



# SAARTHI • सारथी

करियर मार्गदर्शन पोर्टल • Career Guidance Portal

"सही मार्गदर्शन, उज्ज्वल भविष्य।"

करियर शीट • CAREER SHEET

## नैनो टेक्नोलॉजिस्ट

Nanotechnologists work with materials at the scale of molecules to create new materials and devices for medicine, electronics, energy and agriculture.



### Scan for everything on this career

Salary, exams, colleges, the routes in and the steps after — all on the portal.

[career.gsssjethantri.in/#/career/eng-4642](https://career.gsssjethantri.in/#/career/eng-4642)

### राजकीय उच्च माध्यमिक विद्यालय, जेठन्तरी

Govt. Sr. Sec. School, Jethantri • ब्लॉक समदड़ी • बालोतरा (Block Samdari • Balotra)

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#### सुशील कुमार शर्मा

प्रधानाचार्य, रा.उ.मा.वि. जेठन्तरी • मास्टर ट्रेनर  
Principal, GSSS Jethantri • Master Trainer



#### श्री चेनाराम चौधरी

प्रधानाचार्य, डाइट बाड़मेर  
Principal, DIET Barmer



#### श्रीमती संघमित्रा

वरिष्ठ व्याख्याता, डाइट बाड़मेर (सहयोग)  
Sr. Lecturer, DIET Barmer (Support)



#### भरत चौधरी

अभिकल्पना व विकास • व्याख्याता (इतिहास)  
Designed & developed • Lecturer (History)

### विशेष धन्यवाद • SPECIAL THANKS



#### सुरेन्द्र सिंह राठौड़

व्याख्याता (इतिहास) • रा.उ.मा.वि. कानाना



#### सुरेश कुमार सैन

व्याख्याता (भूगोल) • रा.उ.मा.वि. रामसीन मूंगड़ा



#### वनिता कुमारी

व्याख्याता (इतिहास) • रा.उ.मा.वि. रामसीन मूंगड़ा



#### कमलेश चौधरी

व्याख्याता (राजनीति विज्ञान) • रा.उ.मा.वि. टापरा

करियर मार्गदर्शन कार्यशाला, डाइट बाड़मेर (14-17 जुलाई 2026) में विकसित व लोकार्पित  
Developed & unveiled at the Career Guidance Workshop, DIET Barmer (14-17 July 2026)

यह एक स्वतंत्र परियोजना है, जो सरकार की आधिकारिक करियर-मार्गदर्शन सामग्री पर आधारित है। • An independent project based on the Government's official career-guidance content.

## 1 About this career

Nanotechnologists work with materials at the scale of molecules to create new materials and devices for medicine, electronics, energy and agriculture.

## 2 At a glance

|                       |                                                    |
|-----------------------|----------------------------------------------------|
| Minimum qualification | 12th PCM/PCB + B.Sc/B.Tech in nanoscience/nanotech |
| Work mode             | Research lab and cleanroom                         |
| Demand                | Emerging - in semiconductors, pharma and energy    |
| Top earning           | Research director/scientist: Rs 2 lakh+/month      |

## 3 What you need

### INTERESTS

- Deep interest in science and maths
- Curiosity for new discoveries
- Attention to fine detail

### ABILITIES

- Analysing problems and data
- Ability to do patient, repeated experiments
- Proficiency with computers and instruments

### KEY SKILLS

- Nanomaterial synthesis
- Strong base in chemistry and physics
- Data analysis and scientific writing
- Microscopy (SEM/TEM/AFM)
- Biosensor/device fabrication
- Lab safety and quality standards

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## 4 How to get there

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- 1 Pass 10+2 in science stream (PCM/PCB).
- 2 Do B.Sc/B.Tech in nanotechnology/nanoscience or physics-chemistry.
- 3 Enter a good institute via JEE/REAP/CUET.
- 4 Do M.Sc/M.Tech in nanoscience (GATE/CUET-PG).
- 5 Take up projects/PhD in a research institute or company lab.

### MAIN EXAMS

- JEE Main / REAP
- GATE / JAM
- CUET (UG/PG)
- CSIR-UGC NET (research)

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## 5 Where to study

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### GOVERNMENT INSTITUTES

- IIT Jodhpur — Jodhpur, Rajasthan (<https://iitj.ac.in>)
- MNIT Jaipur (Materials Research Centre) — Jaipur, Rajasthan (<https://www.mnit.ac.in>)
- IISc Bengaluru — Bengaluru, Karnataka (<https://iisc.ac.in>)
- JNU Special Centre for Nanoscience — New Delhi (<https://www.jnu.ac.in>)
- Central University of Rajasthan — Ajmer, Rajasthan

### PRIVATE INSTITUTES

- Amity University — Jaipur, Rajasthan
- Manipal University Jaipur — Jaipur, Rajasthan
- SRM Institute of Science and Technology — Chennai, Tamil Nadu

### ONLINE

- NPTEL/SWAYAM (Nanotechnology courses) — Online (<https://nptel.ac.in>)

### FEES

Full course about Rs 2-13 lakh; much lower in government institutes; varies by institute.

### SCHOLARSHIPS

- National Scholarship Portal (<https://scholarships.gov.in>)

- KVPY-type/INSPIRE science fellowships (see NSP) (<https://scholarships.gov.in>)

## 6 What the work is like

### WHERE YOU WORK

Pharma and healthcare companies, semiconductor-electronics units, agriculture and energy research, government-private research institutes.

### WORK CULTURE

5-6 days a week, 8-9 hours; research may bring flexible but long hours. Opportunities exist for persons with disabilities.

### WHO HIRES

- CSIR/DRDO/ISRO labs
- Semiconductor units (Tata Electronics)
- Universities and research institutes
- Pharma companies (Sun Pharma, Dr. Reddy's)
- Paint-chemical companies (Asian Paints)
- Energy-battery startups

### DEMAND (2026)

In 2026, the semiconductor mission, nano-medicine and battery research are creating demand for nano specialists; a PhD helps for senior roles.

## 7 Career growth

- 1 Junior Researcher/Engineer
- 2 Application Engineer
- 3 R&D Engineer/Scientist
- 4 Research Director

### EARNINGS

|              |                    |
|--------------|--------------------|
| Starting     | ₹20,000-40,000     |
| Mid level    | ₹50,000-1,00,000   |
| Senior level | ₹1,20,000-2,50,000 |

Monthly pay; ranges from research fellowships to corporate R&D. 2026 levels, indicative.

## 8 The good parts · The challenges

### The good parts

- Frontline role in future technology
- Diverse fields from medicine to energy
- Opportunities for research and study abroad

### The challenges

- Long study (M.Sc/PhD) for good roles
- Limited direct jobs at bachelor level
- Dependence on research funding

## 9 Real-life journeys

### Prof. C. N. R. Rao

Nanomaterials scientist; Bharat Ratna

Son of a school inspector, C.N.R. Rao finished his B.Sc at 17 and put India on the world map in nanomaterials and carbon nanotube research; he received the Bharat Ratna.

Wikipedia · [https://en.wikipedia.org/wiki/C.\\_N.\\_R.\\_Rao](https://en.wikipedia.org/wiki/C._N._R._Rao)

### Dr. Pratima R. Solanki

Nanoscience researcher, JNU

At JNU's Special Centre for Nanoscience, Pratima Solanki leads a nano-bio group; her team develops nano biosensor chips to detect cancer and toxins.

JNU · <https://www.jnu.ac.in/content/partima>

## 10 Sources & further reading

1. Rajasthan Career Guidance: Nanotechnology/Nanoscience — <https://cg.rajasthan.gov.in/careerguidance/hi/career/%e0%a4%a8%e0%a5%88%e0%a4%a8%e0%a5%8b-%e0%a4%9f%e0%a5%87%e0%a4%95%e0%a5%8d%e0%a4%a8%e0%a5%8b%e0%a4%b2%e0%a5%89%e0%a4%9c%e0%a5%80-%e0%a4%a8%e0%a5%88%e0%a4%a8%e0%a5%8b%e0%a4%b8%e0%a4%be%e0%a4%87%e0%a4%82/>
2. IISc Bengaluru — <https://iisc.ac.in>
3. NPTEL (free online courses) — <https://nptel.ac.in>
4. National Career Service (NCS) — <https://www.ncs.gov.in>



### And 770+ more careers — the whole portal

Interest and aptitude tests, government jobs, skill courses and a CV builder — free, no login, and it works offline.

[career.gsssjethantri.in](https://career.gsssjethantri.in)