

## **Report on Hands-on Training on XRD**

**Date:** 14<sup>th</sup> October 2021

**Venue:** Physics Research Laboratory, Ismail Yusuf College

**Organized By:** Department of Physics

### **Introduction**

A hands-on training session on X-ray Diffraction (XRD) was conducted at Physics Research Laboratory, Ismail Yusuf College on 14<sup>th</sup> October 2021 by Department of Physics. The workshop aimed to provide participants with practical experience in operating XRD equipment and interpreting diffraction patterns.

### **Training Session**

The training session began with an introductory presentation on the principles of X-ray diffraction, its applications in material science, and the importance of crystallography in understanding material properties. Dr. Pravin Tiramalli, an expert in XRD from Rigaku pvt. Ltd., led the session and provided theoretical insights into diffraction theory.

### **Hands-on Practical Sessions**

Participants were then guided through hands-on practical sessions:

1. **Instrument Familiarization:** Participants were introduced to the XRD instrument, its components, and basic operation procedures. Safety protocols were emphasized throughout.
2. **Sample Preparation:** Practical techniques for sample preparation, including grinding, mounting, and aligning samples on the XRD stage, were demonstrated.
3. **Data Collection:** Each participant had the opportunity to operate the XRD instrument under supervision. They learned to set parameters, initiate scans, and acquire diffraction patterns.
4. **Data Analysis:** The acquired diffraction patterns were analyzed using XRD software. Participants learned to identify crystalline phases, interpret peak positions, and calculate lattice parameters.

## **Discussion and Conclusion**

During the workshop, participants engaged in discussions on troubleshooting common issues encountered during XRD experiments and the significance of accurate data interpretation. The session concluded with a summary of key learning points and a Q&A session.


## **Feedback**

Participants provided positive feedback on the workshop, highlighting the practical nature of the training and its relevance to their research or educational pursuits. Many expressed appreciation for the opportunity to gain hands-on experience with XRD equipment.

## **Conclusion**

The hands-on training on XRD proved to be a valuable learning experience, equipping participants with practical skills in X-ray diffraction techniques. It underscored the importance of experiential learning in understanding complex scientific instrumentation and reinforced theoretical knowledge with practical application.

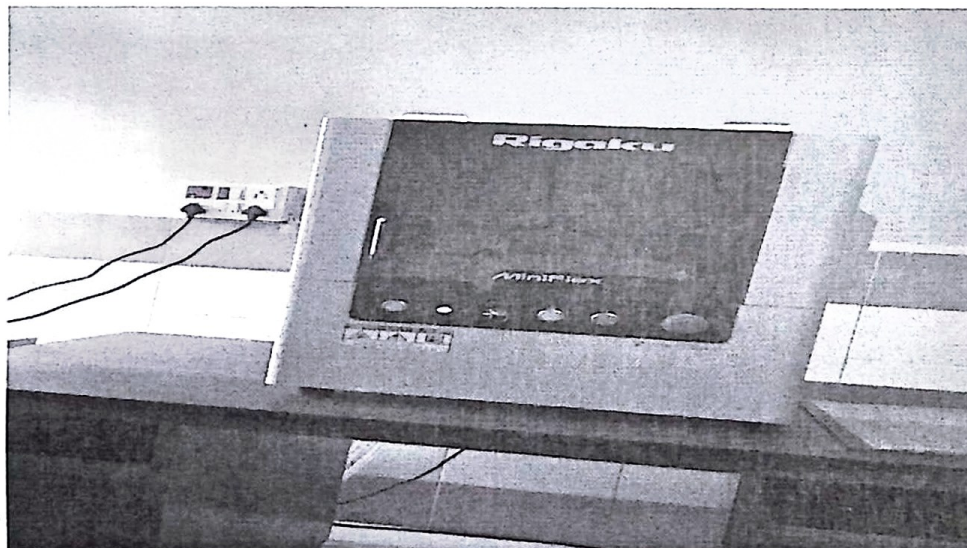
This workshop not only enhanced the participants' understanding of XRD but also fostered collaboration and knowledge-sharing among researchers and educators in the field of materials science and beyond.


  
Head of Physics Department  
Government of Maharashtra's  
Ismail Yusuf College of  
Arts, Science & Commerce,  
Mumbai-400 060.

Department of Physics organized One day hands-on training on XRD (X-Ray Diffraction) on 14<sup>th</sup> October 2021 in the M.Sc. Research Laboratory

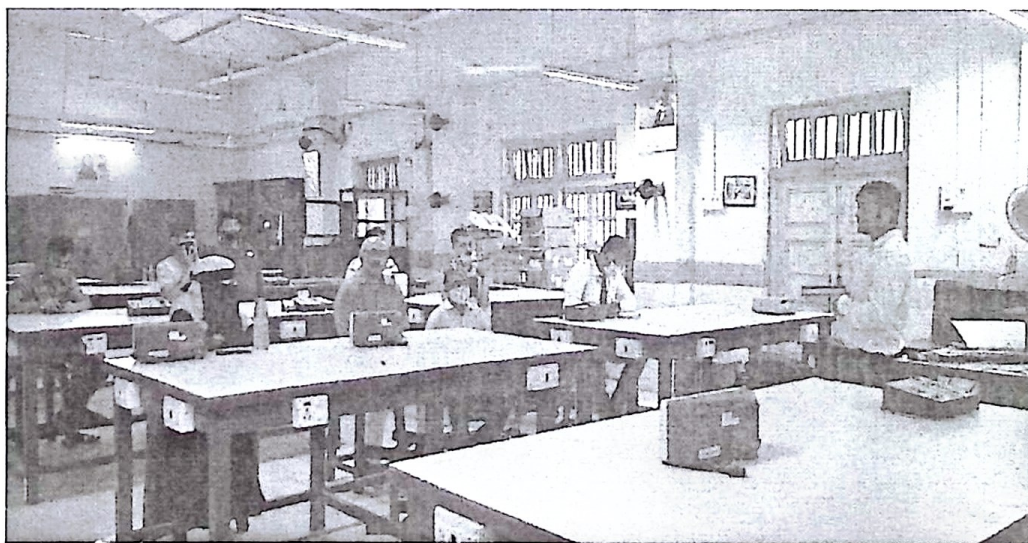
Total Students attained :- 20


Chief guest speaker :- Shri Pravin Trimalli (IRTECH)




  
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Ismail Yusuf College of  
Arts, Science & Commerce,  
Jogeshwari (East) Mumbai - 400 060.





  
 Head of Physics Department  
 Government of Maharashtra's  
 Ismail Yashwantrao Chavan  
 College of  
 Arts, Science & Commerce,  
 Chawari (East), Mumbai-400 060.



  
**Head of Physics Department**  
Government of Maharashtra's  
Ismail Yusuf College of  
Arts, Science & Commerce,  
Jogeshwari (East), Mumbai-400 060.



GOVERNMENT OF MAHARASHTRA  
**ISMAIL YUSUF COLLEGE OF ARTS, SCIENCE AND COMMERCE**  
**Jogeshwari (E), Mumbai: 400060**

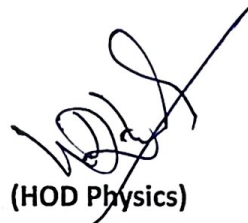
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Date:-04/10/2021

**Department of Physics**

**Notice**

We are pleased to inform you that the Department of physics has organized an One day Hands-on training on XRD( X-ray Diffraction) on 14<sup>th</sup> October 2021 in M.Sc. Physics Laboratory at 10:30am. It is compulsory for all TYBSc and MSc students.



(HOD Physics)

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**Ismail Yusuf College of**  
**Arts, Science & Commerce,**  
Jogeshwari (East), Mumbai-400 060.

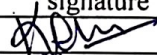
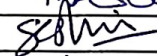




DATE: 14/10/2021

**ATTENDANCE**

**EVENT: Workshop on XRD**

**NO. OF STUDENT: 20 and staff**

SR. No.	NAME OF THE STUDENT	signature
1	Dr. RAVINDRA KALESH	
2	Mr. Shardendu Tripathy	Present
3	MR. PRAVIN TRIMALLI	Present
4	MR. SARVESH SHINDE	
5	MISS ARPANA SANDIMANI	
6	MISS RIZWANA SHAIKH	Present
7	MR. ABHISHEK PADWAL	Present
8	SINGH SNEHA SANTOSH	Present
9	VISHWAKARMA RAHUL VINOD	P
10	YELLUMOHANTI MONISH VENKATESH	P
11	ANSARI TASKEEN SAJID ALI	P
12	SHEETAL MAHAPATRA	P
13	VIRAJ THAKRUL	P
14	VIKAS YADAV	P
15	SHAIKH UZMA	P
16	AMIT VISHWAKARMA	P
17	TRIPATHI SHIVAM ANIL	P
18	KHAN SABA	P
19	NETRA NARVEKAR	P
20	VIGNESH SHAAH	P
21	SHIVAM SINGH	P
22	SHAIKH RUKAIYA	P

  
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