



# APPLICATION OF NANOMATERIALS





# Nanomaterials in agriculture

Nanoporous Zeolites for slow release and efficient dosage of water and fertilizers for plants and of nutrients and drugs for drugs for live stocks.

- Nano sensors for soil quality and for plant health monitoring
- Nano magnets for removal of soil contaminants

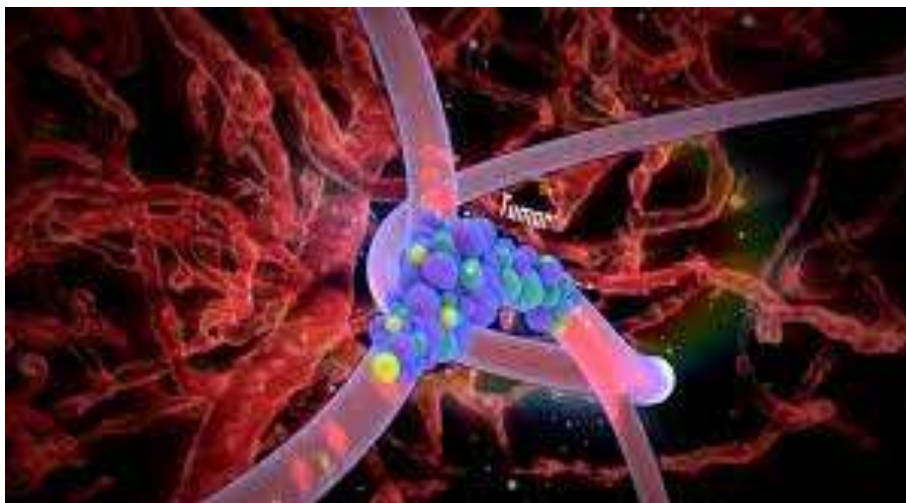




# Drug Delivery

Drugs normally injected can be ingested.

- The rate at which the drug stays in the body can be manipulated.
- Provides for lower doses needed



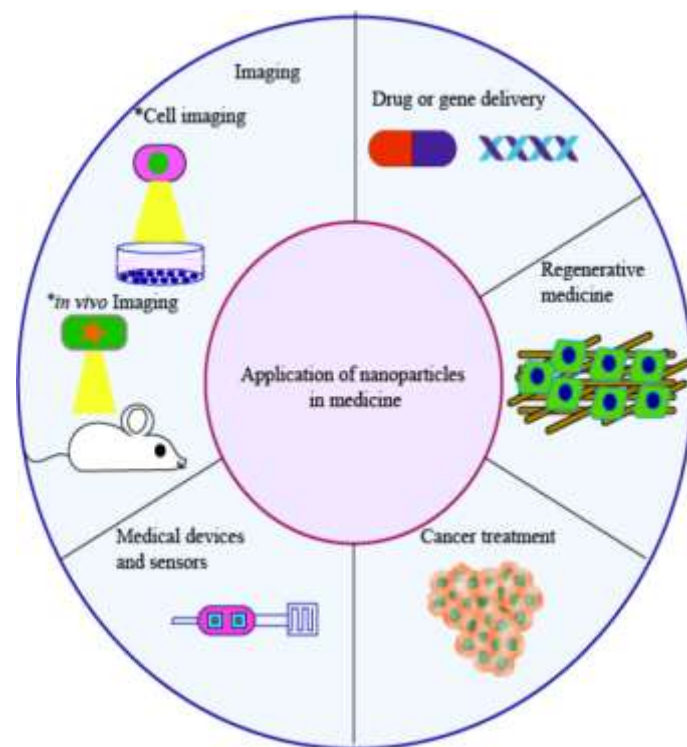
## Drug Delivery



# Nanomaterials in Medicine

Nanomaterials are used as drug for curing cancer, gold coated nano shells are used for the destruction of tumours.

- Gold nanoshells are used to analysis the protein and blood content
- Nanomaterials are used as bone cement, bone plates and joint replacement
- Nanomaterials are also used for the manufacturing of heart valves, contact lenses etc
- Nanomaterials are also used in dental implants and breast implants
- In tissue engineering ,nanomaterials are used to reproduce or to repair the damaged tissues





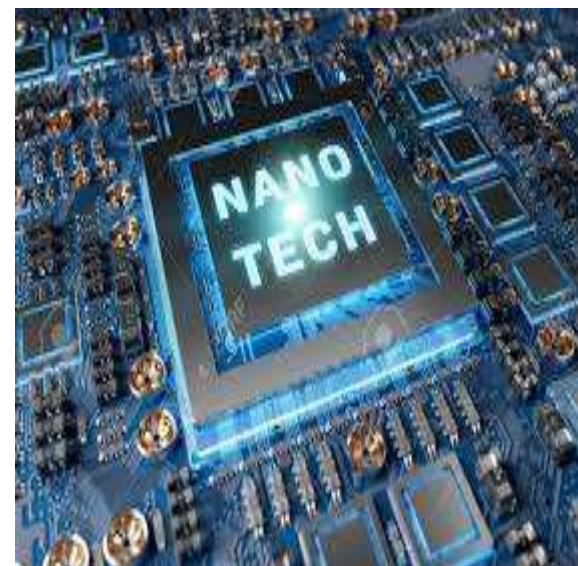
# Nanotechnology in Electronics

The technology made the devices very light making the product easy to carry or move and at the same time it has reduced the power requirement.

- Some Consumer Products which are using Nanotechnology:

- ✓ Computer Hardware
- ✓ Display Devices
- ✓ Mobile & Communication Products
- ✓ Audio Products
- ✓ Camera & Films

- Can also be used to create devices known as nano electromechanical systems or **NEMS**
  - which are related to micro electromechanical systems or **MEMS** -practically used to make electronics components.





# Nanoparticles in Cancer Treatments

Nanoparticles known as Aurashells® are directly injected into the body.

- Localize around tumor because of its “leaky” vasculature.
- Laser emitting infrared waves is inserted into tumor and turned on.
- Nanoparticles heat up and destroy cells.

