

The background is a light blue grid. There are two horizontal blue lines: one near the top and one near the bottom. There are also two vertical blue lines: one on the left and one on the right. At the top-left intersection, there is a small blue circle with a horizontal line extending to the right. At the bottom-right intersection, there is a small blue circle with a horizontal line extending to the left.

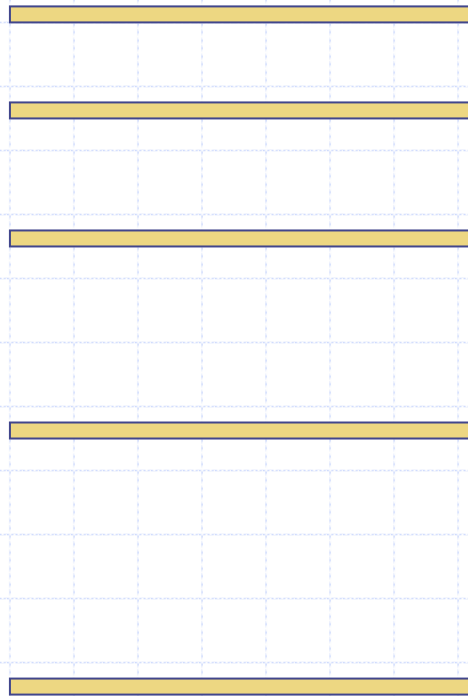
Física Quântica

A Teoria Das Bandas

Teoria Das Bandas

- ◆ Comportamento de “onda” da partícula aplicada a sólidos
- ◆ Interferência de elétrons de átomos muito próximos

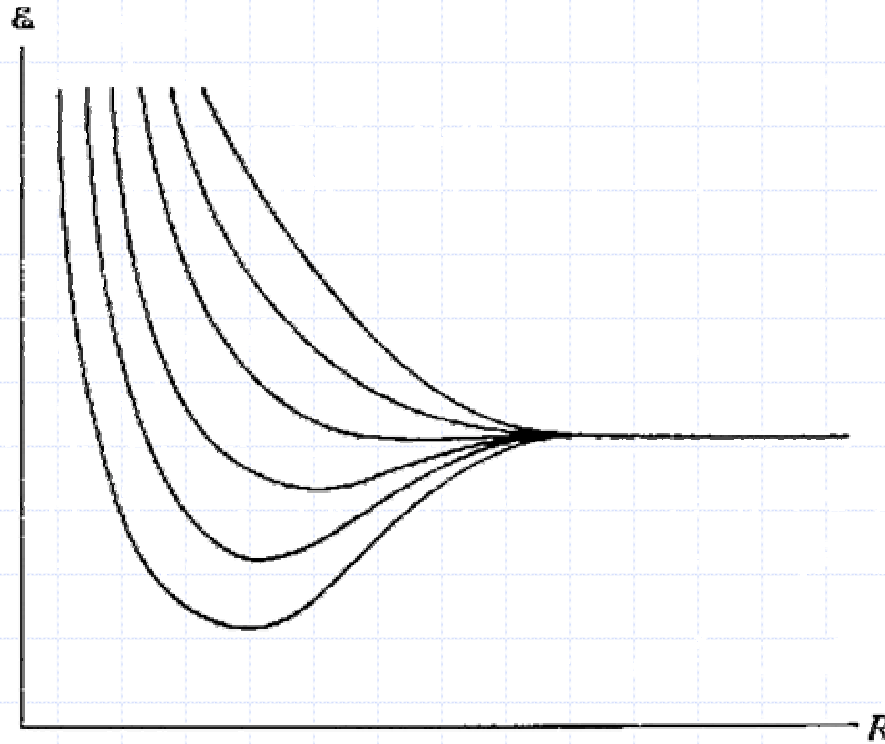
Átomo - Níveis Energéticos



Desdobramento de Níveis

- ◆ Átomos muito próximos resultam em interferência das funções de onda de seus elétrons
 - Um nível de energia desdobra-se em dois
- ◆ Somatório de funções de onda

Desdobramento de Níveis de Energia

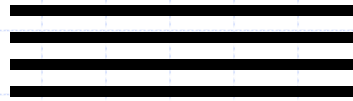


Desdobramento para seis átomos

Criação de Bandas



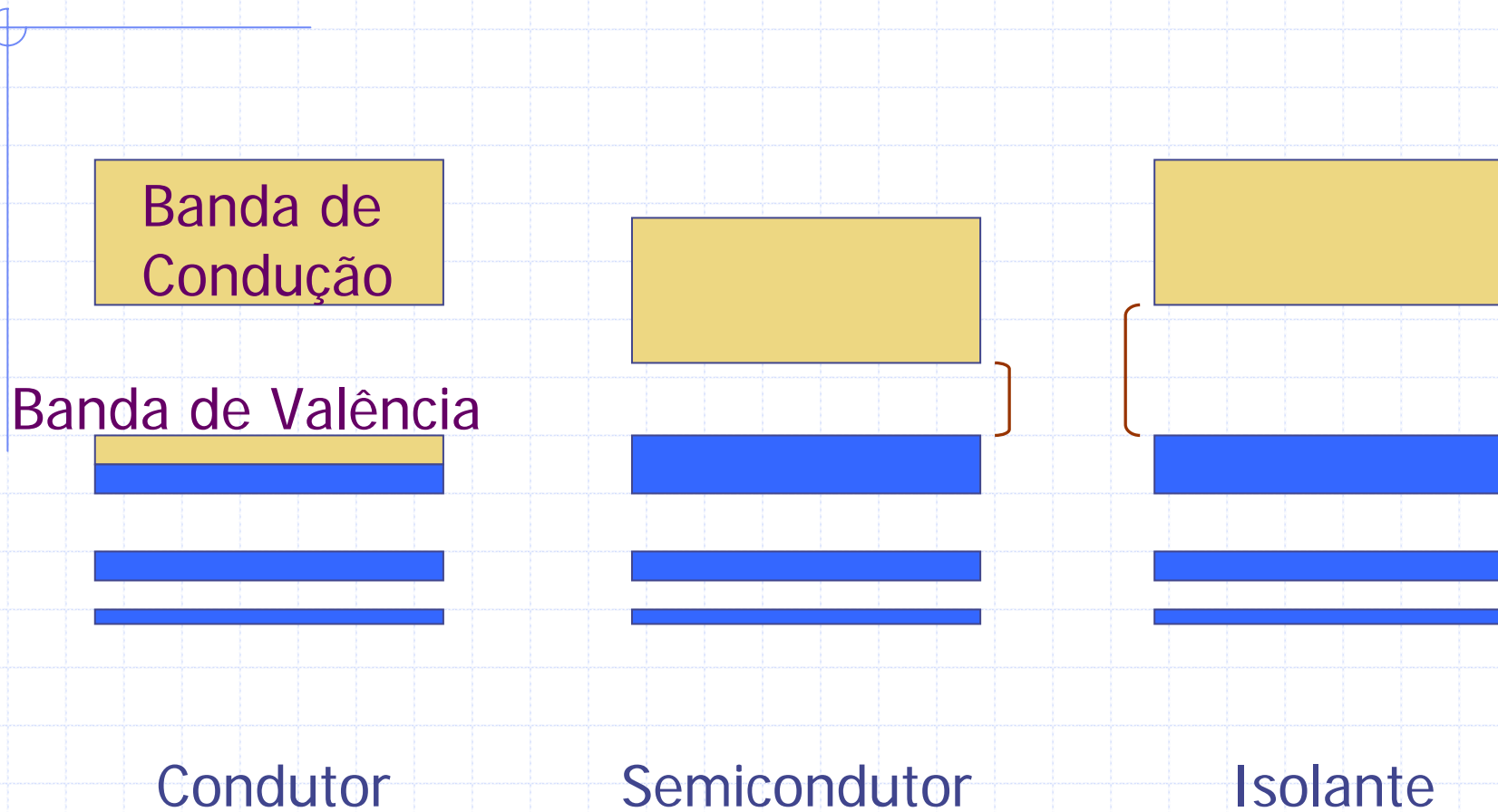
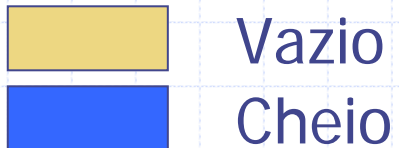
1 átomo



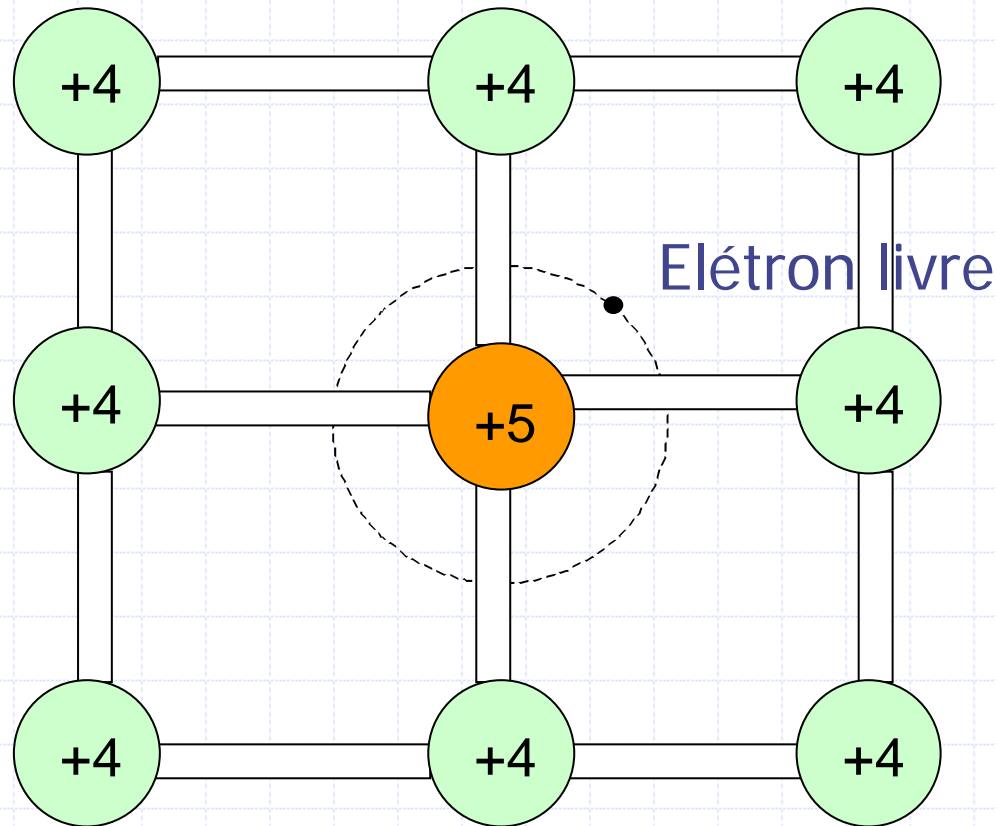
alguns átomos



sólido

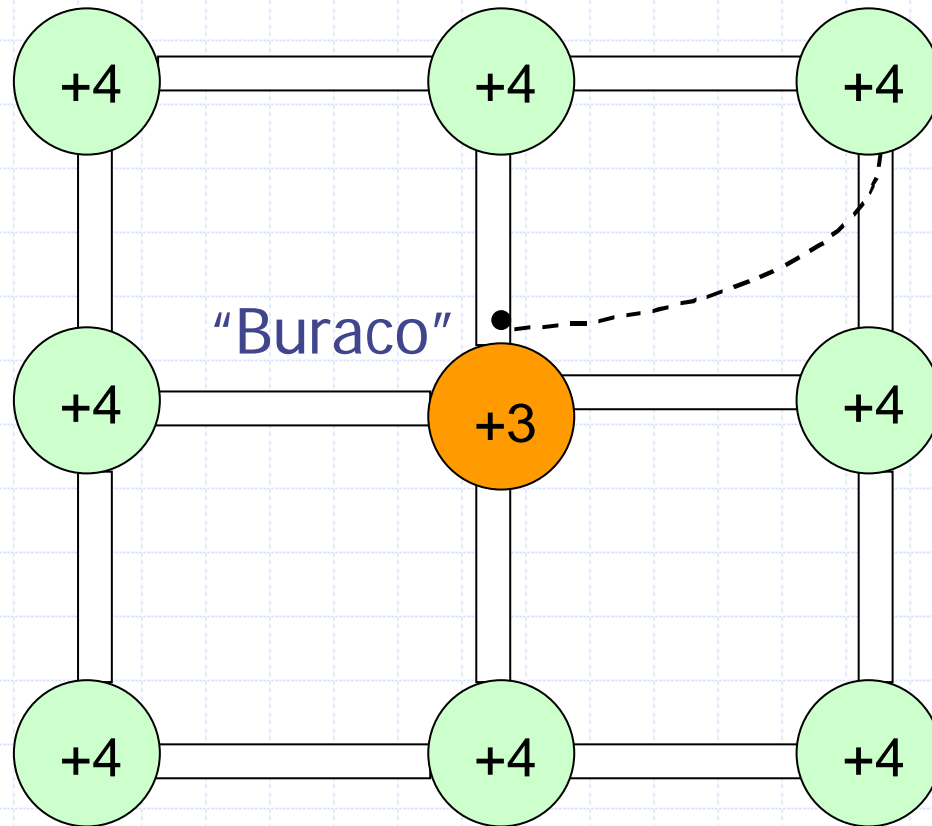


Dopagem



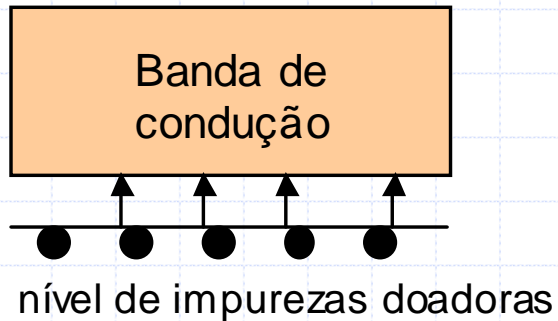
Dopagem com Fósforo (semicondutor tipo n)

Dopagem

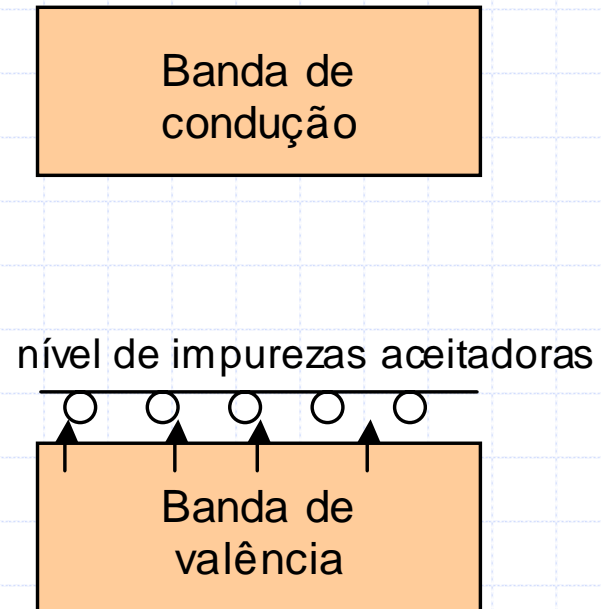


Dopagem com Alumínio (semicondutor tipo p)

Semicondutores - Dopagem

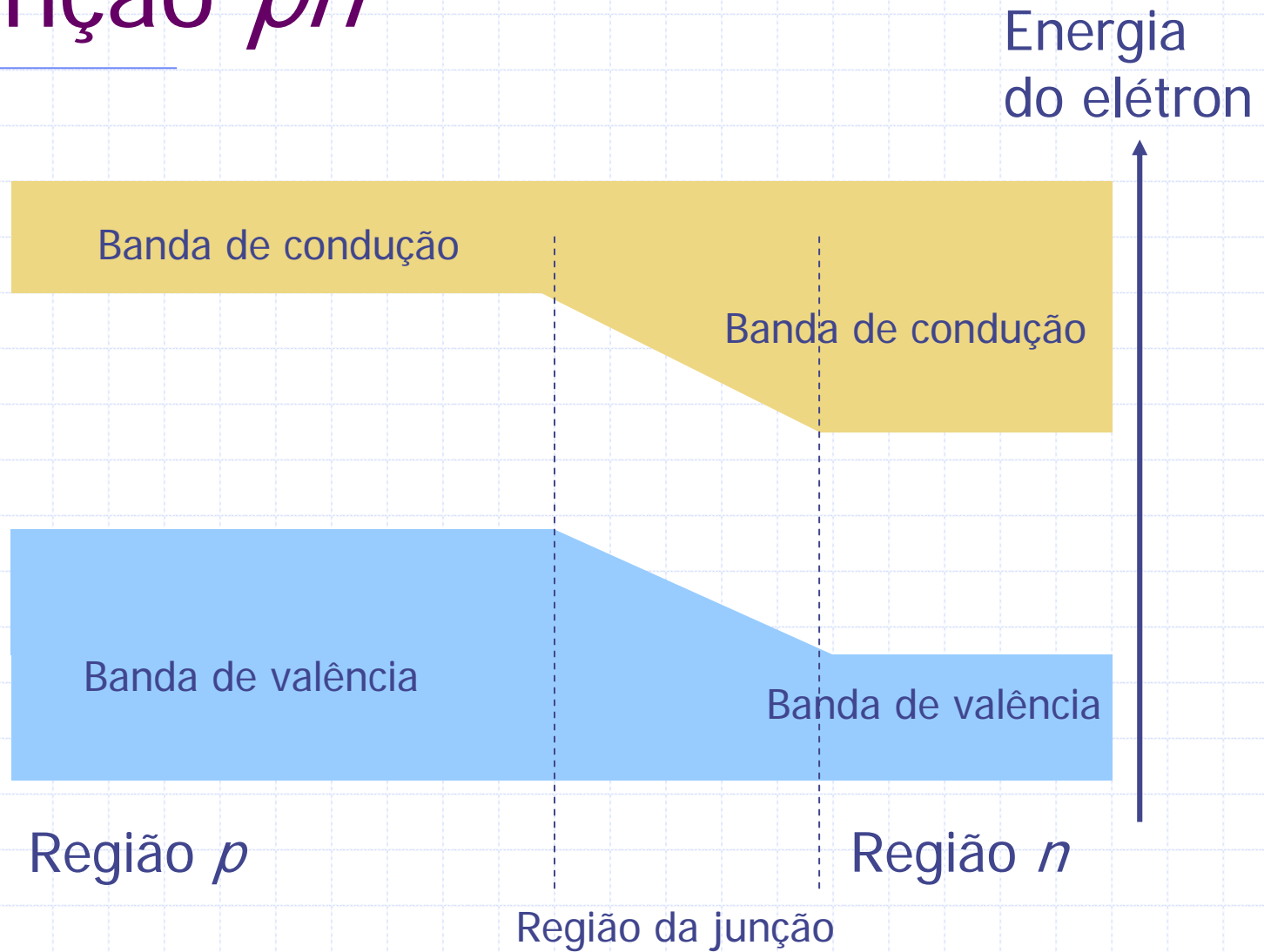


P no Si

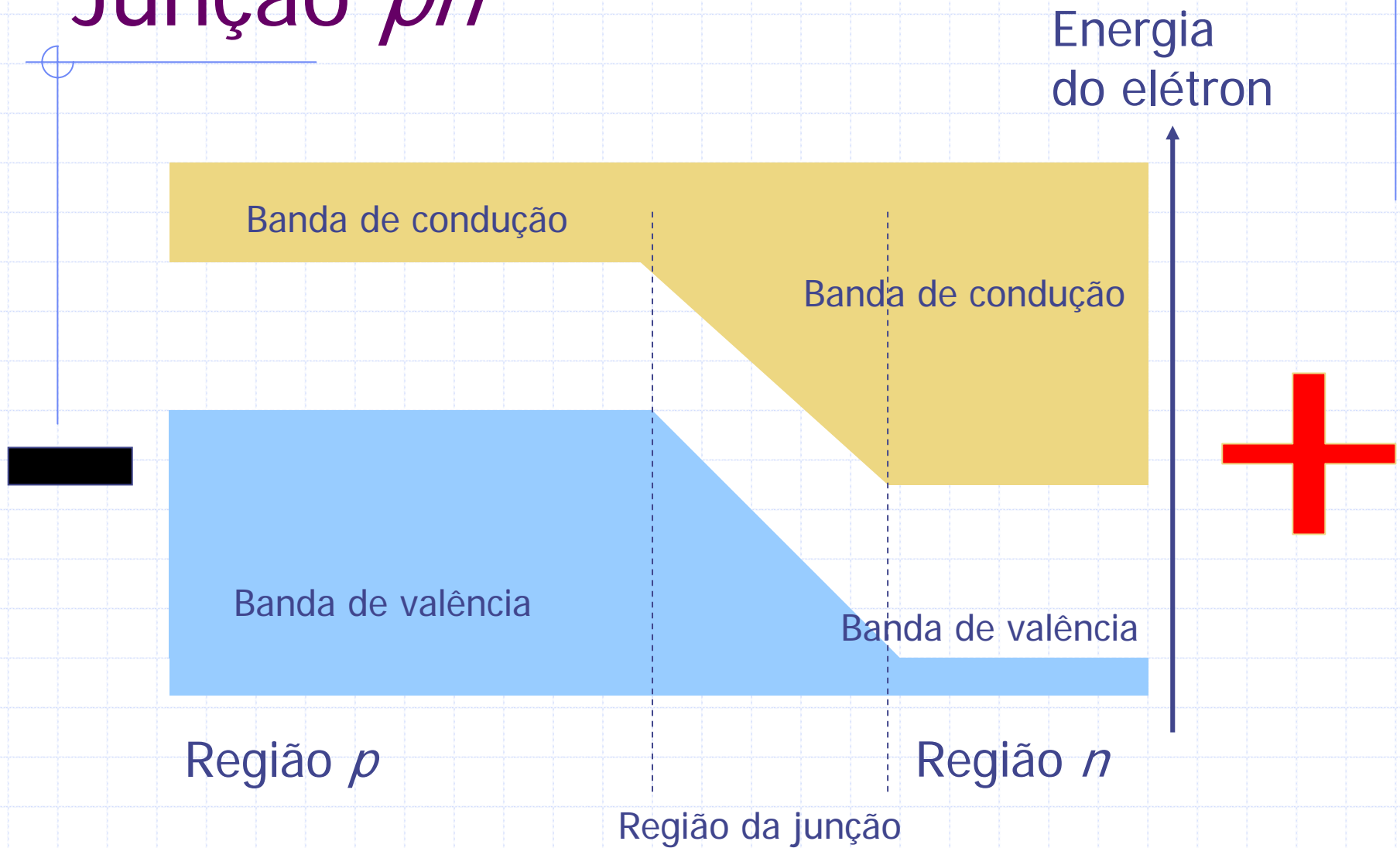


Al no Si

Junção pn



Junção pn



Junção pn

