

## Why is the study of nanoscale phenomena an interdisciplinary exercise?

Nanoscale phenomena represent convergence of different scientific disciplines such as solid state chemistry, colloid chemistry, matter-radiation interactions, crystallography, chemical bonding, thermodynamics, quantum mechanics and microbiology. Each of these provides the explanation of certain cause-effect relationships in the nano-size systems. Good understanding of these knowledge interfaces will provide sound judgment as to the characteristics of nano-particles derived from bulk phase materials. Figure below shows the contribution of different disciplines to nanotechnology.

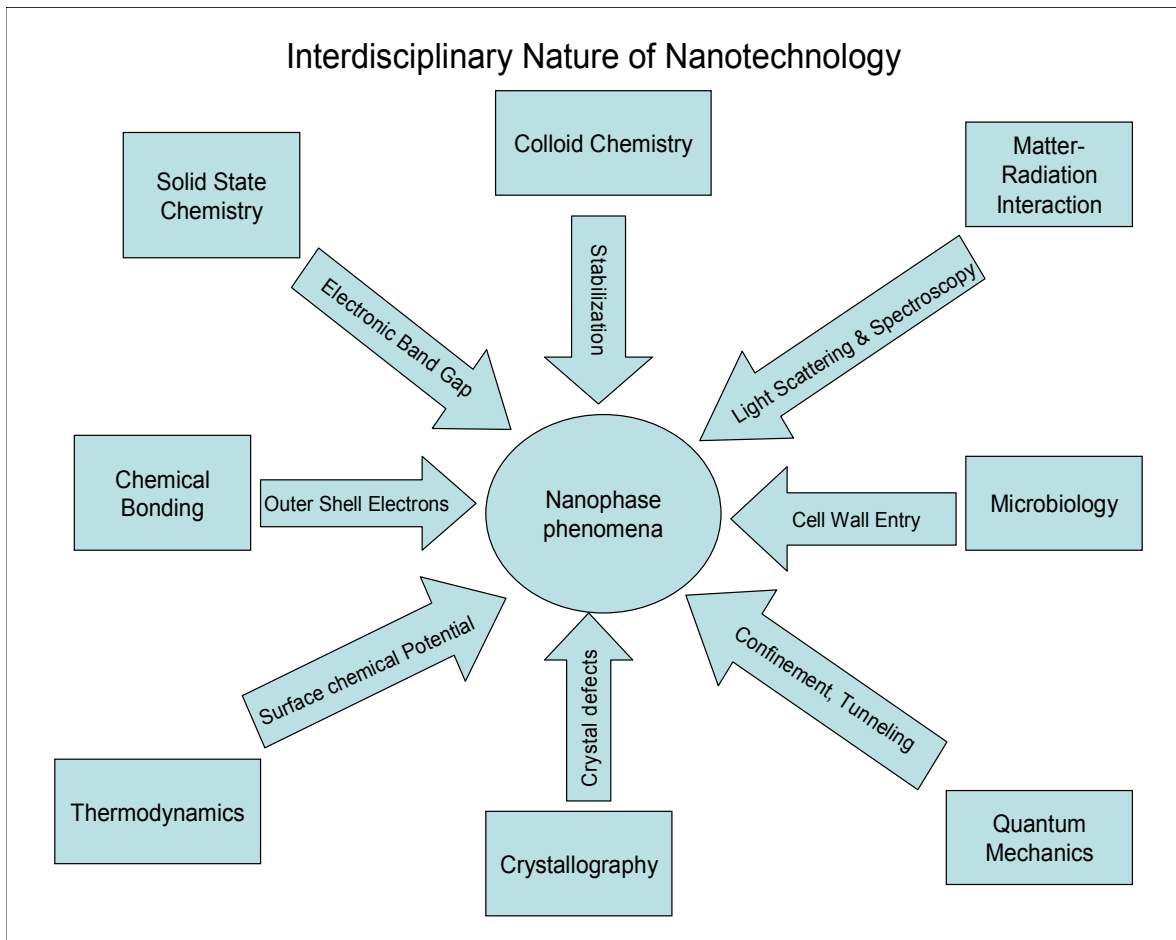


Figure: Interdisciplinary nature of nanotechnology

With the above background, it will be important to begin the exploration with the all important question: Why are the properties at the nanoscale different than the bulk scale?

