

## 14P1WPH213 Conducting Polymers

<b>Subject Code</b>	14P1WPH213		
<b>Subject Name</b>	Conducting Polymers		
<b>Credits</b>	3	<b>Contact Hours</b>	3
<b>Module No.</b>	<b>Subtitle of the Module</b>	<b>Topics</b>	
1.	<b>Fundamentals of Polymers:</b>	Polymer raw materials, Polymerization principles and processes (step, chain and other polymerizations, polymer kinetics), Polymerization techniques, Polymer structure and property, Multicomponent polymeric materials, Polymer compounding and fabrication	
2.	<b>Conducting Polymers</b>	Introduction, Need of conducting polymers, Methods of synthesis of CPs, Properties of conducting polymers, Structure-property relationship, Types of conducting polymers, e.g. Polyaniline (PANi), Polypyrrol (PPy), Polythiophene (PTh).	
3.	<b>Analytical Techniques for Polymers</b>	Raman spectroscopy, Liquid gas chromatography, UV-VIS spectroscopy, DTA/TGA/DSG, C-V measurement. Impedance spectroscopy, Fourier Transform Infra red spectroscopy, X-ray photoelectron spectroscopy, Scanning electron microscopy, Transmission electron microscopy.	

<b>Recommended Reading</b> (Books/Journals/Reports/Websites etc.: Author(s), Title, Edition, Publisher, Year of Publication etc. in IEEE format)	
1.	Polymers by G. Whitmore.
2.	Organic Polymer Chemistry by Jagdamba Singh, R.C. Dubey.
3.	Hand book of Conducting Polymers by Terje A. Skoyheim.
4.	Hand book of Polymer Synthesis (Part B) by Hans Kricheldorf, Dekker