



## CSIR-CSIO

### Ph.D. Program (Science) –Jan 2018 Session

#### SHORTLISTING CRITERIA:

An applicant must fulfill the criteria listed in the table below in order to be eligible for appearing in the interview.

| Criterion   |
|---|
| <p><b>PhD (Sciences):</b><br/>Candidates with a Bachelor's degree in Engineering/ Technology, Medicine or Master's degree in Science with a keen sense of scientific enquiry for pursuing advanced research in frontier areas of Biological, Chemical, Physical and Mathematical &amp; Information Sciences leading to a Ph.D. degree.<br/>The candidate should be having a valid National level fellowship (JRF/ SRF of various funding agencies, e.g. CSIR, UGC, DBT, DST etc.), INSPIRE or other equivalent fellowships. Project Assistants, Senior Research Fellows and CSIR Scientists are also eligible to apply (as per AcSIR Ordinance No. 4(5)).</p> |
| <p><b>Direct PhD (Sciences):</b><br/>Undergraduate degree in Science or allied subjects with at least 8.5 and/or 1st rank holder in University/ Institution.<br/>Possible funding sources for students are INSPIRE, CSIR-JRF, CSIR-UGC-NET or other equivalent national fellowships.</p>  |
| <p><b>Sponsored PhD (Sciences):</b><br/>Regular: Master's degree in Science*<br/>Direct: Undergraduate degree in Science or allied subjects with at least 8.5 and/or 1st rank holder in University/ Institution*.<br/>* with endorsement from Industry, Academic or Research Institutes for required academic leave and financial support during program.</p>   |
| <p><i>Applicants qualifying their degree in percentage shall use the formula, <math>CGPA = (\text{Percentage} + 5) / 10</math>. Applicants with percentage <math>\geq 95\%</math>, shall fill 10 CGPA.</i></p>  |

## LIST OF SHORTLISTED CANDIDATES FOR INTERVIEW

| S.N. | App. No. | Candidate's Name       | Category | Date of Interview & Reporting Time                   | FELLOWSHIP   |              |
|------|----------|------------------------|----------|--|--|--------------|
| 1.   | 23938    | AMANDEEP KAUR MATHAROO | UR       | <b>27<sup>th</sup> November, 2017<br/>09:30 A.M.</b> | JEST   |              |
| 2.   | 23929    | ASHOK KUMAR R*         | OBC      |  | INSPIRE  |              |
| 3.   | 23918    | MAHAK GUPTA*           | UR       |  | INSPIRE  |              |
| 4.   | 23886    | SHUBHAM CHAMOLA*       | UR       |  | INSPIRE  |              |
| 5.   | 23870    | SAGAR RANA@            | UR       |  | PROJECT ASSISTANT                                    |              |
| 6.   | 23769    | GARIMA*                | UR       |  | INSPIRE  |              |
| 7.   | 23740    | SAJAD AHMED            | ST       | <b>27<sup>th</sup> November, 2017<br/>09:30 A.M.</b> | CSIR-NET JRF   |              |
| 8.   | 23705    | KIRAN MEENA            | ST       |  | CSIR/UGC-NET   |              |
| 9.   | 23697    | SURESH CHAND           | UR       |  | CSIR/UGC-NET/JEST                                    |              |
| 10.  | 23693    | MEENA YADAV            | OBC      |  | CSIR-NET JRF   |              |
| 11.  | 23688    | SUKH VEER              | OBC      |  | CSIR-NET JRF   |              |
| 12.  | 23681    | SATINDERDEEP KAUR@     | UR       |  | Project Fellow                                       |              |
| 13.  | 23608    | SAURABH KAUSHIK*       | UR       |  | INSPIRE  |              |
| 14.  | 23585    | KRISHAN KUMAR          | UR       |  | CSIR/UGCNET  |              |
| 15.  | 23579    | CHHAVI SHARMA^         | UR       |  | DST-Women Scientists Scheme (WOS)                    |              |
| 16.  | 23575    | BANTU MAHESH           | OBC      |  | CSIR-NET JRF   |              |
| 17.  | 23570    | MANPREET KAUR          | UR       |  | JEST   |              |
| 18.  | 23569    | RAJKIRAN KUMARI        | OBC      |  | GATE   |              |
| 19.  | 23517    | JASLEEN KAUR*          | UR       |  | INSPIRE  |              |
| 20.  | 23433    | KRITIKA GHOSH#         | OBC      |  | Industry Sponsored                                   |              |
| 21.  | 23423    | RAGHAV AWASTHI         | UR       | UGC-NET JRF  |  |              |
| 22.  | 23419    | LAVLESH                | OBC      | <b>27<sup>th</sup> November, 2017<br/>09:30 A.M.</b> | CSIR-NET JRF   |              |
| 23.  | 23344    | TARUN KUMAR CHAUHAN    | UR       |  | CSIR-NET JRF   |              |
| 24.  | 23322    | NEHA SHARMA            | UR       |  | CSIR-NET JRF   |              |
| 25.  | 23302    | INDU RANI*             | UR       |  | INSPIRE  |              |
| 26.  | 23273    | SHYNA BHALLA           | UR       |  | CSIR-NET JRF   |              |
| 27.  | 23250    | JITENDRA KUMAAR        | UR       |  | CSIR-NET JRF/DBT JRF                                 |              |
| 28.  | 23246    | KAVITA                 | UR       |  | <b>27<sup>th</sup> November, 2017<br/>09:30 A.M.</b> | CSIR-NET JRF |
| 29.  | 23224    | PARDEEP                | OBC      |  |  | UGC-NET JRF  |

| S.N. | App. No. | Candidate's Name        | Category | Date of Interview & Reporting Time                   | FELLOWSHIP   |
|------|----------|-------------------------|----------|--|--|
| 30.  | 23214    | REENA                   | OBC      | <b>27<sup>th</sup> November, 2017<br/>09:30 A.M.</b> | CSIR-NET<br>JRF/JEST                                 |
| 31.  | 23197    | SHENOY MEENAKSHI MAHESH | UR       |  | CSIR-NET JRF   |
| 32.  | 23193    | YOGESH KUMAR            | UR       |  | CSIR-NET JRF   |
| 33.  | 23189    | JYOTI                   | SC       |  | JRF  |
| 34.  | 23180    | NISHANT THAKUR          | UR       |  | UGC-NET JRF  |
| 35.  | 23171    | MAMTA                   | OBC      |  | CSIR-NET JRF   |
| 36.  | 23152    | VEENA JAIN*             | UR       |  | INSPIRE  |
| 37.  | 23111    | SHIV KUMAR              | OBC      |  | JEST   |
| 38.  | 23013    | BEETA KUMARI            | UR       |  | CSIR-NET JRF   |
| 39.  | 22987    | PRINCE KUMAR            | UR       |  | UGC-NET<br>JRF                                       |
| 40.  | 22984    | MANISH                  | UR       | <b>27<sup>th</sup> November, 2017<br/>09:30 A.M.</b> | JEST   |
| 41.  | 22971    | RAMAN                   | UR       |  | CSIR-NET JRF   |
| 42.  | 22954    | PRINCE SHARMA           | UR       |  | CSIR-NET<br>JRF                                      |
| 43.  | 22876    | AMIT LOCHAB             | UR       |  | CSIR-NET JRF   |
| 44.  | 22815    | ANIL BHUSHAN            | UR       |  | CSIR-NET JRF   |
| 45.  | 22811    | PARDEEP KUMAR           | SC       |  | CSIR/UGCNET  |
| 46.  | 22718    | BIJENDER                | OBC      |  | CSIR-NET JRF   |
| 47.  | 22672    | PRIYANKA MADAN          | UR       |  | UGC-NET JRF  |
| 48.  | 22612    | SHARAD KUMAR UPADHYAY   | OBC      |  | CSIR-NET JRF   |
| 49.  | 22557    | JASWANT KUMAR           | SC       |  | <b>27<sup>th</sup> November, 2017<br/>09:30 A.M.</b> |

#- Document of Industry Sponsored  
@-NOC from the project/Department

\$- Production of Valid Fellowship  
\*-Production of INSPIRE Certificate

### **Instructions/information for Short-listed Candidates:**

1. Candidates must bring the signed copy of the Online Application form and Proof of eligibility and Fellowship, which are mandatory for appearing in the interview.
2. Candidates must confirm their attending the interview by sending a Statement of Purpose (SOP) by email to [suneet.csio@acsir.res.in](mailto:suneet.csio@acsir.res.in) immediately. Template for SOP is attached as Appendix herewith.
3. No TA/DA shall be paid to the shortlisted candidates for attending the interview and they will have to make their own arrangement for accommodation.
4. Candidates who have applied with CSIR-NET JRF/UGC-NET JRF/RGNF/DBT/ICMR-JRF/INSPIRE fellowship must have a valid and tenable fellowship.
5. Any applicant who fulfills the short-listing criteria mentioned above but his/her name does not appear in the list of short-listed candidates for interview may communicate to the Program Coordinator at the following E-mail address: [coordinator.csio@acsir.res.in](mailto:coordinator.csio@acsir.res.in). Such candidates are requested to appear for the interview with valid documents on the date and time as in the Interview Schedule on AcSIR website.
6. The Candidate may choose Research Areas as per Research Problems mentioned. However, they may also propose other area of Research.

# Statement of Purpose(SOP) for PhD under AcSIR-CSIO

**Identified Research areas within the scope of CSIR-CSIO:**

- 1.
- 2.
- 3.

**Broad proposal or plan of work (within 250 words):**

Date:

Name of the Candidate & Signature

## SOME OF THE RESEARCH PROBLEM(S)

Name of the Lab: CSIR-CSIO

Session: Jan 2018

| S.No. | Name of the Faculty   | Discipline (Engineering/Physical) | Problem Faced   | Area of Research   | Essential Qualifications  | Desired Qualifications/Skills  | Number of Intake |
|-------|-----------------------|-----------------------------------|---|--|---|--|------------------|
| 1     | Dr. Neelesh Kumar     | Engineering                       | Biomedical  | Rehabilitation   | BE/ME   |  | 3                |
| 2     | Dr. Manoj Kumar Patel | Engineering/Science               | Next generation food safety and packaging solutions: Electrostatic based biodegradable and edible spraying/coatings for perishable food and fruits to enhance the shelf life  | Multi-disciplinary advanced instrumentation engineering/Advanced spraying technology/Food technology/Transportation and storage solutions/Food safety and nutrition  | BE/BTech/MEM.Tech/BSc/MSc in Instrumentation/Electronics/Applied physics/Biotechnology/Food technology/Nanotechnology | Knowledge of computational softwares/tools, optimization techniques/data analysis, hardware and electronic design tools. The preference will be given to the candidates with valid fellowship (NET/GATE qualified) | 2                |
| 3     | Dr. Manoj Kumar Patel | Engineering/Science               | Electrostatic spraying for societal and industrial applications (dust mitigation, environment protection, next generation autonomous systems for agricultural tasks), Robotics, UAVs for dust mitigation and pollution control<br>Next generation Display Systems, Design and Evaluaton of optical parameters based upon Aspherical & Free form surfaces, Computational Fluid Dynamics, Day lighting systems, Next Generation LED Lighting, Laser Cut Panel for Lighting, Adapotive opto-Mechanical design, Integrated Opto-mechnaical systems, Micro scale heat transfer | Computation fluid dynamics, Hydrodynamics, Liquid atomization, Electro-hydrodynamics, Computational Fluid Dynamics (CFD)   | BE/BTech/ME/M.Tech in Mechanical Engineering/Instrumentation/Electronics/Applied physics                              | Experience in Solidworks, Design tools, MATLAB, Inventor, Ansys, CAD/CAM. The preference will be given to the candidates with valid fellowship (NET/GATE qualified)  | 1                |
| 4     | Dr. Harry Garg        | Engineering/Physical              | Next generation Display Systems, Design and Evaluaton of optical parameters based upon Aspherical & Free form surfaces, Computational Fluid Dynamics, Day lighting systems, Next Generation LED Lighting, Laser Cut Panel for Lighting, Adapotive opto-Mechanical design, Integrated Opto-mechnaical systems, Micro scale heat transfer   | 1. Mechanical Design & Optimization , 2. Optical Design & Opto-Mechanical based design, 3. Day Light & Next Generation LED Displays Illumination:4. Fabrication of Nano-Finished Mechanical & Optical Components, 5. Micro Scale Heat Transfer | B.E/M.Tech in Mechanical Engineering/Instrumentation/Producti on/Mechatronics/A pplied physics                        | Interset and Knowledge in the related Areas, Self Financing and Project Intake facility available, Fellowship candidate will be given preferecne   | 2                |

| S.No. | Name of the Faculty | Discipline (Engineering/Physical) | Problem Faced  | Area of Research  | Essential Qualifications   | Desired Qualifications/Skills   | Number of Intake |
|-------|---------------------|-----------------------------------|--|---|--|---|------------------|
| 5     | Dr. Suman Singh     | Engineering/Science               | using Nano & Ferro Fluids<br><br>Advanced materials for toxin detection, biofertilizers, Synthesis and study of nanocomposites, nanoscaffolds, detection platforms for diagnostic applications | Bio-immunosensors for diagnostic applications, Molecularly imprinted polymers for various environmental applications, Nanoassemblies for optical and electrochemical applications, nanoscaffolds/composites for biomedical applications | M.Sc (chemistry, biotechnology, biochemistry and related disciplines)/M.Tech Nanoscience, Nanobiotechnology/B.Tech (Bio/Nanotechnology & related disciplines)  | Candidate must have fellowship.   | 1                |
| 6     | Dr Raj Kumar        | Science/Engineering               | Holographic displys, optical metrology   | Optics and Photonics  | M Sc Physics/Applied Physics or B Tech / M Tech Optical Engineering/Applied optics/ Optoelectronics/Photonics<br>MSc Physics/Applied Physics/Optoelectronics, MTech Optoelectronics/Electronics and Communications/Instrumentations/Optical engineering/Applied Optics |   | 2                |
| 7     | Dr. Samir K Mondal  | Science/Engineering               | Nano-photonics, Optics and medical imaging, optical tweezer, optical fiber antenna   | Photonics   | M.Tech/M.Sc.(Nanotechnology/Chemistry/Biotechnology/Materials Science/Forensic Science)<br>NET/GATE/JEST/DSTInspire/National level qualifying examination  | Knowledge of synthesis and characterization of hybrid nanomaterials for analytical and biological applications. | 2                |
| 8     | Dr. Abhay Sachdev   | Science/Engineering               | Polymeric nanocomposites for control of biofouling, Nanosensors for analytical applications, Synthesis of theranostic nanomaterials  | Nanobiotechnology, Materials Chemistry, Bioimaging, Sensing, Environmental Nanotechnology   | Bechalors/Masters in Mechanical/Biomedical/Nanotechnology/Optical Engineering, MSc in Physics  |   | 1                |
| 9     | Dr. Sanjeev Soni    | Engineering/Physics               | Simulations and experiments towards Biomedical applications  | Heat transfer, Thermal therapy, Fluid dynamics, Transport phenomenon, Monte carlo for light transport,  | Simulation tools like Ansys/Comsol/FDTD/CAD will be useful   |   | 2                |

| S.No. | Name of the Faculty  | Discipline (Engineering/Physical) | Problem Faced   | Area of Research  | Essential Qualifications  | Desired Qualifications/Skills   | Number of Intake |
|-------|----------------------|-----------------------------------|---|---|---|---|------------------|
| 10    | Dr. Sachin Tyagi     | Engineering/Physics/Chemistry     | Bionanosensor/RADAR absorbing coatings/orthopedic implant material  | Nano-bio-technology, Biophotonics<br>Nanocomposite for orthopedic implant application/Bionanosensing/magnetic materials for stealth application | M.Sc (chemistry, biotechnology, biochemistry and related disciplines)/M.Tech Nanoscience, Material Science/ Electronic Science/Mechanical Engineering<br>BE/BTech/ME/M.Tech in Computer Science/Instrumentation/Electronics and related disciplines | M.Sc (chemistry, biotechnology, biochemistry and related disciplines)/M.Tech Nanoscience, Material Science/ Electronic Science/Mechanical Engineering<br>Knowledge of any one of the programming languages/machine learning/data analysis, etc. | 1                |
| 11    | Dr. Neerja Mittal    | Engineering/Physical              | Image/video processing  | Image/video processing  | BE/BTech/ME/M.Tech in Computer Science/Instrumentation/Electronics and related disciplines  | --  | 2                |
| 12    | Dr. Amol P Bhonekar  | Engineering                       | Expert Systems  | Expert Systems  | BE/B.Tech/ME/M.Tech   | --  | 1                |
| 13    | Dr. Sanjeev Kumar    | Engineering                       | Non invasive diagnosis of Blood parameters  | Biomedical Instrumentation  | BE/B.Tech/ME/M.Tech   | --  | 3                |
| 14    | Dr Babankumar Bansod | Engineering/Science               | Intelligent and adaptive sensor-system design for real-time water, soil and air quality monitoring , Drones/UAV systems         | Smart Environmental Monitoring Systems (Sensor, Software and Networks)  | BE/BTech/ME/M.Tech in Electronics/ Computer Science/Instrumentation/and related disciplines   | Embedded system, Signal processing, Image processing, Artificial intelligence, Data Analytics, Optimisation techniques and data mining, Electronic Circuit designing and simulations  | 3                |
| 15    | Dr Parveen Kumar     | Science/Engineering               | Microfluidics based electrochemical Biosensors for glucose, Uric acid, viral infections, bacterial infections and breast cancer | Health care equipment and technology/ Diagnosis   | M.Sc./M.Tech in Biotechnology/Nanotechnology/Biochemistry/Microbiology  | Knowledge of biosensors and cancers   | 1                |
| 16    | Dr Parveen Kumar     | Science/Engineering               | Recycling of Lithium ion batteries to yield high cost end products  | E-waste management  | M.Sc./M.Tech in Nanotechnology/ Chemistry/ Biochemistry/ Physics  | Knowledge of e-waste management   | 1                |
| 17    | Dr. Inderpreet kaur  | Science/Engineering               | Synthesis and investigation of mechanisms of Heat transfer in nanofluids.   | Thermodynamics/Physics/Mechanical   | B. Tech /M.Tech (Mechanical Engineering) MSc (Physics)  |   | 1                |
| 18    | Dr. Inderpre         | Science/Engineering               | Fabrication of graphene based   | Nanodevices, Fabrication,   | MSc/MTech (Applied Physics)   |   | 1                |

| S.No. | Name of the Faculty | Discipline (Engineering/Physical) | Problem Faced  | Area of Research                                      | Essential Qualifications  | Desired Qualifications/Skills  | Number of Intake |
|-------|---------------------|-----------------------------------|--|---|---|--------------------------------|------------------|
|       | et kaur             |                                   | transparent electrodes for super capacitors and improvement in solar cell efficiency | MEMS  | or Electronics)   |                                |                  |
| 19    | Dr. Inderpreet kaur | Science/Engineering               | Theoretical investigation of nanomaterials.  | Computational Chemistry                               | MSc. Chemistry  |                                | 1                |
| 20    | Dr. Inderpreet kaur | Science/Engineering               | Theoretical Physics/Quantum computing  | Quantum mechanics                                     | M.Sc Physics  |                                | 1                |
| 21    | Dr. Inderpreet kaur | Science/Engineering               | 3. Electrochemical and optical sensors for immuno Diagnosis                          | Biotechnology or Biochemistry                         | Bio sensor: MSc (Biochemistry and biotech)  |                                | 1                |
| 22    | Dr. Rajesh Kanawade | Science/Engineering               | Diagnosis of Bone Diseases by using Raman and Diffuse Reflectance Spectroscopy       | Biophotonics/Medical Optics/Photonics                 | MSc (Physics/Applied Physics) /Optical Engineering/Applied optics/Photonics   | Candidate must have fellowship | 2                |
| 23    | Shashi Poddar       | Science/Engineering               | Unmanned vehicle navigation in unknown environment and study of camera performance   | Image processing, Computer vision and embedded system | Msc (Physics/Applied Physics)/ BE/Btech ME/ Mtech in computer science, aerospace, electronics/ equivalent engineering |                                | 2                |