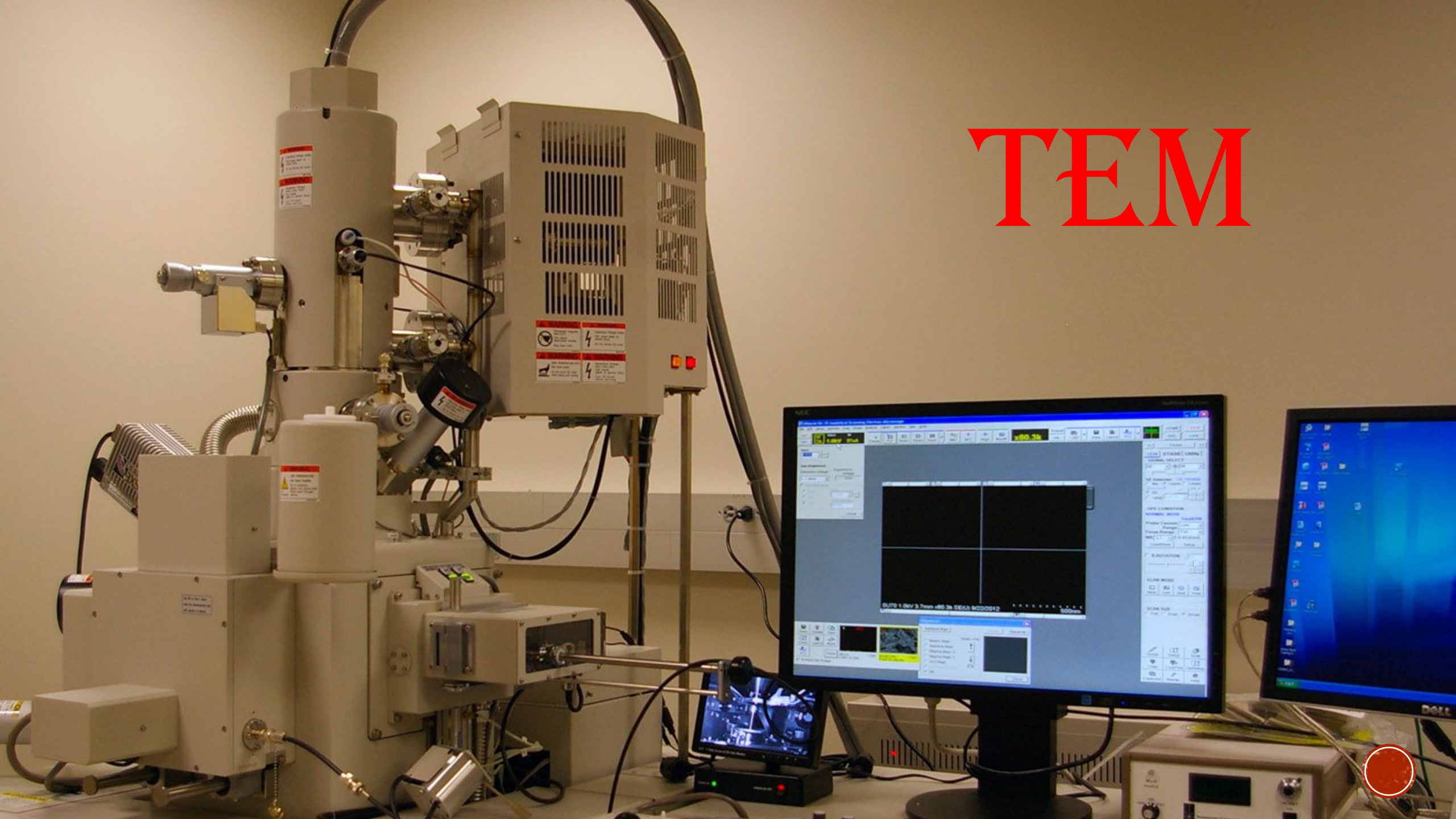
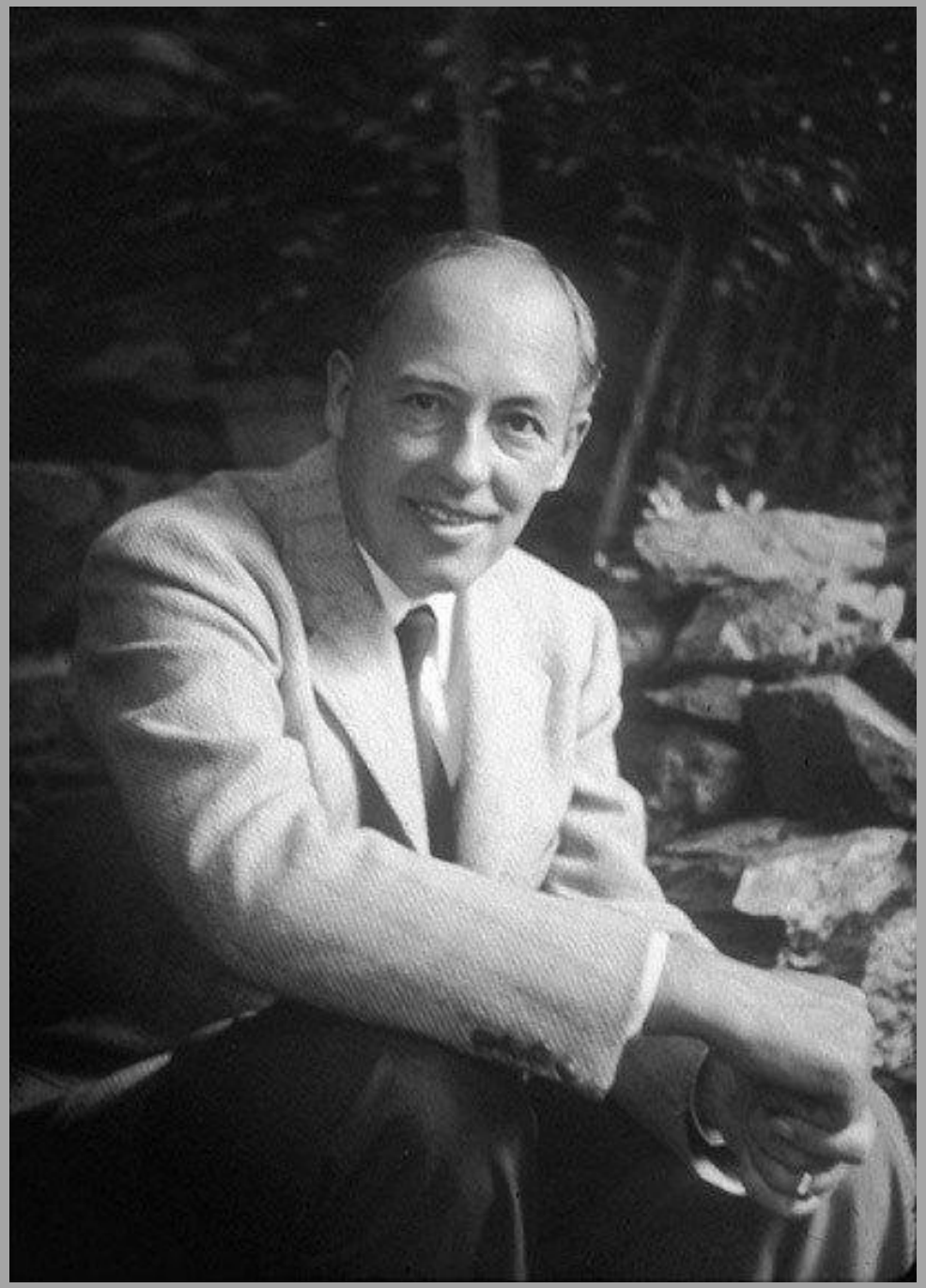
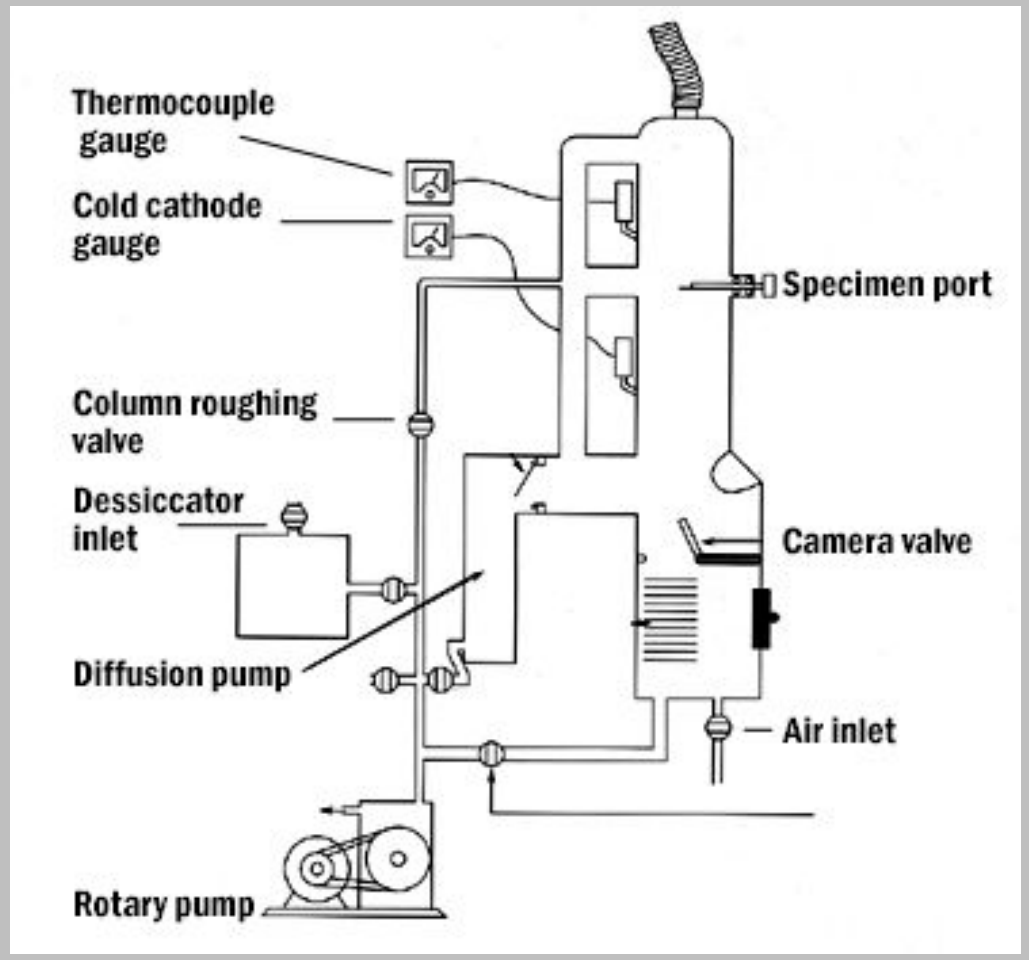
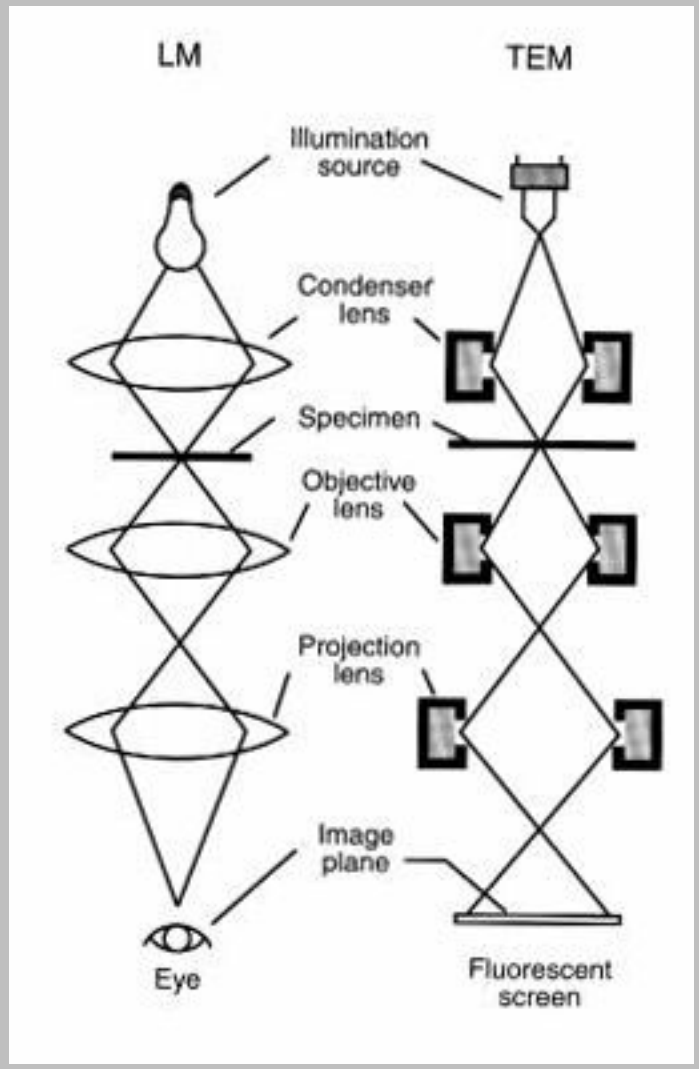
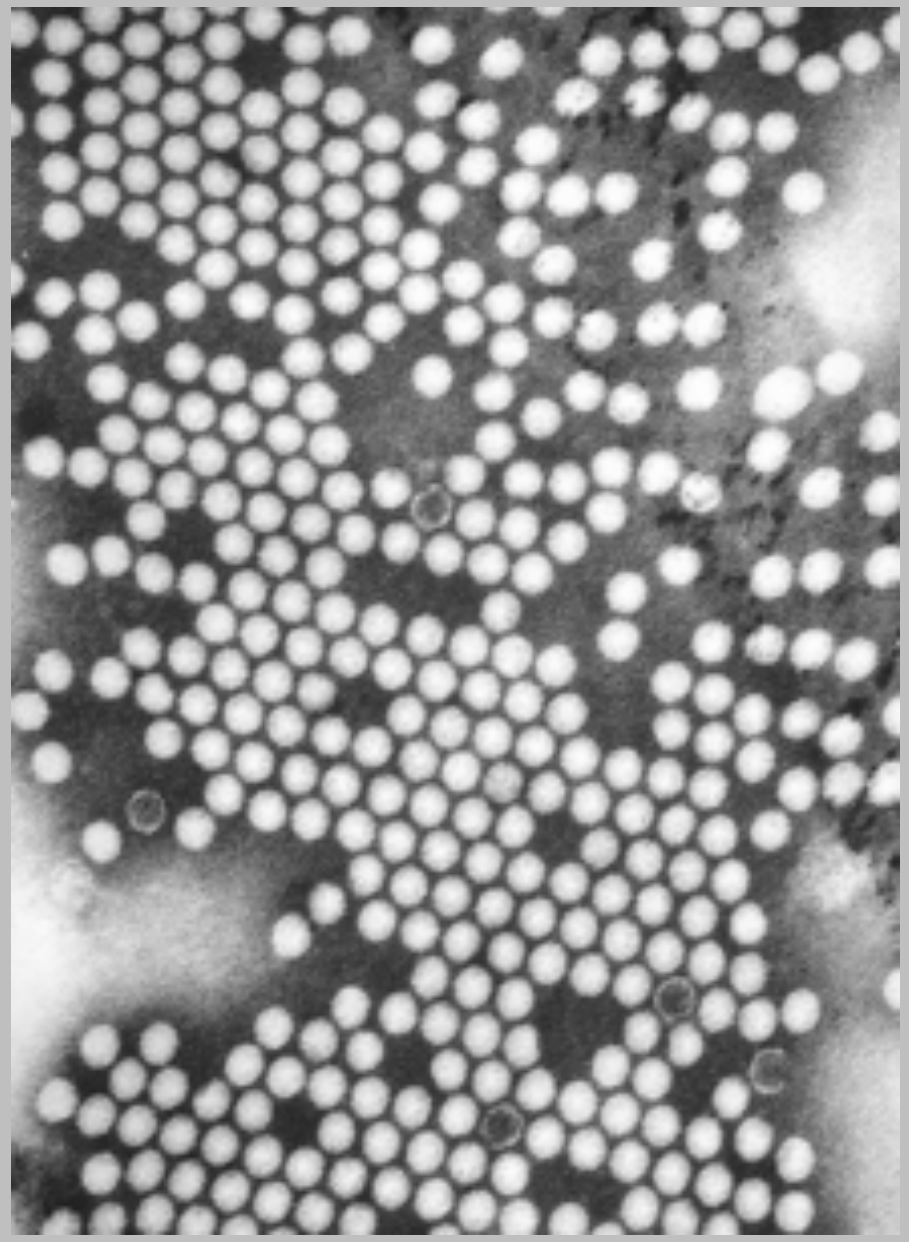
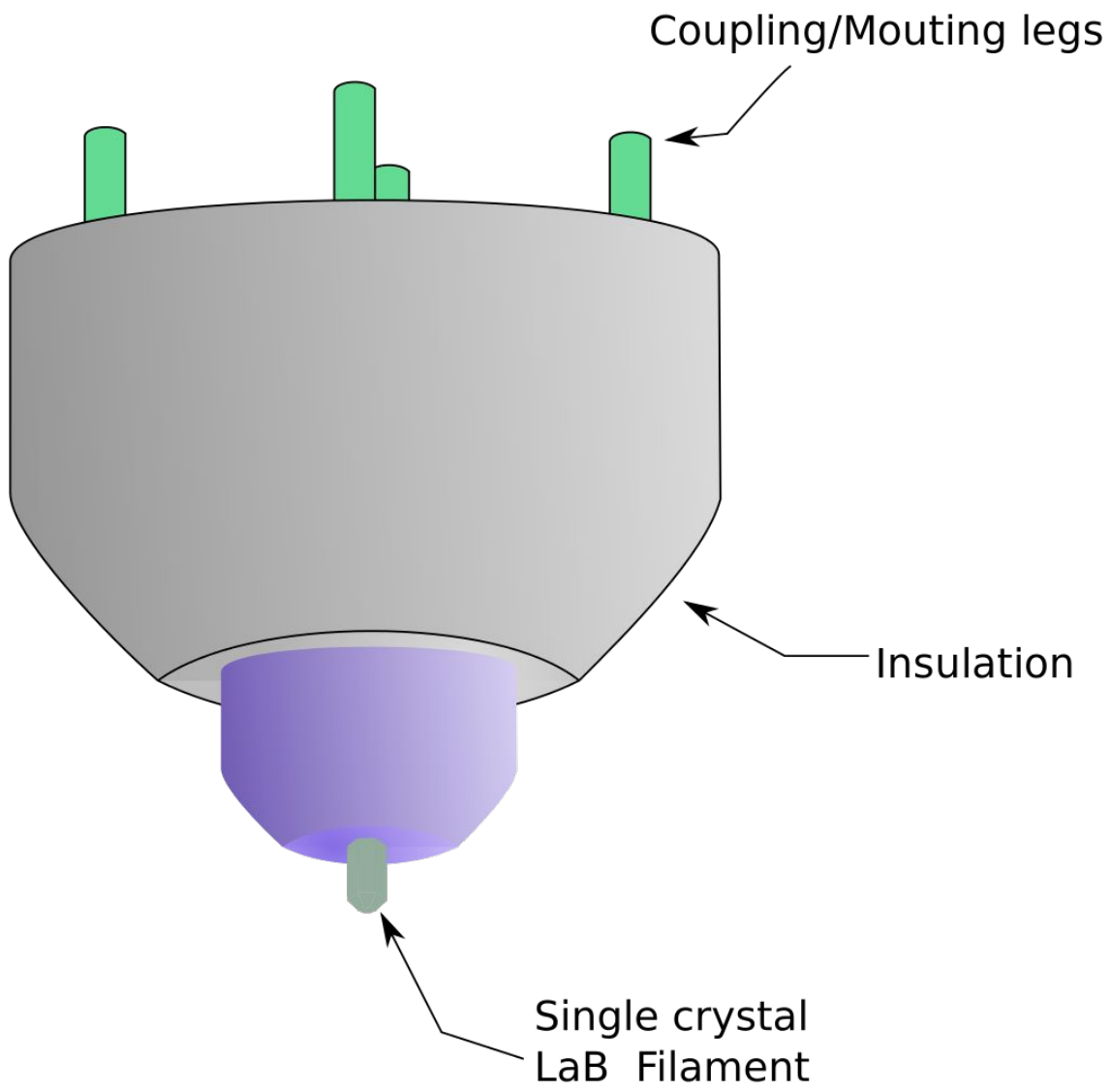

TEM

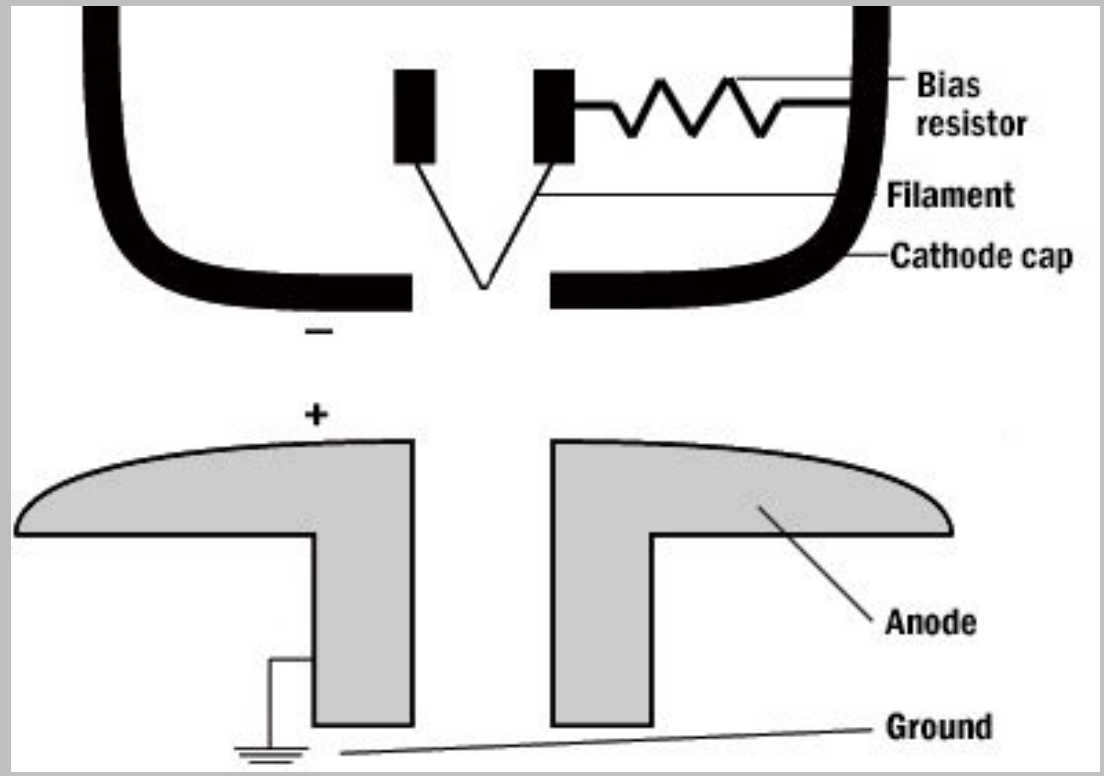


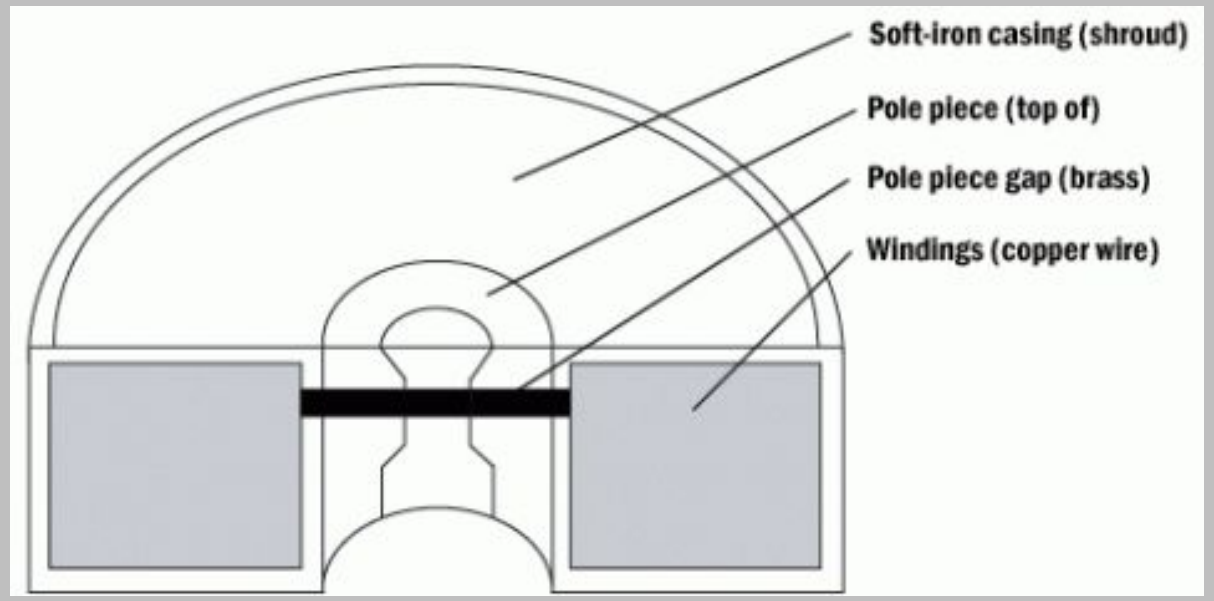

Thermocouple gauge
Cold cathode gauge
Specimen port
Column roughing valve
Dessiccator inlet
Camera valve
Diffusion pump
Air inlet
Rotary pump

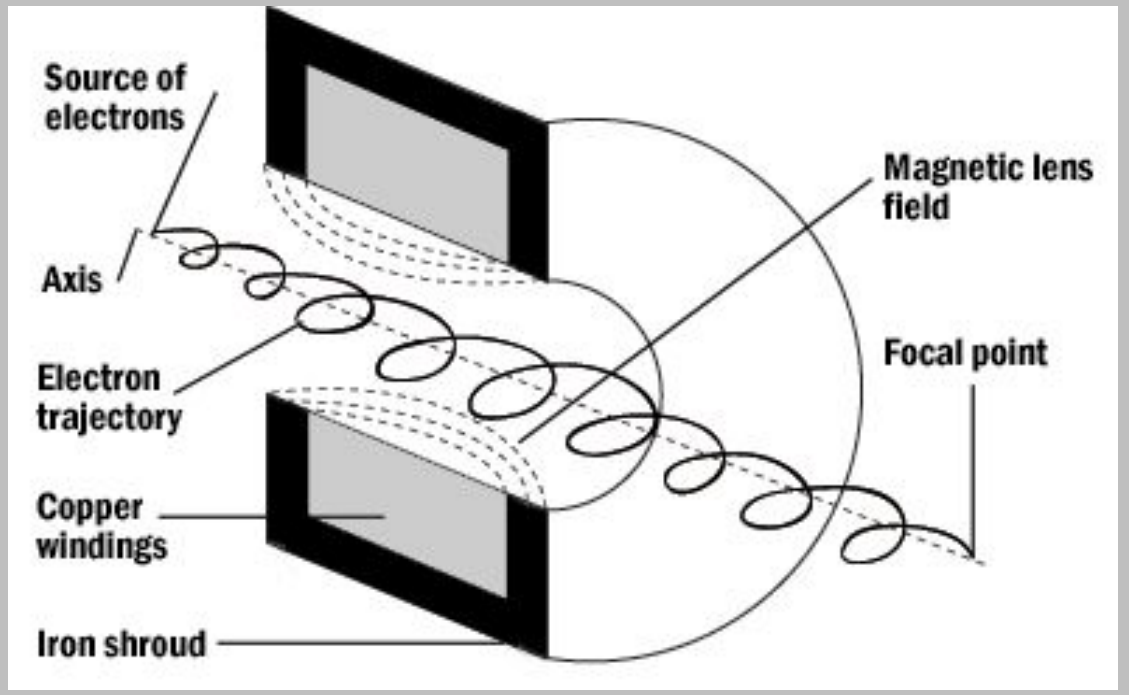

LM
TEM
Illumination source
Condenser lens
Specimen
Objective lens
Projection lens
Image plane
Eye
Fluorescent screen

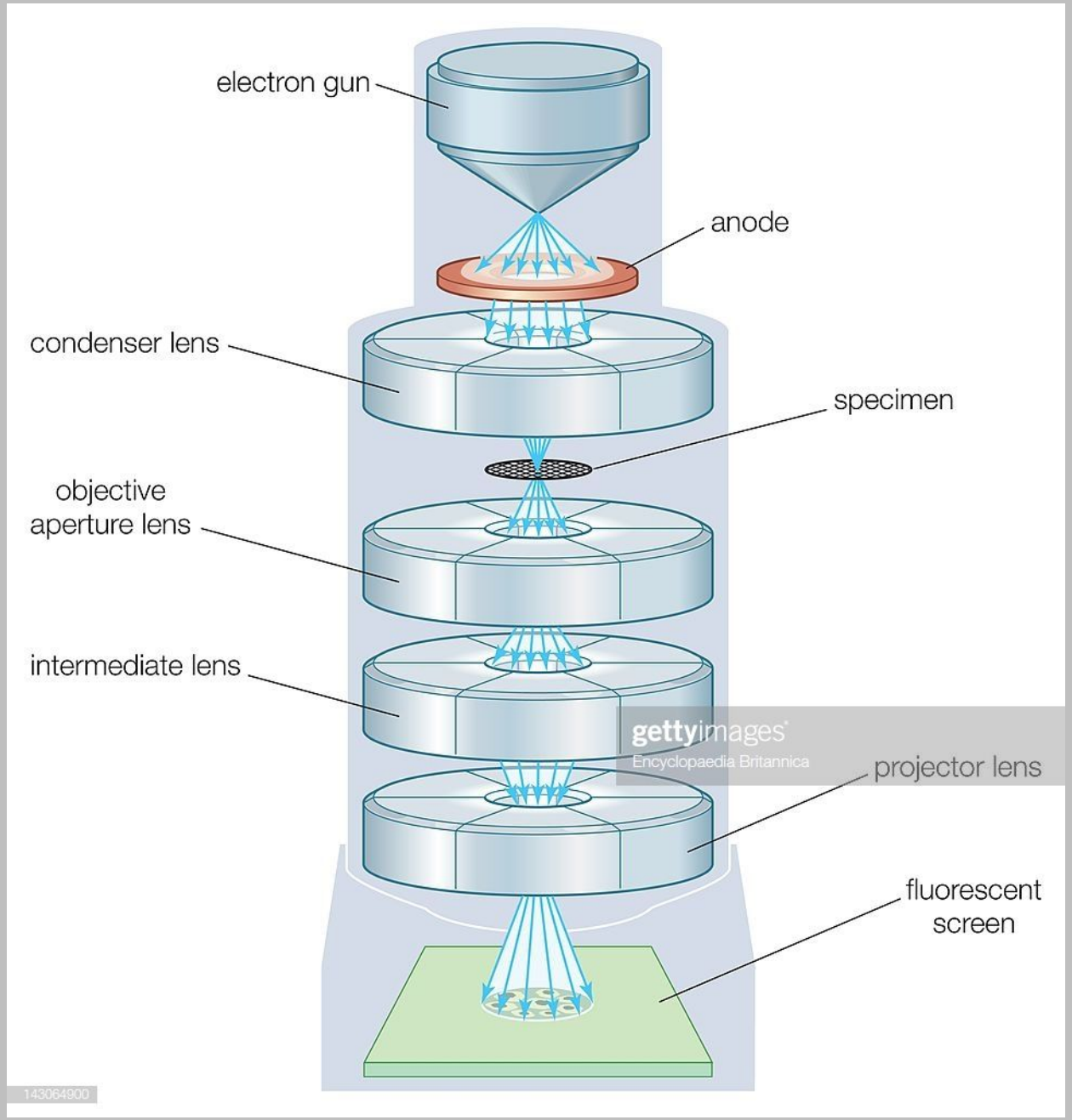



Coupling/Mouting legs
Insulation
Single crystal
LaB Filament


Bias
resistor
Filament
Cathode cap
–
+
Anode
Ground


Soft-iron casing (shroud)
Pole piece (top of)
Pole piece gap (brass)
Windings (copper wire)


Source of electrons
Axis
Electron trajectory
Copper windings
Iron shroud
Magnetic lens field
Focal point


electron gun
anode
condenser lens
specimen
objective
aperture lens
intermediate lens
projector lens
fluorescent
screen
gettyimages
Encyclopaedia Britannica
143064900

IMPLEMENTATION FIELD

- TEMs can be used in life sciences, nanotechnology, medical, biological and material research, forensic analysis, gemology and metallurgy as well as industry and education.
- TEMs provide topographical, morphological, compositional and crystalline information.
- The images allow researchers to view samples on a molecular level, making it possible to analyze structure and texture.
- TEMs can be used in semiconductor analysis and production and the manufacturing of computer and silicon chips.
- Technology companies use TEMs to identify flaws, fractures and damages to micro-sized objects; this data can help fix problems and/or help to make a more durable, efficient product. To optimize imaging in the TEM a beam alignment should be performed prior to use.