

- *Chemical kinetics*
 - *The rates of chemical reactions*
 - *Experimental techniques for determination the rate*
 - *Rate-law and rate constant*
 - *Reaction order*
 - *Determination of the rate law*
 - *Integrated rate laws*
 - *1st –order reaction*
 - *Half-lives*
 - *2nd –order reaction equation(equal and nonequal concentration)*
 - *3rd – order reaction*
 - *Half-order reactions*
 - *3/2 or 5/2 order reaction*
 - *Complex reaction*
 - *Consecutive complex reaction*
 - *Parallel complex reaction*
 - *Reversible reaction*
 - *Chain-reactions*
 - *The temperature dependence of reaction rate*
 - *Arrhenius equation and parameters*
 - *Mechanism of chemical reaction*
 - *Rate –determining step*
 - *Steady – state approximate*
 - *Pre-equilibrium mechanism*
- *Molecular reaction dynamics*
 - *Collision theory*
 - *Unimolecular reaction*
 - *Lindmann-Hiushlood theory*
 - *Transition – state theory*
 - *Partition function*
 - *Comparison between collision and transition theories*
- *Kinetic of catalyzed reaction*
 - *Homogeneous catalyzed reaction*
 - *Heterogeneous catalyzed reaction*
 - *Enzyme catalyzed reaction*
- *Chemical kinetics of solution reaction*
 - *Solvent effect and dielectric constant*
 - *ΔH^* , ΔS^* , ΔG^* of the activated complex*
 - *Molecular reaction dynamics*
 - *Molecular and statistical approach to the theories*
 - *Collision theory*
 - *Assumption of collision theory*
 - *Cross-section collision*

- *Total number of collision per unit time per unit volume.*
- *Sufficiently energetic collision fraction*
- *Fault reasons of collision theory*
- *Uni.-molecular reaction and collision theory*
- *Lindemann-Hinshelwood theory*
- *Solution reaction and collision theory*
- *Diffusion controlled reaction*
- *Collision theory and Arrhenius equation*
- *Transition – state theory (Activated complex theory)*
- *Assumption of transition state theory*
- *Activated complex*
- *Activated energy*
- *Partition functions*
- *Transnational partition function*
- *Rotational partition function*
- *Vibrational partition function*
- *Rate law in term of transition state theory*
- *Comparison between collision theory and transition state theory*
- *Degree of freedom*
- *Eyring equation*
- *Thermodynamics function and transition state theory*
- *Gibbs free energy of activated complex*
- *Enthalpy function of activated complex*
- *Entropy function of activated complex*
- *Solution reaction and transition state theory*
- *Effect of solvent through dielectric constant*
- *Effect of solute through ionic strength*
- *Statical interrelation of theories.*
- *Statical energy surface.*

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