

18/02/2025 Uses of Schottky effect

B.Sc. Part III 'B'

The Schottky effect which involves the increase in electron emission from a heated material's surface due to an applied electric field —

1) Vacuum tubes — The Schottky effect is utilized in vacuum tubes to enhance electron emission. By applying field, the work function of the cathode material is reduced, allowing for more efficient electron flow. This is crucial in devices like cathode ray tubes and other electron tube where controlled electron emission is necessary.

2) Field emission displays → The effect is also used in field emission displays. Where it helps in achieving efficient electron emission from the cathode, contributing to the display's brightness and efficiency.

