



# CIRCULAR DICHROISM (CD) AND MOSSBAUER SPECTROSCOPY FOR CHEMISTS

**PROF. ARNAB DUTTA**  
Department of Chemistry  
IIT Bombay

**PRE-REQUISITES :** BSc or BTech

**INTENDED AUDIENCE :** Chemistry and chemical engineering masters students Chemistry PhD students

## **COURSE OUTLINE :**

In this course, we are going to discuss the fundamentals of two unique spectroscopic techniques: Circular Dichroism (CD) and Mossbauer spectroscopy. These techniques are becoming essential for deciphering the structural dynamics of inorganic complexes in recent times.

## **ABOUT INSTRUCTOR :**

Prof. Arnab Dutta is an associate professor in the chemistry department, IIT Bombay. His research interest lies in the field of bio-inorganic chemistry. He specializes in teaching the courses belonging to inorganic chemistry.

## **COURSE PLAN :**

- Week 1:** Optical rotation, Optical rotatory dispersion
- Week 2:** Cotton effect, Circular Dichroism (CD)
- Week 3:** Physical origin of CD
- Week 4:** Examples of CD spectroscopy for inorganic molecules
- Week 5:** Applications of CD spectroscopy-I
- Week 6:** Applications of CD spectroscopy-II
- Week 7:** Mossbauer Spectroscopy: Basic principle
- Week 8:** Isomer Shift
- Week 9:** Quadrupolar Splitting
- Week 10:** Examples of Mossbauer Spectra analysis-I
- Week 11:** Examples of Mossbauer Spectra analysis-II
- Week 12:** Applications of Mossbauer Spectroscopy