SUMMER TRAINING (6 Weeks) – 2016

NANOELECTRONICS

DAY	THEORY	PRACTICAL
	WEEK – 1	
1	Introduction Nanoscience and Nanotechnology	VNL Demo
2	Nano Electronics	
3	Scale of Nanotechnology and Dimensionality (0D, 1D, 2D)	
4	Size dependent phenomena.	
5	Spintronics and quantum computing	Lab- Exercise
	WEEK – 2	
6	Top Down and Bottom Up approaches	Lab- Exercise
7	Nucleation: homogeneous and non-homogeneous	Lab- Exercise
8	Thin Film Deposition	Lab- Exercise
9	Physical Methods	Lab- Exercise
10	E-beam and Ion Beam Lithograph	Lab- Exercise
	WEEK – 3	
11	Ball Milling Technique	Lab- Exercise
12	Etching Techniques	Lab- Exercise
13	Introduction Characterization Tools	Lab- Exercise
14	SEM,TEM and EDX,	Lab- Exercise
15	AFM, FTIR, UV/Vis	Lab- Exercise
	WEEK – 4	
16	Quantum Electronic Devices	Lab- Exercise
17	Single Electron Transistors	Lab- Exercise
18	Quantum Computers: Working of Quantum Computer, Difference Between Quantum and Classical	Lab- Exercise
19	3D Optical Memory	Lab- Exercise
20	Nanoscale Motors, Nanovalves;	Lab- Exercise
	WEEK – 5-6	
Projects based on NanoElectronics		