

16P1WPH211 Advances in Nanotechnology

Subject Code	16P1WPH211	
Credits	3	Contact Hours: 03
Module No.	Subtitle of the Module	Topics
1.	Common Feature of Low-Dimensional nanomaterials	Intriguing Phenomena in Quantum Dots and Potential Applications, Advantages and Challenges of Technological Applications ZnO, ZnS, CdX (X=S, Se, Te), Excitonic Character and Numerical Approaches to Quantum Dots. Metal Chalcogenide quantum dots.
2.	Techniques	(Physical and Chemical techniques) to synthesize QDs, 1-D, 2-D, 3-D nanostructures. Optimization of yield; temperature, chemical, photo-stability of the yield. Composition analysis of the yield
3.	How to use the yield	Preparation of films and devices. Study of various methods and parameters to optimize the film and device characteristics
4.	Technological applications	Technological applications of nanostructures in light harvesting, spintronics, batteries, hydrogen energy, optoelectronics, biomedical arena etc.

Recommended Reading (Books/Journals/Reports/Websites etc.: Author(s), Title, Edition, Publisher, Year of Publication etc. in IEEE format)	
1.	Nanotechnology: Quantum Dots Vs Nanotubes by S.V. Kilina & B.F. Habenicht, Pan Stanford publishing.
2.	Introduction of nanomaterials, by Cao
3.	Nanosopic Materials: Size-dependent Phenomena by Emil Roduner, RSC Publishing.
4.	Nanomaterials Handbook by Y. Gogotsi, CRC Taylor & Francis Publisher.
5.	Hand book of nanotechnology by Bhushan.
6.	Introduction of nanomaterials, by Cao.
7.	Published Research papers in different journals.