



**CHEMISTRY &
BIOCHEMISTRY**

Basics of Fluorescence Spectroscopy

Type of Course	: New
Course Snapshot	: Core / UG
Pre-requisites	: BS/B.Sc. Knowledge of basic quantum mechanics
Course Duration	: 20 hours / 8weeks
Industry Support	: Systronics India LTD. Premier Colorscan Instruments Pvt. Ltd.

COURSE OUTLINE:

Fluorescence refers to light emission by substance after the absorption of electromagnetic radiation. Due to its environmental sensitivity and time resolved capability, fluorescence spectroscopy is now been widely applied to chemistry, biochemistry, biophysics, material science, forensic science, medicinal science, etc. Although fluorescence spectroscopy is used in many disciplines, this particular course is intended for the individuals willing to receive an in-depth introduction to the principles of fluorescence spectroscopy and its applications to chemistry and biology.

INSTRUCTOR:

Prof. Pratik Sen
Department of Chemistry
IIT Kanpur



ABOUT INSTRUCTOR:

Prof. Pratik Sen earned Ph.D. degree from Indian Association for the Cultivation of Science, Kolkata, India in 2006. Then he moved to RIKEN, Japan for his post-doctoral research work as a JSPS fellow. Presently he holds the position of associate professor in Department of Chemistry, IIT Kanpur.

COURSE PLAN:

- Week 1 : Introduction to Fluorescence
- Week 2 : Instrumentation for Fluorescence Spectroscopy
- Week 3 : Time-Domain Lifetime Measurements
- Week 4 : Solvent and Environmental Effects
- Week 5 : Fluorescence Quenching
- Week 6 : Fluorescence Anisotropy
- Week 7 : Energy Transfer
- Week 8 : Single-Molecule Fluorescence