Diffusional Processes

$\text{H}_2 + \text{CO} + \text{CO}_2 \rightarrow \text{H}$

hydrogen separation membrane

Diffusional Processes

$C_A$ $t = 0$

$C_B$

$C_A$ $t > 0$

$C_B$
Atomistics of diffusion

Random walk

planes of atoms
tracer species with a concentration gradient
c = concentration#/cm³
n = #/cm² # density in the plane
n = nc
n₁ = on plane (1)
n₂ = on plane (2)

Mechanisms of Diffusion

Vacancy
net transport
vacancy to right
atom to left

Interstitial (self or impurity)