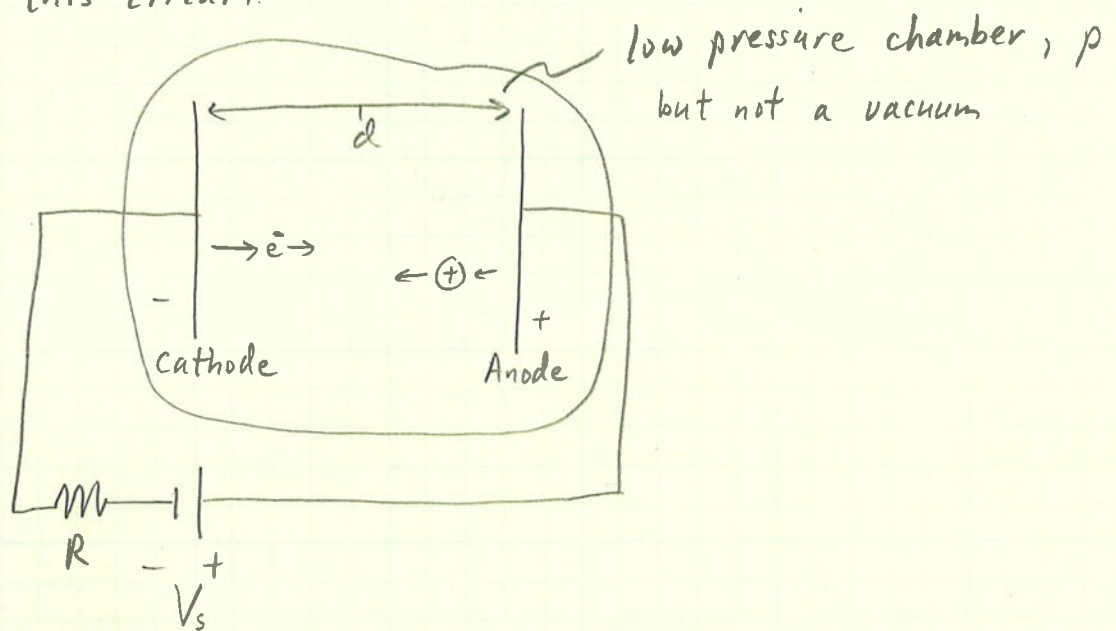


1. Dry Etching → gas or plasma used instead of liquid etchants

a. What is plasma?

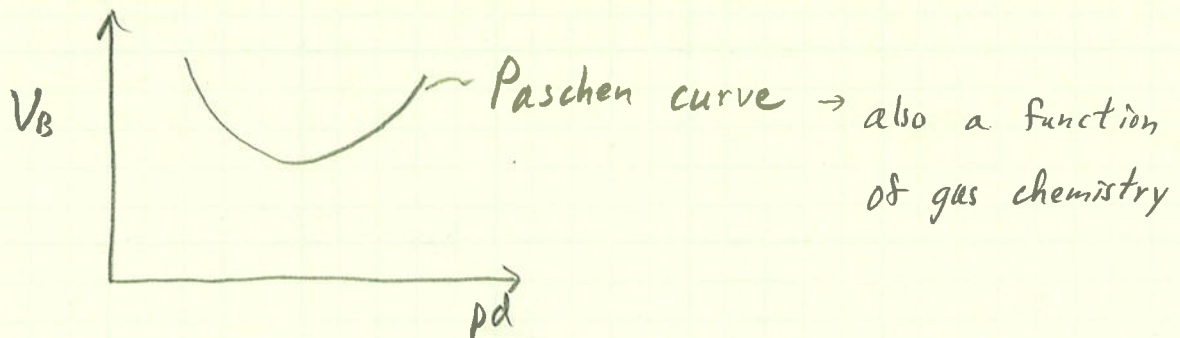
Consider this circuit.



If V_s is large enough "electrical breakdown" will occur where low pressure gas goes from being an insulator to being a conductor.

→ a plasma forms between the 2 electrodes

→ plasma definition → "a quasi-neutral gas of charged and neutral particles characterized by a collective behavior"

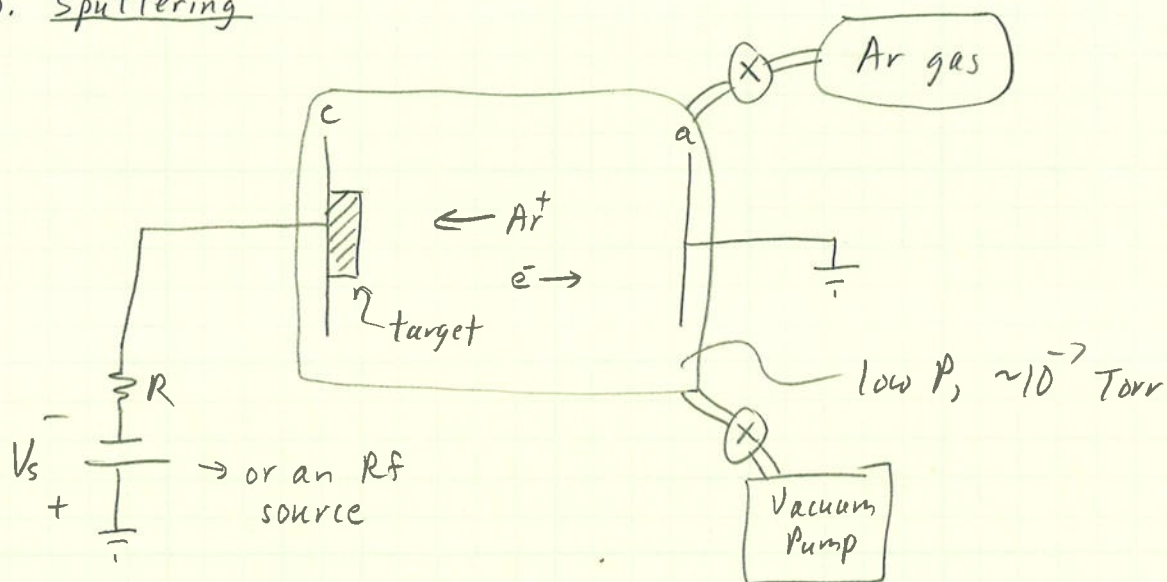


V_B = breakdown voltage

Constituents: neutrals (original gas, radicals), electrons, positive ions

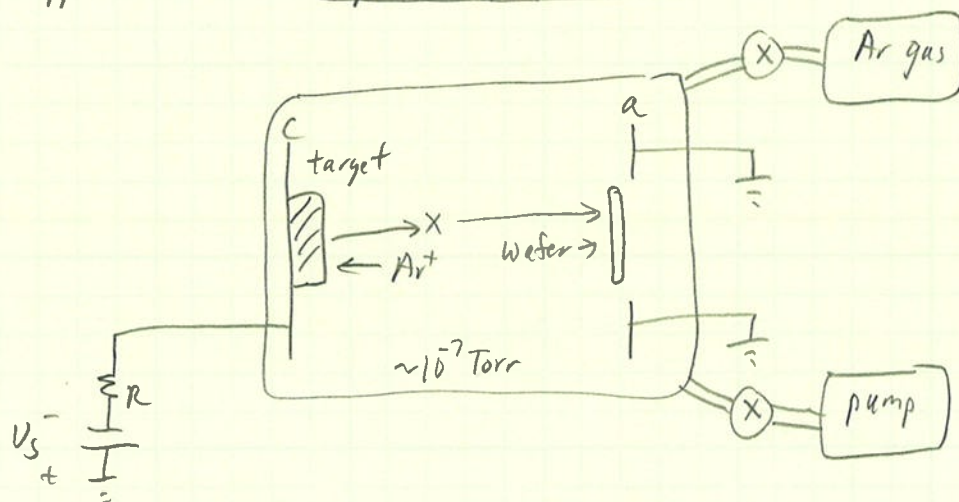
Positive ions move toward the cathode and can experience high velocities near the cathode

b. sputtering



If V_s is high enough, Ar^+ atoms will strike the target with sufficient KE to dislodge atoms from the target \rightarrow called Sputtering

① application 1 \rightarrow Sputter deposition



Ar^+ ions knock atoms from target, "X", which travel across the low P chamber and land on the wafer. Over time, they build up a thin layer on the wafer.