



Department of Physics, Integral University.

Report on *Laser systems and it's Applications*

Resource Person: Dr. MANISH KUMAR PANDAY, Department of Applied Sciences,
Anand Engineering College, Agra, Uttar Pradesh.

Venue: Online

Platform: Youtube

Link: <https://www.youtube.com/watch?v=KYRaiJon8xs>

Date: 11/10/2021

Time: 2:00 PM-3:00 PM

Coordinator: Dr Afroj Ahmed Khan

Summary of Lecture:

LASER (Light Amplification by Stimulated Emission of Radiation) technology is very important in the modern world because it is used in many fields. The incredible uses of laser technology include: barcode scanners, laser printers, optical disk drives, cutting and welding materials, semiconducting chip manufacturing, law enforcement devices, and free-space optical communication. Lasers are also used in DNA sequencing instruments, surgery hair removal products, skin treatments and to give high accuracy results in measuring small and large distances. It is also used for the purpose of generating heat in industrial cutting processes. The medical field uses it in surgical procedures. The laser is used effectively in the treatment of gallbladder and kidney stones.

The laser light intensity at focus is too high and the material response becomes non-linear.

Keeping in mind the above facts, the Department of Physics, Integral University organized an expert lecture on “Lasers Systems and its Applications”.

The program started with a welcome address by Ms. Tahira Khatoon, Department of Physics. In his talk Dr. Manish Kumar Pandey emphasized the importance of basic science & research for the development of engineering applications with specific examples in the case of lasers. Dr. Manish Kumar Pandey, discussed the basics of LASER, types of Laser and their working principles. He also introduced the students to the problems that can be solved using the laser method, providing exclusive examples. In the presentation following topics were covered:

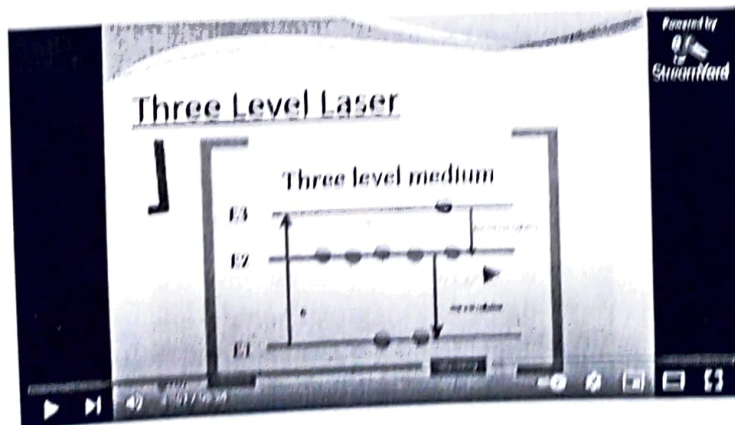
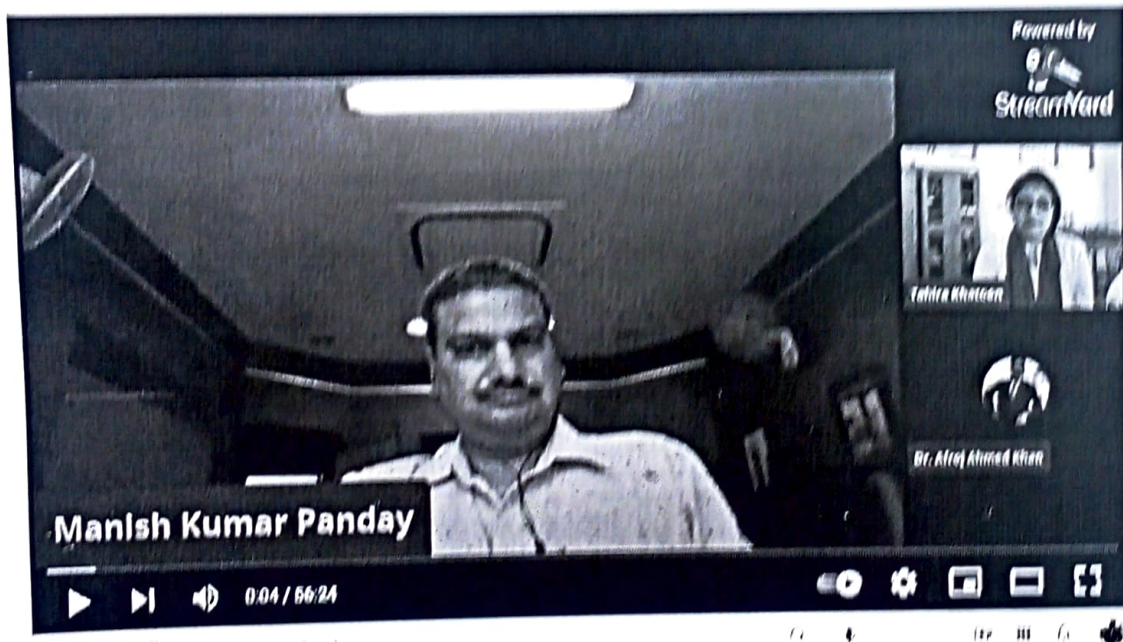
1. What is a laser? 2. Principles of working of a laser 3. Population Inversion 4. Characteristics,

Dr. Manish Kumar Pandey

Dr. Afroj Ahmed Khan

At the end of the lecture, speaker responded to the doubts of faculties and students. The session was concluded with a vote of thanks by Dr. Afroz Ahmed Khan, coordinator of the event, Department of Physics. Our students had a very informative and interactive session with Dr. Manish Kumar Pandey. Outcome of the Guest Lecture:

- Students gained an experience of how real problems can be dealt with, through laser derived sources.
- The Lecture helped in enhancing their working skills
- The students learnt the latest techniques and embraced ideas of interdisciplinary thinking and performance in projects
- Students acquired knowledge about LASER and its working
- Students acquired knowledge of important applications of laser.
- This lecture motivated the students to enjoy their academic sessions on Laser as well, as it is a part of their syllabus also.



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Dr. Afroz Khan
Dr. Manish Kumar Pandey