



Chief Patron

Prof. Alok Kumar Chakrawal
Vice-Chancellor, GGV, Bilaspur



Patron

Prof. Manish Shrivastava
Registrar, GGV, Bilaspur



Coordinator

Prof. P.K. Bajpai
Dean, School of Physical Sciences

Speakers

- **Prof. P.K. Bajpai**, Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Prof. G.K. Patra**, Professor, Chemistry Department at GGV Bilaspur.
- **Prof. H. S.Tewari**, Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Prof. M.N. Tripathi**, Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. R. P. Patel**, Associate Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. Jai Singh**, Associate Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. R. K. Pandey**, Assistant Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. M. P. Sharma**, Assistant Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. G. R. Turpu**, Assistant Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. Subhash Banerjee**, Assistant Professor, Chemistry, GGV, Bilaspur.
- **Dr. Pradip Das**, Assistant Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. S. P. Patel**, Assistant Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Mr. P. Rambabu**, Assistant Professor, Department of Pure & Applied Physics, GGV, Bilaspur.
- **Dr. B. Mondal**, Assistant Professor in Chemistry, GGV, Bilaspur.

Technical Committee

- Prof. P. Thakur, Professor- Chairman
- Dr. A K Singh, Associate Professor- Member
- Dr. Dinesh Uthra, Assistant Professor- Member
- Dr Alka Singh, Assistant Professor- Member
- Dr Shalinta Tigga, Assistant Professor- Member
- Dr Vijaya Kumar, Assistant Professor – Member
- Dr Sandhya Yadav, Assitant Professor – Member
- Dr Bivash Dolai, Assitant Professor – Member
- Dr Faruck Abdullah, Assistant Professor -Member
- Dr A. Bhattacharya, Assistant Professor – Member
- Mr. D.P. Sarwansh, Assistant Professor – Member
- Mr. Ravindra Kumar, Assistant Professor – Member

Registration & Contact Details

Interested participants must register and only selected candidates would be invited for the workshop.

For selected candidates Registration fees, local travel, Boarding and lodging will be covered by GGV, Bilaspur.

Interested participants should register using the following

link: <https://forms.gle/cMAN7Ryd55zWLy1M7>

Registration Deadline: 20 October 2022

Shortlisted candidates will be intimated by email, latest by **22nd October 2022**.

Eligibility criteria:

- (a) Minimum qualification: Post Graduate (Science) or B.Tech. (Technology)
- (b) Professors/Scientists/Post-Doc Fellows/Ph.D. Fellows/ Industry persons who are actively involved in R&D
- (c) Not more than 2 participants from one institute

For more information:

Coordinator: Prof. P.K. Bajpai

Mail: bajpai.pk1@gmail.com

Department of Science & Technology (DST) funded

Training workshop under STUTI (Synergistic Training Program Utilizing the Scientific and Technological Infrastructure)



7Days Workshop on Material Characterization Techniques

1st November to 7th November 2022

**Department of Pure & Applied Physics,
GGV, Bilaspur,
Chhattisgarh**

Acknowledgements



Contents of the workshop

Day 1 - Session I & II

- Inauguration and Welcome note
- Introduction of the Participants and the Host
- Basic introduction to XRD techniques
- Hands on: powder diffraction

Day 2 - Session I & II

- Photoluminescence spectroscopy
- Hands on: Photoluminescence spectra
- Lab visit

Day 3 - Session I & II

- UV-Visible spectroscopy
- Applications of UV – Visible Spectroscopy in Chemistry and Nano technology
- Hands On : UV – Visible spectroscopy

Day 4 - Session I & II

- Differential Scanning Calorimetry
- Hand on: FTIR
- Hands on: DSC

Day 5 - Session I & II

- Density functional theory: Basics and Calculations
- Hands on: Familiarization with server and software

Day 6 - Session I & II

- FTIR spectroscopy
- Hands on: FTIR

Day 7 - Session

- Interactive and Problem-solving session

Overview of STUTI and Objectives of Workshop

DST welcomes all the participants for the workshop on material characterization Techniques organised under STUTI. The STUTI program envisions hands-on-training and sensitization of the state-of-the-art equipment as well as towards sharing while ensuring transparent access to S&T facilities. Department of Science and Technology has identified IIT-Gandhinagar to function as a Project Management Unit (PMU) and as co-ordinator for this workshop.

This workshop is aimed to provide an insight into the basic principles and various techniques of material characterization techniques i.e., X-ray diffraction, Photoluminescence, FTIR, UV-Visible spectroscopy, Differential scanning calorimetry and basic of Computational physics including density functional theory. The participants will be introduced to the basic concepts of these techniques and insights into the analysis of the data, troubleshooting and the advanced modes of operation. The participants will be provided with hands on experience on the operation of the instrument and will have a chance to interact with subject experts and analyse their own samples (with prior approval).

Schedule

Day 1

08:30 Registration
09:00 Inaugural Session
10:45 Tea Break
11:00 Session I
12:30 Lunch
14:00 Session II (Hands on)
15:30 Tea Break
16:00 Campus Visit

Day 2

09:00 Session I
11:00 Break
11:30 Expert Talk
12:30 Lunch
14:00 Session II (Hands on)
15:30 Tea Break
16:00 Lab visit

Day 3

09:00 Session I
11:00 Tea Break
11:30 Expert Talk
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discuss

Day 4

09:00 Session I
11:00 Tea Break
11:30 Expert Talk
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discussion

Day 5

09:00 Session I
11:00 Tea Break
11:30 Expert Talk
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discussion

Day 6

09:00 Session I
11:00 Tea Break
11:30 Expert Talk
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discussion

Day 7

09:00 Interactive session
11:15 Tea Break
11.30 Closing remarks

**Networking Dinner
on Day 5**

Sessions IIA & IIB will be Hands on training