Introduction

Transfer function

Transfer function(from stimulus/measurement quantity to electrical output signal) and inverse transfer function

Thermodynamics basics

What is thermal equilibrium?

The laws of thermodynamics

Zeroth law, refrigerator example

First law, equation is given here, the internal energy U of a closed system is constant, dU =

Second law

Entropy S, entropic energy : product of temperature and entropy,

T\*dS = dQ +dWdiss. Or T\*dS > dQ

Equilibrium states of a system

Coffee example here, time and path don’t play a role for the system to reach equilibrium

Ideal gas equation

P\*v = n\*R\*T = constant(T)

Or in the situation of the diagram, P1\*V1/T1 = P2…….

Remember the math

Partial equation here, df(x,y) = …

Thermal energies of particles

Equipartition theorem

The internal energy U

Describes the total energy of a system,

U(T,n) = (m\*(1/2) \* R)\*n\*T

dU = Text, whiteboard

Description automatically generated

Graphical user interface, application

Description automatically generated