

**PTX8J002**

**INTELLIGENT AND FUNCTIONAL TEXTILE**

**Module-1**

Definition of smart and intelligent textiles, Passive and active functionality, Textile with high protection and comfort properties, Extreme winter clothing with low heat transmission, heat absorbing, heat storing systems.

Phase change materials, incorporation of PCMs in fibres and fabrics.

**Module-2**

Breathable textile. Multifunctional textiles with incorporated electronics for integrated communication, music, health monitoring, defence support functions, wearable computers.

Environmentally sensitive textiles- photochromic and thermochromic (chameleonic) fabrics, camouflage (radar shielding) fabrics, variable heat absorption surfaces, stimuli sensitive polymers such as temperature, pH, ionic, magnetic sensitive materials, design and their applications to textile.

**Module-3**

Fibres as solar cells, Recent advances in multifunctional textiles.

**Books Recommended:**

1. X. Tao, Xiaoming Tao ,” Smart Fibres, Fabrics, And Clothing”, Woodhead publishing (2001).
2. Jinlian Hu , “Adaptive and Functi polymers, Textiles and Their Applications”, imperial college press (2011).  
Page | 53
3. Tao Xiaoming, “Wearable Electronics And Photonics”, Woodhead publishing limited (2005).
4. H. Mattila, H. Mattila, “ Intelligent Textiles and Clothing”, CRC press (2006).
5. Vincenzini, “Smart Textiles”, Trans tech pub ltd (2009).