

2013 Qals Questions
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What do you mean by the term 'active device'; give examples of active and passive devices.

What do you think was the earliest active device?

Here is a vacuum tube. Hot filament down the center emits electrons that are attracted to the anode. In between is a grid electrode that modulates the electron current between anode and cathode.

Now using the board show me how a MOSFET works. Why is the substrate silicon (or other single crystal semiconductor)? Why not graphite (or other cheap amorphous or polycrystalline material)? i.e. how is it that the gate voltage affects the conductance of a silicon layer but not of a graphite one?