

Defining Chemistry and Equilibrium

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Studying the Transformation of matter (Reaction):

→ **through time**: chemical kinetics

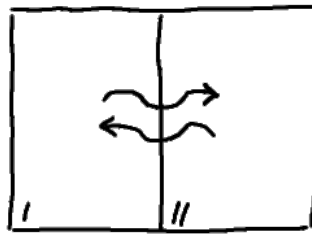
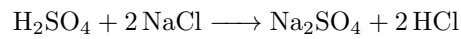
→ **through space**: chemical engineering

Using a catalyst to increase the rate of a chemical reaction:

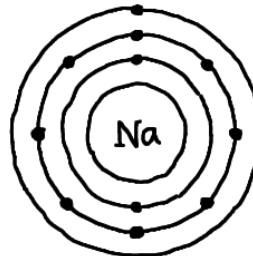


A chemical reaction happens between atoms.

Chemistry is the preservation of the atom \neq nuclear physics



(a)



(b)

Figure 1: (A) THE GOAL OF OSMOSIS IS EQUILIBRIUM (B) RUTHERFORD'S MODEL

I : high concentration solution

II : low concentration solution

the placement of electrons in layers: 2 – 8 – 18 – 32

The lowest point of energy consumption within a system is the state of physical equilibrium. Minimas are equilibrium points: The sum of vectorial forces is equal to 0. The state of optimization of system is the absence of fluctuation over time of certain parameters.

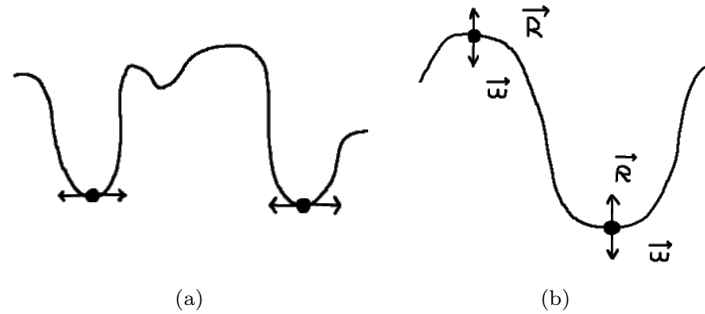
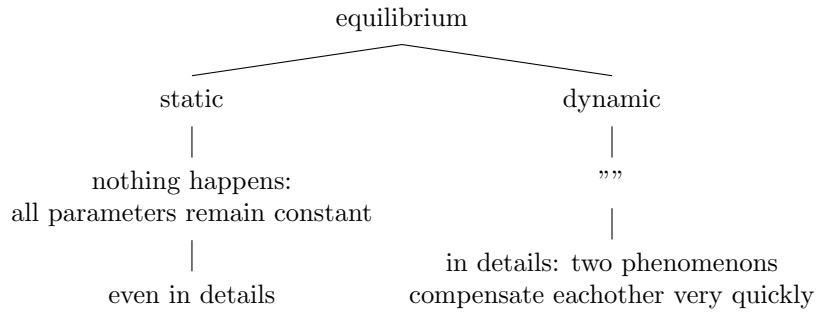


Figure 2: (A) ROLLERCOASTERS (B) THE MINIMA IS THE STABLE EQUILIBRIUM POINT



An example of dynamic equilibrium: marriage and divorce statistics in a city. The scale of the study influences the perception of it results.