



## **M.E.S. ASMABI COLLEGE**

**Re-accredited by NAAC with 'B++' Grade**

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### **National Webinar on “X-ray and its Research Applications”**

#### **Department of Physics – Programme Report**

Date: August 4, 2020

Time: 10:30 AM to 12:45 PM

Venue: Department of Physics, MES Asmabi College, P Vemballur, Kodungallur, Thrissur District, Kerala

#### **Introduction:**

The National Webinar on "X-Ray and Its Research Applications" was organized by the Department of Physics at MES Asmabi College, Thrissur, Kerala. The webinar aimed to provide a platform for participants to explore the applications and significance of X-ray technology in research and various scientific domains. It brought together experts and scholars in the field to share their insights and knowledge with the attendees.

#### **Program Highlights:**

##### **1. Welcome Speech (10:30 AM):**

- Dr. Sheena PA, Head & Associate Professor, Department of Physics, warmly welcomed the participants, setting the tone for the event.

## 2. Presidential Address (10:32 AM):

- Dr. A Biju, the Principal of MES Asmabi College, delivered a presidential address, underlining the importance of the webinar and encouraging academic endeavors in the field of X-ray research.

## 3. Inaugural & Keynote Address (10:35 AM):

- Dr. Sarun PM, an Assistant Professor from the Department of Physics at IIT Dhanbad, presented the inaugural address and delivered a keynote speech. He shared valuable insights into the applications and relevance of X-ray technology in the world of research. Dr. Sarun has been working in the field of X-rays for last 13 years and he made an affluent presentation on the topic "X-rays and its research applications" for the participants of the webinar. Starting with the discovery of X-rays, Dr Sarun went through the general properties and applications, to the extra-galactic sources of x-rays and then finally settled at the research applications. The talk prolonged for nearly two hours which was followed by an effective interaction from the side of participants.

## 4. Interaction with the Resource Person (12:30 PM):

- Following the keynote address, there was an interactive session with Dr. Sarun P.M., providing an opportunity for participants to ask questions and engage in discussions related to X-ray research.

## 5. Vote of Thanks (12:45 PM):

- Dr. Sheeba NH, Coordinator & Associate Professor in the Department of Physics, delivered the vote of thanks. She expressed gratitude to the speakers, participants, and organizers for making the event a success.

## Conclusion:

The National Webinar on "X-Ray and Its Research Applications" was an informative and enlightening event. The participants gained insights into the various research applications of X-ray technology. The program fostered collaboration and knowledge-sharing among experts and scholars in the field, contributing to the growth of scientific research in the region.

Out of 200 registered, nearly 180 participants attended the webinar that included both students and teachers from various colleges within our state with few from outside India E-certificates for the participants were distributed online immediately after the webinar. From the feedback of the participants, 90% commented that the webinar as very useful and informative for them.

#### Acknowledgments:

The success of this webinar was made possible by the dedicated efforts of the organizers and the participation of the speakers and attendees. The commitment to advancing knowledge in the field of X-ray research is commendable, and we look forward to more such informative events in the future.

#### Programme Brochure:

The brochure features a central graphic of a blue sphere with a grid of white dots, resembling a molecular or atomic structure, set against a white background with orange and purple abstract shapes. At the top right, a purple box contains a calendar icon, the date "4 AUGUST 2020", and a clock icon with "10.30 AM". Below this, the text reads "Department of Physics" and "MES ASMABI COLLEGE" in bold, followed by "P. Vemballur, Kodungallur, Trissur Dist., Kerala". The main title "NATIONAL WEBINAR X ray and Its Research Applications" is centered. Below the title is a green speech bubble icon with "PLATFORM" and the URL "https://forms.gle/zbTYjxqhYr3qzYaY8". A portrait of Dr. Sarun P.M. is shown next to his name and title: "Resource Person", "Dr. Sarun P.M.", "Assistant Professor, Dept. of Physics, IIT (ISM) Dhanbad". At the bottom, three names are listed: "Dr. Sheeba N.H. Coordinator", "Dr. Sheena P.A. H.O.D.", and "Dr. A. Biju Principal".

4 AUGUST 2020  
10.30 AM

Department of Physics  
**MES ASMABI COLLEGE**  
P. Vemballur, Kodungallur, Trissur Dist., Kerala

**NATIONAL WEBINAR**  
**X ray and Its**  
**Research Applications**

PLATFORM  
<https://forms.gle/zbTYjxqhYr3qzYaY8>

**Resource Person**  
**Dr. Sarun P.M.**  
Assistant Professor, Dept. of Physics,  
IIT (ISM) Dhanbad

Dr. Sheeba N.H. Coordinator    Dr. Sheena P.A. H.O.D.    Dr. A. Biju Principal

Programme Schedule:



UG Department of Physics  
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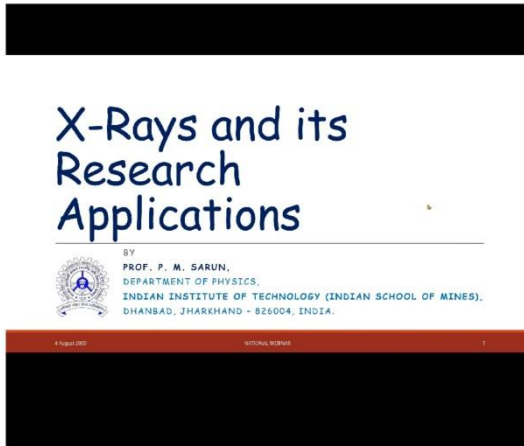


National Webinar on "**X-Ray and its Research Applications**"  
4<sup>th</sup> August 2020

Program

- 10.30 am : Welcome Speech  
Dr. Sheena P A  
(Head & Associate Professor, Department of Physics)
- 10.32 am : Presidential Address  
Dr A Biju  
(Principal, M E S Asmabi College)
- 10.35 am : Inaugural & Keynote address  
Dr. Sarun P M  
(Assistant Professor, Department of Physics, IIT Dhanbad)  
Topic: **X-ray and its Research Applications**
- 11.20 am : Interaction of the participants with the Resource Person
- 11.30 am : Vote of thanks  
Dr. Sheeba N H  
(Coordinator & Associate professor, Department of Physics)

Photos:



(153)

Sheeba N H (You)

Biju A

Prof. P. M. Sarun

Prof. P. M. Sarun

Also in the meeting (149)



(155)

Sheeba N H (You)

### X-Ray Diffraction

- Crystals were studied scientifically as early as the 17th century, but X-ray crystallography didn't take off until the early 20th century, when Max von Laue successfully recorded an X-ray diffraction pattern from a copper sulfate crystal.
- Soon after, Lawrence and William Henry Bragg derived the mathematics to describe this behavior.
- Bragg's Law explains the interactions that occur when the atomic spacing in a crystal is comparable to the wavelength of the incident light, and allows us to reconstruct a crystal structure from its diffraction pattern.
- For their pioneering work, both von Laue and the Braggs won the 1914 and 1915 Nobel Prizes in Physics.
- In 1952, PhD student, **Raymond Gosling**, working under Rosalind Franklin, took the famous Photograph 51, an X-ray diffraction image of crystallized DNA which was essential in determining its structure. All of these contributions laid the groundwork for the modern discipline of X-ray crystallography.

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Sheeba N H (You)