ChE 120 Notes: Introduction to Process Analyses

22 Feb. 2000

Loose Ends: (we discussed pressure measurement, briefly)

Measurement of Temperature

Thermocouple & RTD's (electronic)
Infrared
Thermometers
etc.

Measurement of Composition

Mass Spectrometry
Infrared & other Specific detectors
Gas Chromatography
etc.

Measurement of Flow

Direct
Indirect (pressure[pitot, ΔP], Doppler)
etc.

A to D's

Analog to Digital
DIO (on-off)
Digital to Analog (D to A)
Some Process Definitions:

1- Batch
   not s.s. or not…
   react time
   purity/control
2- SemiBatch
   sat., feed (initiator) limiting, tanks
3- Continuous
   Transient
   including Start-up
   Steady State we will focus here, for now!

Choose the System(s)
   Usually several choices
   Several possible sets of "boundaries"

Identify Inlets and Outlets
   For each "System"
   Crossing boundaries

Balances
   Mass (one equation)
   Components (one for each)
   How many equations and unknowns ??????