INTRODUCTION TO PHYSICAL CHEMISTRY

Physical chemistry is the most basic form of chemistry. It involves the study of macroscopic, atomic, subatomic, and particulate phenomena in chemical system in terms of the principles, practices and concepts of physics such as motion, energy, force, time, thermodynamics, quantum physics, statistical mechanics, analytical dynamics, and chemical equilibrium.

Some of the relationships that physical chemistry strives to resolve includes the effects of

1. Intermolecular forces that act upon the physical properties of materials (plasticity, tensile strength, surface tension in liquids).
2. Reaction kinetics on the rate of a reaction.
3. The identity of ions and the electrical conductivity of materials.
4. Surface science and electrochemistry of cell membranes.

5. Interaction of one body with another in terms of quantities of heat and work called thermodynamics.
6. Transfer of heat between a chemical system and its surroundings during change of phase or chemical reaction taking place called thermochemistry.
7. Study of colligative properties of number of species present in solution.
8. Number of phases; number of components and degree of freedom (or variance) can be correlated with one another with help of phase rule.
9. Reactions of electrochemical cells.