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# Sarvajani College of Engineering & Technology, Surat

Instrumentation & Control Department

Report on R&D Talk

On

Superconductivity: Current Research  
Trends and Applications

## **Event Detail**

**Date:** 6<sup>th</sup> April, 2023

**Time:** 10: 15 am to 11:45 pm

**Venue:** EC AV Room

**Expert :** Kumud Singh, Scientific Officer(G),  
Electromagnetic Applications & Instrumentation Division, Bhabha  
Atomic Research Centre, Trombay

**Participants:** 25 students of BTech II, and BE III, Faculties from  
IC, EC, Physics

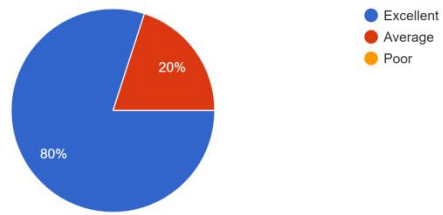
Ms. Kumud Singh, after graduating from SCET(I&C) joined post diploma in Nuclear Engineering at BARC in 2006. She is working in the field of Electromagnetics & Particle Accelerator technology. Her research work includes Superconducting focusing lenses for specific applications, magnetic sensors and devices, ion-sources & accelerator technology. She has also worked in Fermi Accelerator National Laboratory (FNAL), US as guest scientist. She has over 20 publications in international journal and conferences and also a recipient of DAE Young Applied Scientist/Technologist Award.

The objective of the lecture was to give students to show the applications of superconductive material in various areas. The Kumud Singh explained the superconductive property of some materials like Niobium, Niobium-tin, titanium and their effects with temperature change. There are various application areas of superconductive materials as particle accelerator, electromagnets, magnetic levitation, transmission of electric power, superconducting transformers. According to her talk one has to maintain the low temperature to preserve the superconductive property of material usually in the presence of helium gas. Superconductivity has been observed only at frigid temperatures or crushing pressures. Latest research is going on to find the material which would possess superconductivity at room temperature, but it may take number of years to be used for various applications. The Kumud also shared her experience at BARC as instrumentation engineer with students and showed the way to get into such organization. The overall talk was very informative and motivating for students.

Total 25 students and many faculties attended the lecture. The feedback form was sent to students in their Email. Only 10 students have replied yet, whose responses are shown below.

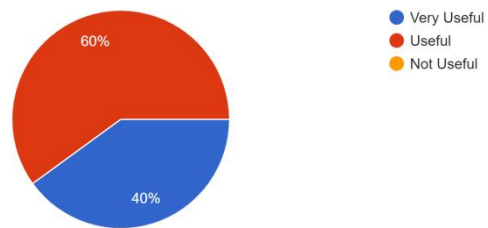
How do you evaluate the expert talk?

10 responses



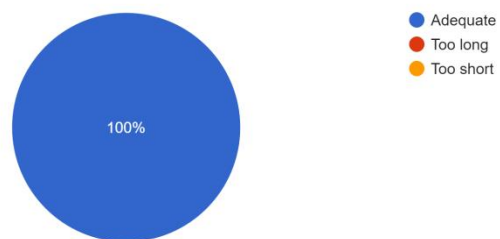
Did you gain in terms of knowledge increase from Expert Sessions?

10 responses



How would you rate the time given to expert session?

10 responses



Glimpses of the lectures:

