

BT 620

Biosensors

(3-0-0-6)

Syllabus:

Introduction; General configuration of biosensor; Generations of biosensors; Basic principle and instrumentation of different biosensors: electrochemical, optical, acoustic, piezoelectric, and calorimetric biosensors; Biological recognition systems: enzyme, antibody, nucleic acid, cell, and tissue; Properties of ideal materials for biosensors; Classes of materials for biosensors: polymers, material containing metal complex, sol-gel materials, nano-materials, composite materials, metal oxides, photonic crystals, and zeolite materials; Application of biosensors for food and fermentation processes, environment monitoring, and clinical diagnostics.

Text books:

1. Biosensors and modern bio-specific analytical techniques, L. Gorton (ed) Volume XLIV Elsevier 2005.
2. Advances in biosensors, B. D. Malhotra & A. P. F. Turner (eds), Volume 5, Elsevier science 2003.

References:

1. Articles from the journals like, Biosensors, Biosensors and Bioelectronics.