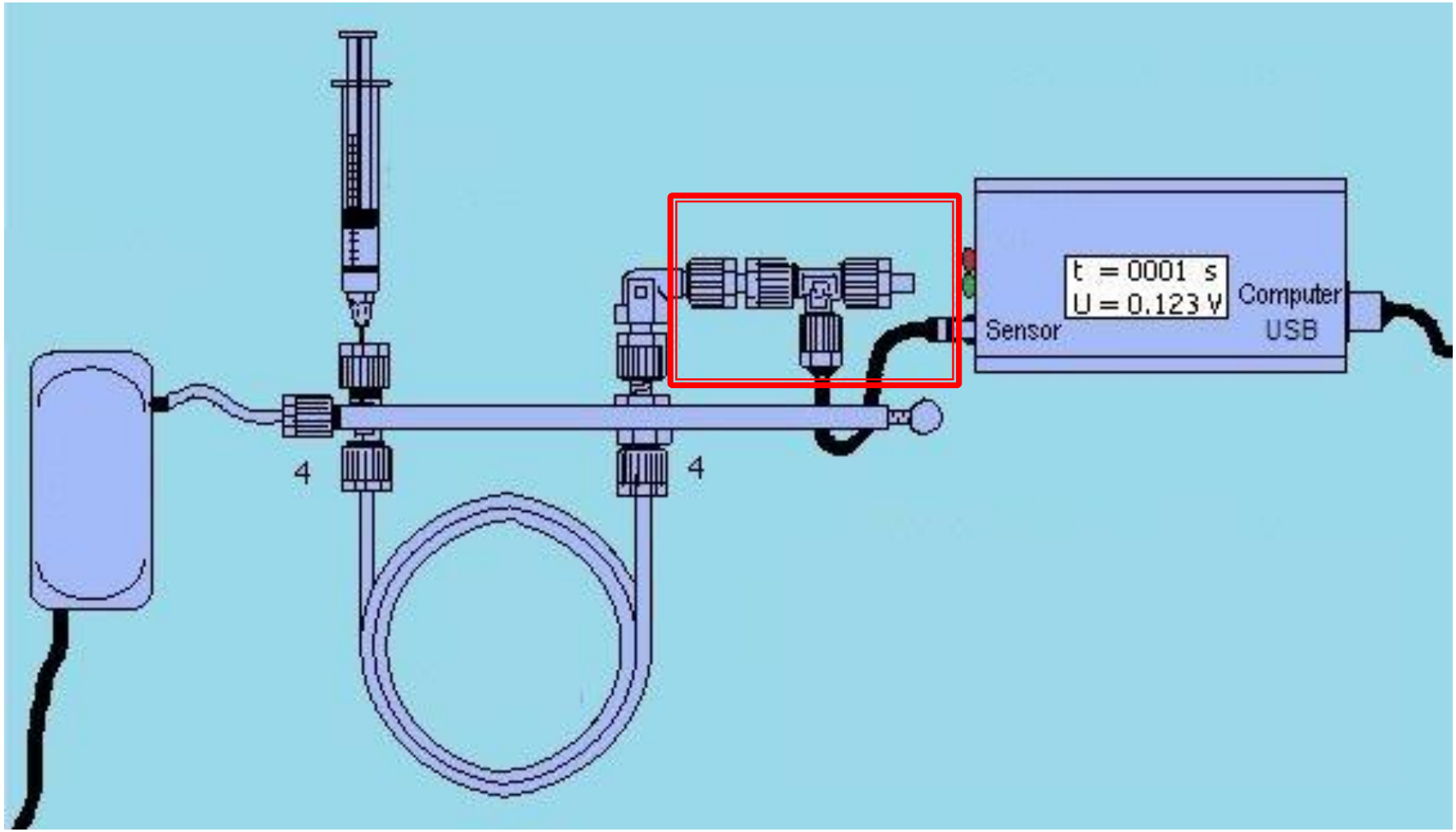
Thermal Conductivity Detector



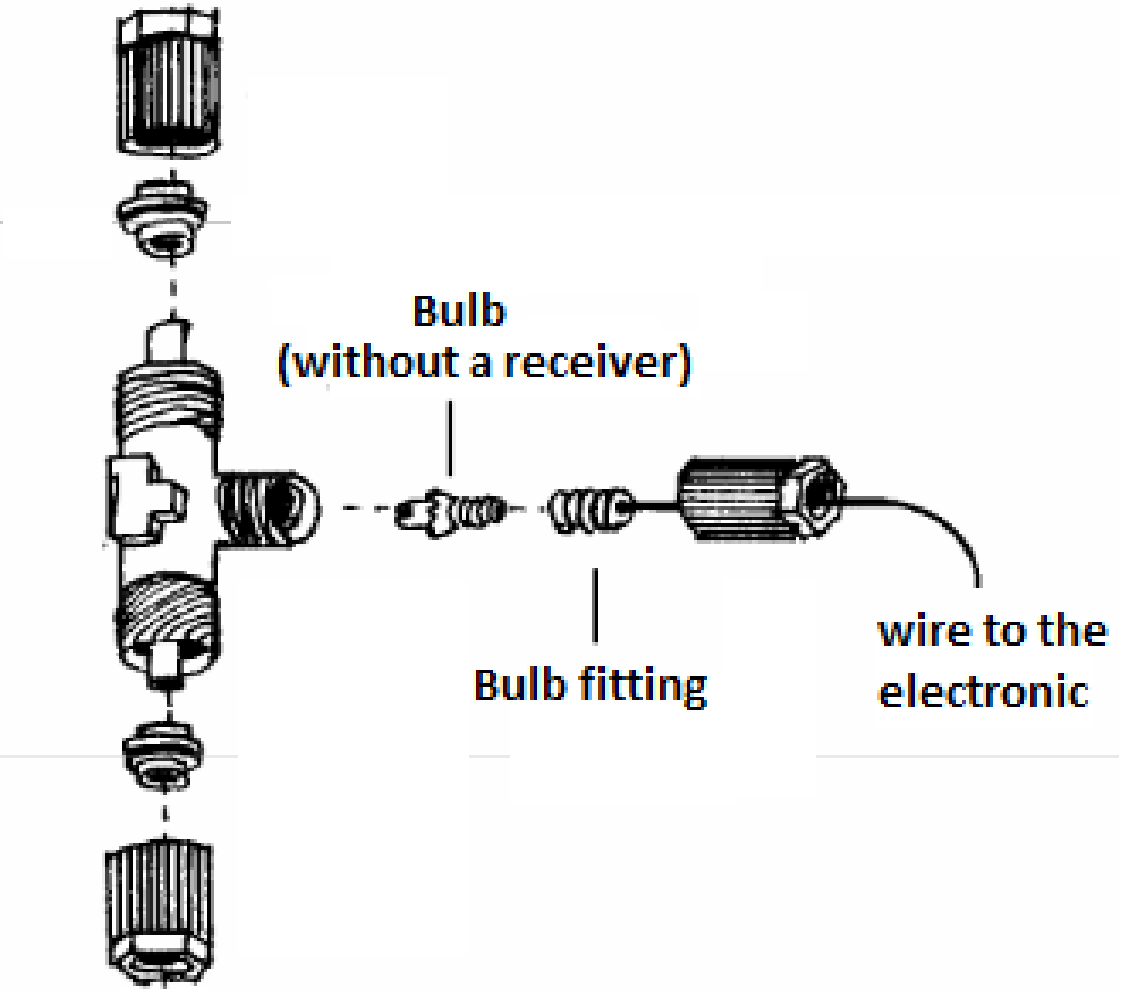
Structure

- Domain
- Construction
- Functionality
- Advantages
- Disadvantages

Domain

- Analysis of noble gas and permanent gas
- Quantitative analysis:
  To review the quantitativity of the sample
- Qualitative analysis:
  To review which solid is include

Construction



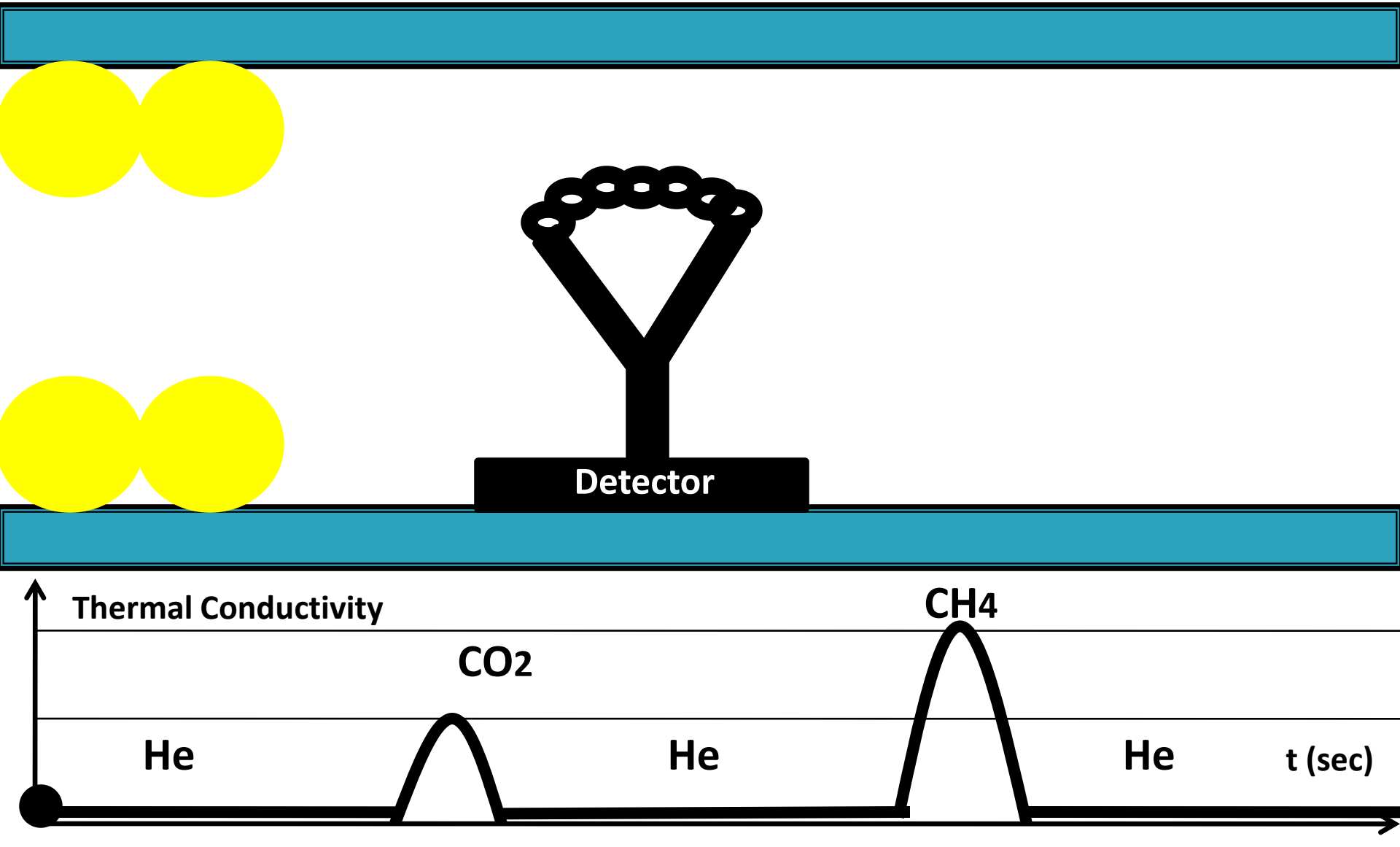
Functionality

- The Detector is heated by electricity
- The Detector wire changes its temperature trough the gases which pass by
- Gases have a different thermal conductivity

- The conductivity of a metal depends on the temperature

  ⟹ The warmer a metal is the less is the conductivity

- This voltage change is registered and shown as a peak


Detector
Thermal Conductivity
CO2
CH4
He
He
He
t (sec)

Advantages

- Other detectors can be additional connected
- Universal
- Cost- efficient proof of:
  permanent gas, noble gas, nitrogen-, carbon -, sulfur- oxid

Disadvantages

- There must be a clear difference of the thermal conductivity between the carrier gas and the analyte
- The carrier gas needs a high purity