

Chemical Kinetics

I. Chemical kinetics

- average rate
- factors that affect reaction rate

II. Rate and concentration

- rate law (differential rate law)
- reaction order
- method of initial rates

III. Integrated rate laws

- first order
- second order
- zero order
- graphical methods for determining reaction order
- half – life ($t_{1/2}$)

IV. Rate and temperature

- collision model
 - activation energy (E_a)
 - transition state (activated complex)
- Arrhenius equation

V. Reaction mechanism

- reaction intermediate
- molecularity
- the rate law and the mechanism
 - rate – determining step

VI. Catalysis