

A large, white, lowercase 'v' is centered on a grey rectangular background.

v

The word 'Vizle' is written in white, lowercase letters on a light green rectangular background.

Vizle



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Vibration may be due to one or many of following factors

- ① Large ratio of surface to volume
- ② Quantum Confinement
- ③ Large surface energy
- ④ Reduced Impurities

Mechanical Properties

→ The mechanical properties of nano-materials may lack tensile strength which are one or 2 orders of magnitude higher than that of single crystal in bulk form. The absence of mechanical strength is mainly due to reduced probability of defects.

→ In nanomaterials, mechanical properties like hardness, fracture toughness

... of ...
... the excitation can
... translational motion &
... rotational motion

Nanomaterials

... slow remarkable specific
... different from these bulk
... can be due to large
... atoms, large surface
... front & reduced imperfections
... materials depend on the
... that contribute to
... nanomaterials
... in physical properties

Mechanical

→ The mechanical properties
may such that all strength
or 2 orders of magnitude
of single crystal in bulk
in mechanical strength
reduced probability of defects

→ In nanomaterials, mechanical properties like modulus,
Young's modulus, yield strength, fracture toughness
show significant variation
as compared to bulk materials. Strength of metal enhances.
... as strong
... of metals,
... have lower
... than bulk form,

Electrical Properties

Size plays an important role in the electrical properties of nano materials which is based on 4 mechanisms. They are surface scattering, change in electronic structure, quantum transport & effect of microstructure.

- Elect. conductivity decreases with a reduced dimension due to increased surface scattering & change of electronic structure.
- However, the conductivity can be increased by introducing microstructure.
- ⇒ As the size of the nanostructure decreases, the band gap increases.

This is mainly due to the fact that as the size of the system becomes smaller, the other is surface plasmon resonance.

The variety of noble metal nanoparticles & silver solutions are used in Surface Plasmon Resonance (SPR).

- ⇒ The SPR is a dipolar oscillation of the conduction electrons in a metal particle below the negative surface plasmon energy and its positive energy.
- ⇒ Plasmon is a quantum of collective excitation in a metal system composed of positive ions and conduction electrons.
- ⇒ When size of a metal particle is smaller than the wavelength of light, the surface plasmon resonance (SPR) occurs.
- ⇒ The energy level separates the surface plasmon resonance from the bulk plasmon.



Electrical

Size plays a role in the electrical properties which is based on the atomic structure. The effect of microstructures decreases with a due to increased surface of electronic structure.

Electrical conductivity can be better ending in microstructures with natural voids in size. Energy bands are separated by energy bands and the gap size decreases.

This is...
 => One...
 The...
 & silver...
 Surface Plasmon

- => The SPR is a dipolar particle blue the negative ones and its positively
- => Plasmon is a quantum result of collective excitation system composed of positive
- => When size of a metal is smaller than the wavelength of surface plasmon resonance
- => The energy level separation



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