

223 M1310 (223 D1310)

高等物理化學(專論)一 (3 學分)

(Discussion in)Advanced Physical Chemistry (I)(3)

中文	英文
<p><u>核心教材</u></p> <p>熱力學三定律、自由能、化學位勢、一階相變、相圖、化學平衡、統計力學、平衡波茲曼分布、常見系綜、統計熱力學、理想氣體、理想溶液、反應平衡常數。</p> <p><u>選擇性教材</u></p> <p>表面熱力學與統計力學模型、低溫理想氣體與量子統計、固體晶格震動與比熱、金屬電子與比熱、電解質溶液、非理想氣體、簡單液體、凡得瓦氣體與相變、二階相變與臨界現象、重整化群與臨界現象、相變動力學、布朗運動與隨機過程、線性響應與非平衡統計力學、擾動及消散。</p>	<p><u>Cores materials</u></p> <p>The laws of thermodynamics, free energy, chemical potential, first-order phase transition, phase diagram, chemical equilibrium, statistical mechanics, equilibrium Boltzmann distribution, ensembles, statistical thermodynamics, ideal gas, ideal solution, equilibrium constant.</p> <p><u>Optional materials</u></p> <p>Surface thermodynamics and statistical models, ideal gas at low temperature and quantum statistics, crystal vibration and specific heat, specific heat of conducting electron in metals, electrolyte solution, non-ideal gas, simple liquids, van der Waals fluid and phase transition, second-order phase transition and critical phenomena, phase ordering dynamics, Brownian motion and stochastic process, linear response theory and non-equilibrium statistical mechanics, fluctuation and dissipation.</p>