Thermodynamics

Describe a system

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A system is a particular part of the universe.

Thermodynamics

Describe the surroundings of a system

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The part of the universe which is outside (i.e. surrounding) a system.

Thermodynamics

Describe the boundary of a system

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The boundary (or wall) of a system is the thing which separates it from its surroundings.

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Thermodynamics

Describe a closed system

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A closed system is a system where no matter is exchanged, only energy.

Thermodynamics

Describe how adiabatic walls.

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Adiabatic walls prevent thermal interaction (i.e. heat exchange)

Thermodynamics

at type of walls does a thermally isolated system have?

What type of walls does a thermally isolated system have?

A thermally isolated system has adiabatic walls.

Electromagnetism

What is Maxwell's II and what does it tell us?

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$$\nabla \cdot \mathbf{B} = 0$$

Statistical Mechanics

equilibrium entropy of an isolated system of N constituents with energy E?

What is the equilibrium entropy of an isolated system of N constituents with energy E?

$S(N, E) = kln\Omega(N, E, \alpha*)$

Diffraction physics

Define the electric displacement of a dialectric.

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$$\underline{D} = \epsilon_0 \underline{E} + \underline{P}$$

Where $\underline{E}$ = Electric field , $\underline{P}$ = Polarisation

Diffraction Physics

What are the refractive indices of MgF_2 and Al_2O_3 ?

Define the electric displacement of a dialectric

Table 1: default

	n	
Magnesium Fluoride	MgF_2	1.38
Aluminium Oxide	Al_2O_3	1.62