

Semi conductors -

Electrical properties are intermediate between the electrical conductors & insulators .

Ge, Si, GaAs

Bio materials : employed in components implanted into the human body

not produce toxic substances , compatible with body tissues

Advanced Materials :

Utilized in high technology (Hi-Tech) Applications

act on relatively intricate & sophisticated principles

VCR, CD players, computers, fiber optic system, space craft, aircraft, military rocketry .

Smart Materials :

Sense changes in their environment & then respond to these changes in predetermined manner

Include sensor (to detect an input signal) & an Actuator (to perform a responsive & adaptive function)

Common actuators:

Shape memory alloy, piezoelectric ceramics
magnetostrictive materials, electrorheological /
magnetorheological materials

Nanotechnology :

10^{-9} m

Nanomaterials

1-100 nm

Carbon nanotubes