



SERB
VRITIKA PROGRAM
ACCELERATE VIGYAN SCHEME

Training and Skill Internship on

Development of Cathodic Materials for Microplasma Generation

11th July-10th August, 2022

Organized by

Advanced Materials Technology Department

CSIR-Institute of Minerals and Materials Technology, Bhubaneswar

VRITIKA:

VRITIKA program under Accelerate Vigyan Scheme of SERB is an initiation and practice in science through Training and Skill Internship. This program aims to provide opportunities to promising PG students from universities and colleges to get exposure and hands-on research skill development experience. These internships will primarily be facilitated by organizations / institutions / laboratories of national importance such as IITs, IISc, IISERs, NITs, CSIR, ICAR, ICMR etc.

Who can Register:

Post graduate students (Ongoing/Pursuing)

Number of Positions Available:

Five

Duration:

1 month (11th July-10th August, 2022)

Venue:

Advanced Materials Technology Department,

CSIR-Institute of Minerals and Materials Technology, Bhubaneswar, Odisha-751013.

About CSIR-IMMT:

CSIR-Institute of Minerals and Materials Technology (IMMT) was established on 13.04.1964 as Regional Research Laboratory, Bhubaneswar in the eastern part of India under the aegis of the Council of Scientific and Industrial Research (CSIR), New Delhi. It was renamed in 2007 with a renewed research focus and growth strategy to be a leader in the areas of mineral & material resource engineering. The institute has expertise in conducting basic research and technology oriented programs in a wide range of subjects to address the R&D problems of mining, mineral and metals industries and ensure their sustainable development. For the last one decade, the main thrust of R&D at CSIR-IMMT has been to empower Indian industries to meet the challenges of globalization by providing advanced and zero waste process know-how and consultancy services for commercial exploitation of natural resources through the public-private-partnership (PPP) approach. Today, CSIR-IMMT is the first choice for many mineral based industries. It is also carving out a niche in processing of advanced materials for greater value addition and working on resource use efficiency of critical raw materials.

About the Training and Skill Internship

The term “microplasma” is usually utilized to refer low-temperature plasma discharges having dimensions of few micrometers to a few millimetres. The plasma discharges generate a high sensitive environment that comprises of excited species, charged particles, photons, and radicals, and the reduced dimensions allow low-power sources with small footprints suitable for the combination in microsystems and also in portable devices. Microplasma device has a wide range of applications in plasma displays, plasma medicine, triboelectrics, nanomaterials’ synthesis, gas treatment, etching processes, excimer sources, spectroscopy of gases, and analytical chemistry.

The construction of a cathode material that can proficiently eject electrons for the aim to improve the luminous efficiency of a microplasma device is of prime importance. Hunt for a suitable cathode material has begun, in which the material can enhance the plasma characteristics and increase the sustainability of plasma discharges. This internship programme aims:

- to train students to fabricate thin films by various methods such as spin coating, dip coating, drop casting and hydrothermal methods.
- to train students to structurally characterize thin films using scanning electron microscopy, Raman spectroscopy, X-ray diffraction and transmission electron microscopy at CSIR-IMMT. The students will also get training to operate these analytical instruments.

- to throw light on physics of microplasma, and hands-on experience on designing, fabrication and analysing the plasma illumination characteristics of microplasma device.
- to train the students how to prepare and deliver a scientific presentation.
- Finally, to motivate and encourage the students to earn Ph.D. degree and pursue a research career in Science and Technology, at a later stage.

How to Apply?

- The applicant has to e-mail the scanned copy of duly filled-in application form along with all required documents and certificates mentioned in the Table below (PDF only) to the e-mail ID: csirimmt.vritika@gmail.com before 8th July, 2022, 23:59:59 (Time)
- Send the scanned copy of filled-in Application form with required documents as a single PDF file with the **Subject** line having **Application_Vritika_Candidate Name_Institution Name**
- Application sent after due date (8th July, 2022, 2022), incompletely filled application, application without signature, application without required attachment/document, application without proper clarity will **NOT** be considered.

Document Attaching Order (In single pdf file)	
1.	Filled & Signed Application Form (Annexure -I)
2.	Endorsement cum No Objection Certificate duly approved by Head of Department (Annexure -II)
3.	Signed Undertaking Form (Annexure -III)
4.	Letter of Intent (Upto 300 words): (i) Why do you wish to attend this Skill Internship and Training? (ii) What do you indent to learn? (iii) How will it be useful for your career?
5.	Resume (Not exceeding 2 pages)
6.	P.G. Semester Mark sheets (Self Attested)
7.	U.G. Degree Certificate (Self Attested) Or A proof for CPI/CGPA/% obtained in UG Degree (if CPI/CGPA/% not mentioned in UG Degree Certificate) (Self Attested)
8.	Institution/College/University I.D. Card (Scanned Copy)

Selection

- The screening will be primarily based on the details provided in the application form.
- Shortlisted applicants will be intimated electronically.

Provisions in Training and Skill Internship

- Food and accommodation facilities during the training and skill internship will be arranged by CSIR-IMMT.
- For outstation candidates, one time onward and return train ticket cost (Shortest route to Bhubaneswar Railway station in 2S/Sleeper class) will be reimbursed (as per TA norms)
- Certificate will be provided on successful completion of this Training and Skill Internship.
- The financial assistance for conducting this event has been provided by the **Science & Engineering Research Board**, a statutory body of the **Department of Science & Technology (DST), Government of India**.

Caution:

- **NO** benefit/certificate would be provided for the student dropping/leaving/partially attending the Training and Skill Internship.
- **NO STIPEND** for this Training and Skill Internship.

Document Submission during the Program:

- The student should submit original hard copy of the application form with relevant documents (emailed as soft copy while applying for this event).
- The student should submit a “Joining Report” to HRD, CSIR-IMMT at the time of joining.
- The student should also submit Self Declaration form - COVID 19 as per Government of India/State of Odisha guidelines at the time of joining.
- At the end of the program, the student has to submit a Training and Skill Internship report.

Contact:

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ANNEXURE - I

Application Form

1.	Prefix	Mr./Mrs./Ms.
2.	Full Name of the Applicant (Full name as described on certificate)	
3.	Father's/ Mother's/ Guardian's name	
4.	Date of birth (DD/MM/YY)	
5.	Gender	Male/Female
6.	Nationality	Indian/_____
7.	Email Address	
8.	Correspondence Address	
9.	Permanent Address	
10.	Contact Number	
11.	P.G. Degree Pursuing	M.Sc./M.Tech/M.E./Others_____
12.	P.G. Degree Specialization Subject	
13.	Name of the Institution/University/College	
14.	Institution/University/College Address	

15.	Division/Department/School			
16.	CPI/CGPA/Percentage (Fill whichever applicable) *Attach self-attested photocopy of all available mark sheets	Semester 1	Semester 2	Semester 3
17.	U.G. Degree Completed	B.Sc. / B.Tech / B.E. / Others _____		
18.	U.G. Degree Specialization Subject			
19.	Name of the Institution/University/College			
20.	Institution/University/College Address			
21.	Division/Department/School			
22.	CPI/CGPA/Percentage obtained in U.G. Degree *Attach a proof for CPI/CGPA/% obtained in UG Degree			
23.	Emergency Contact Person			
24.	Emergency Contact Person's Mobile Number			

I agree that all the information mentioned are correct and I shall be liable for the same.

Place:

Date:

Signature of the Applicant



ANNEXURE – II

Endorsement cum No Objection Certificate from the Head of the Department

(To be given on University/ Institute/ College Letter head)

This is to certify that:

1. Mr. / Ms. / Mrs. _____, is a bonafide student of our University / Institute / College and will assume full responsibility for actively participating in the Training and Skill Internship on “Development of Cathodic Materials for Microplasma Generation” sponsored by SERB under the Accelerate Vigyan Scheme, scheduled from 11th July-10th August, 2022.
2. The Applicant is a Full-time / part-time student of our University/ Institute/ College and enrolled in M.Tech / M.Sc. / M.E. Programme in Department.
3. The candidate has secured _____ % / CGPA / CPI till date (if applicable).
4. The University/ Institute/ College also endorses the conduct of the applicant to be of highest order who bears a good moral character.
5. The University/ Institute/ College has “No-Objection” for the candidate participation during the above said period.
6. The candidate, if selected for participation, shall be duly permitted to attend the Training and Skill Internship on physical mode. The University/ Institute/ College may provide the necessary facilitation needed for this purpose.

Date:

Signature and Seal with name

Place:

(Head of the Department)

ANNEXURE - III

Undertaking from the Student Applicant

1. I hereby provide my consent to participate in the Training and Skill Internship titled “Development of Cathodic Materials for Microplasma Generation” organized by CSIR-Institute of Minerals and Materials Technology at Bhubaneswar upon selection.
2. Vouch for participating in this Training and Skill Internship whole-heartedly and attend all the lab sessions, sincerely with utmost dedication.
3. I shall also be responsible and attentive to involve myself during the discussion/interaction session.
4. I am aware that it is mandatory to attend all the lab sessions, compulsorily qualify the course assessment and submit report in order to successfully avail the certification.
5. I understand that the materials supplied during this Training and Skill Internship are only for educational/academic purpose.
6. Uploading/hosting/sharing any content on any platform shall be unlawful on the grounds of Intellectual Property Rights.
7. Any Proxy participation in the Training and Skill Internship shall invite immediate cancellation of his/her candidature and same shall be reported to parent institution.
8. I understand to ensure my physical presence and any support in this regard is to be sought from the applicant’s parent Institution. The organizing institute shall not be liable for the same.
9. I shall strictly follow the COVID guidelines issued by Government of India and State of Odisha.
10. I agree to abide by any other terms and conditions of Organizing Institute and SERB.

Name of the Applicant :
Gender & Age :
Degree (M.E./M Tech/M.Sc.) :
Institution/College/University :
Date :
Place :
Signature of the Applicant :