional) and (5) Scanned copies of Proof for research experience, special achievements and publications, if any.

The soft copies of all the above documents (pdf format) must be E-mailed to rizwan@nitk.edu.in (Dr. Mohammad Rizwanur Rahman) by **13th Sept. 2019**. Only shortlisted candidates will be intimated by E-mail and called for interview in person. No TA/DA will be paid for attending the interview. The position is available immediately. Interview will be held on or after 18th of Sept. 2018. The appointment will be on a purely temporary basis co-terminus with the project

PROJECT DETAILS

PROJECT TITLE:- Synthesis of Silver Nanoparticles at laboratory scale and further scaling up to pilot scale at HZL

Project No.: GNFA/4500004877

**Budget:- Rs. 11,75,280/-
2020**

Time Period: 2019-

Principal Investigator:- Dr. Mohammad Rizwanur Rahman, Dept. of Metallurgical and Materials Engineering, NITK

Summary of the Project:

In 2015, the total market size by various industry was about 308.3 Million USD in USA alone as reported by Global market Insights. The global Market size was over 1 billion USD in 2015 with close to 13% CAGR estimation forecast from 2016 to 2024.

In India, it's important to focus on the synthesis of silver nanoparticle at industrial scale because of its growing demand in the world market and since no Indian companies are involved in the synthesis of silver nanoparticle at industrial scale. Therefore, at present HZL can take this opportunity to become the leader in production of silver nanoparticle.

Deliverables:

1. The optimized parameter will be provided for the particle size of 10 nm, 20 nm, and 50 nm with a tolerance limit of ± 5 nm.
2. We will provide 100 ml of suspended silver nanoparticle for the above listed particle sizes.
3. I will suggest the best and quickest synthesis technique and equipment model for the synthesis of silver nanoparticle at pilot scale.
4. A detail report with optimized parameter of above mentioned nanoparticle size with all characterization details. Report will have process information with equipment and supplier information for the synthesis of 900 ml of silver nanoparticle with concentration of 0.2 mg/ml.