02

MATERIAIS E PROCESSOS MECÂNICOS DE FABRICAÇÃO

Engenharia de Controle e Automação
Prof. Luis Fernando Maffeis Martins

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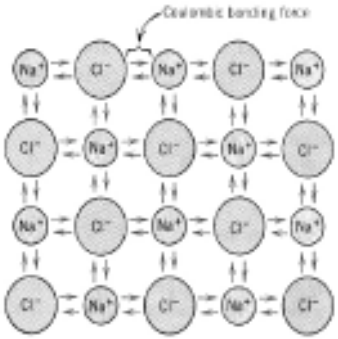
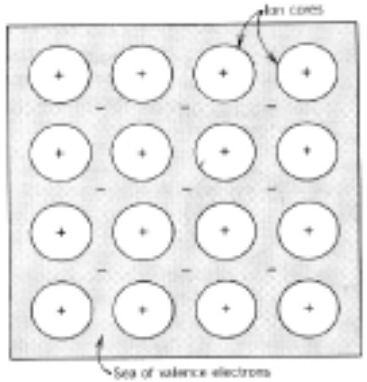
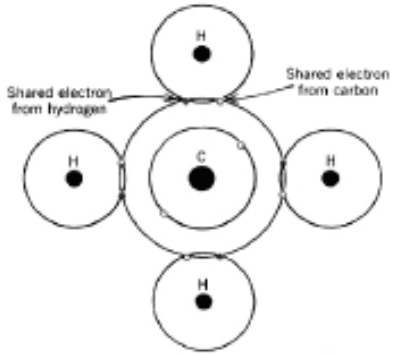
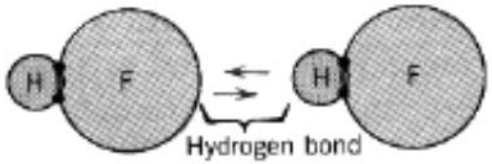
Lembrando...









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Classificação dos materiais

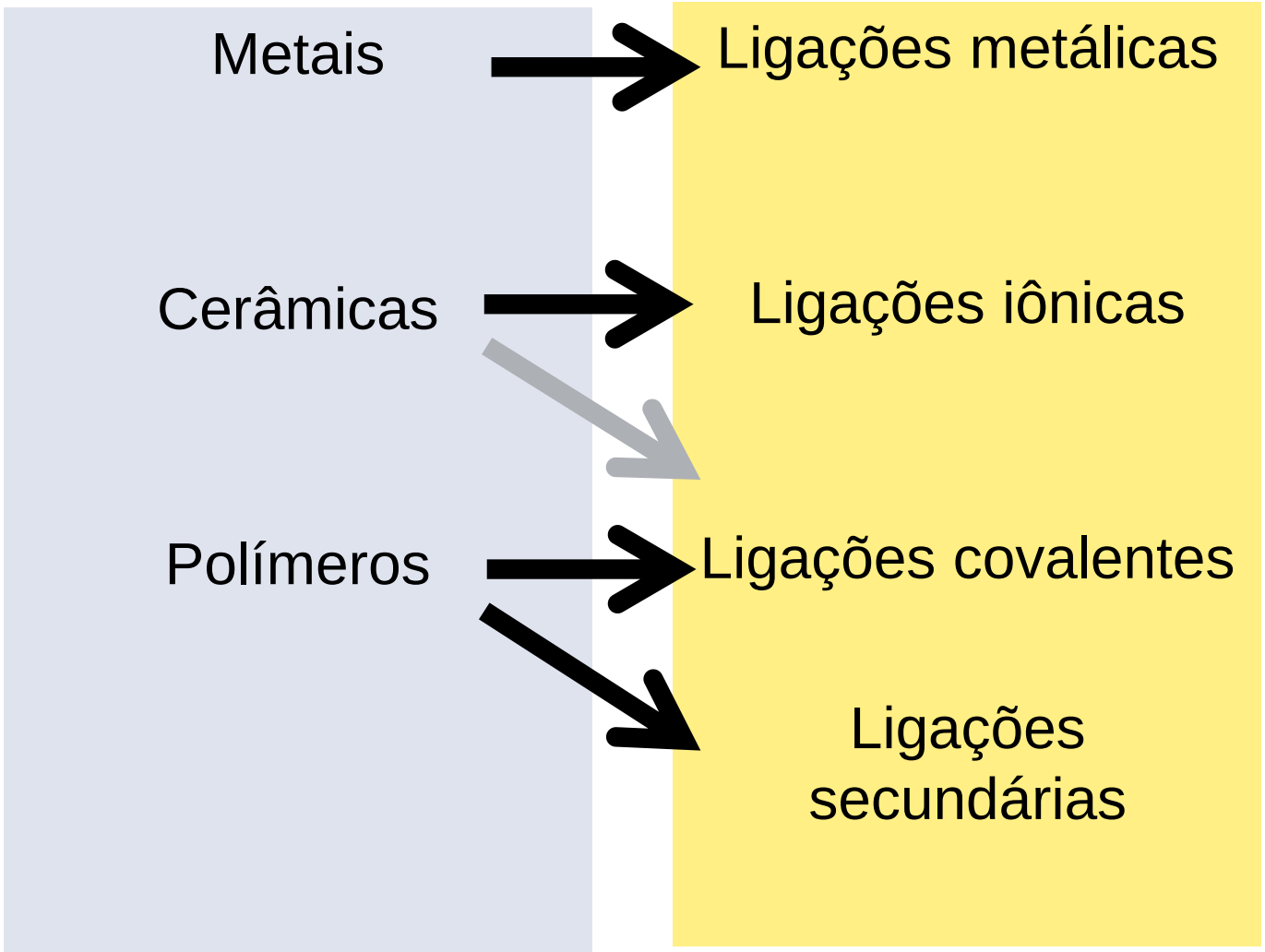
Metais

Cerâmicas

Polímeros

Compósitos

Classificação dos materiais




Jesus
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Jesus

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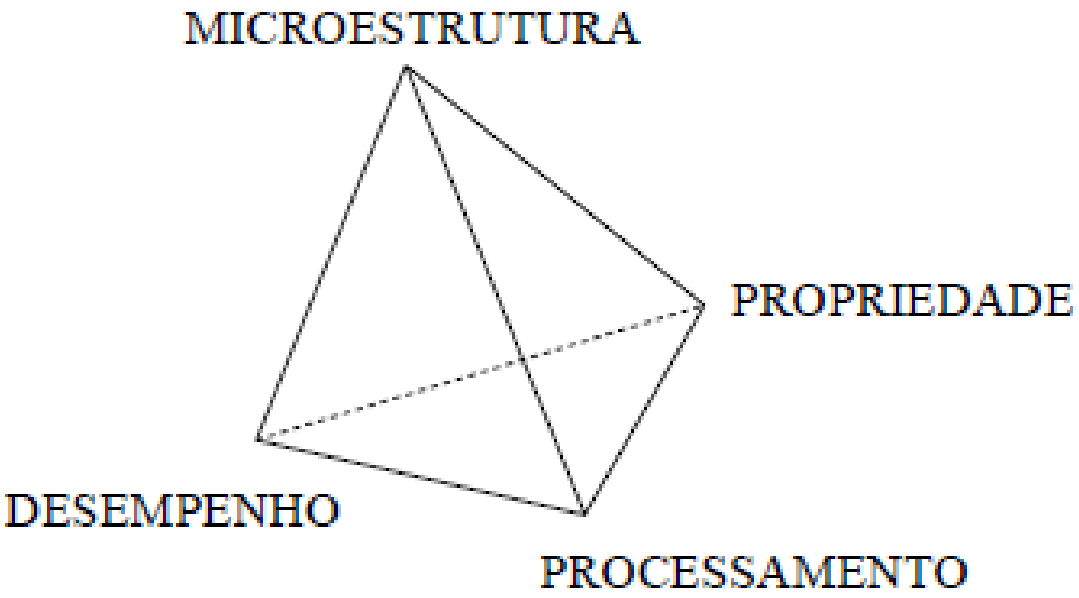
Tetraedro dos materiais



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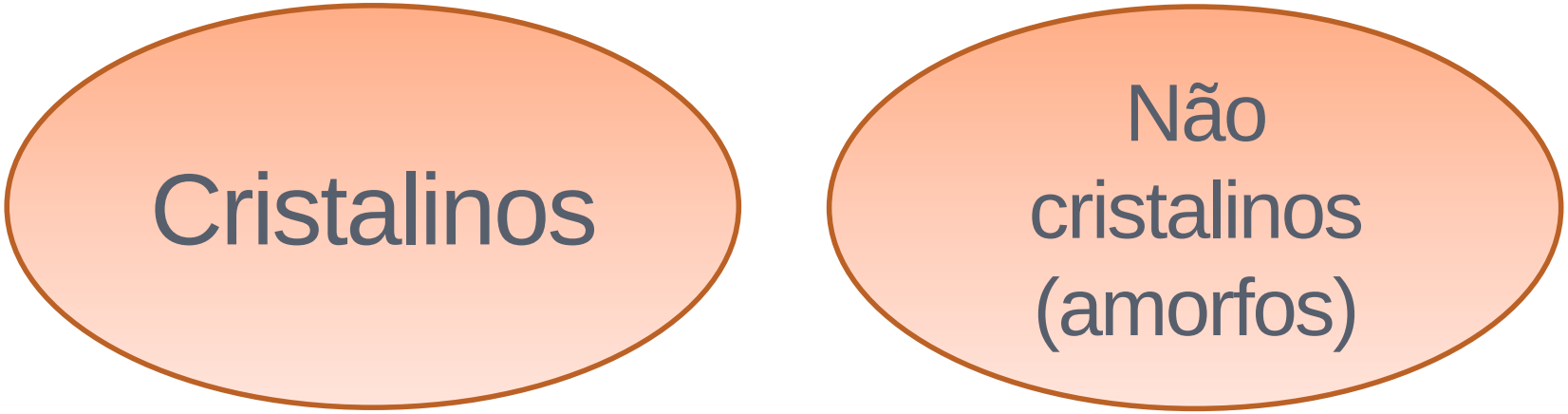
Estrutura dos sólidos cristalinos

- Materiais sólidos podem ser classificados em função da regularidade com a qual os átomos ou íons são agrupados uns em relação aos outros.



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Estrutura dos sólidos cristalinos

- Cristal: sólido cujos átomos estão agrupados em um reticulado periódico tridimensional ao longo de grandes distâncias atômicas

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Estrutura dos sólidos cristalinos

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Estrutura dos sólidos cristalinos

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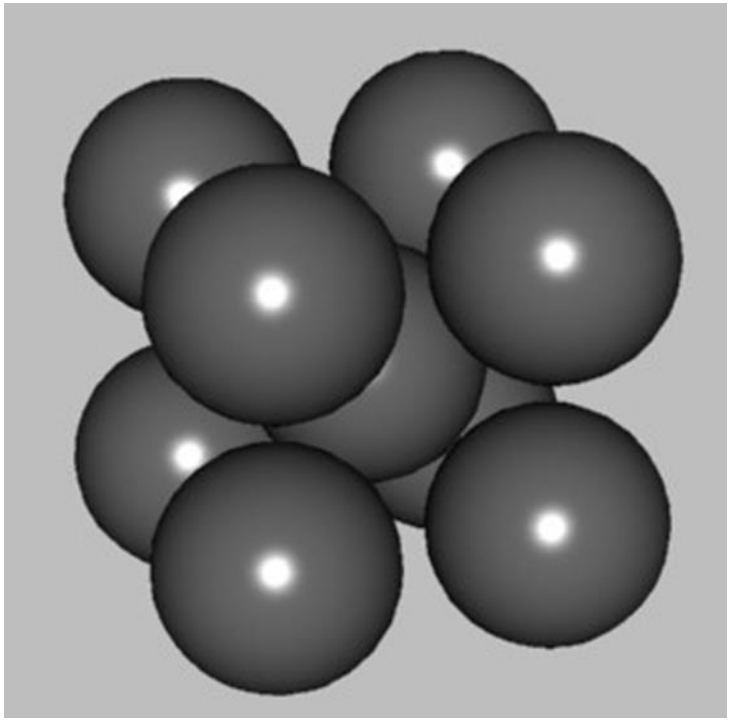
Principais estruturas cristalinas

- Cúbica de corpo centrado - CCC



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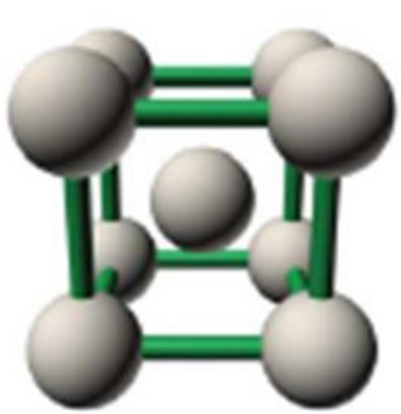
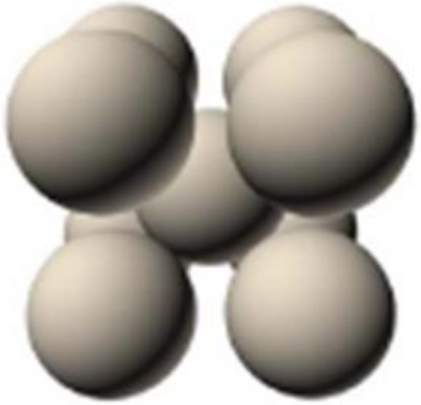
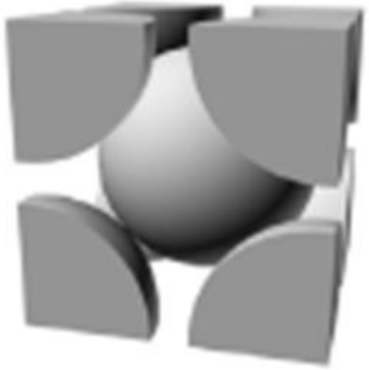
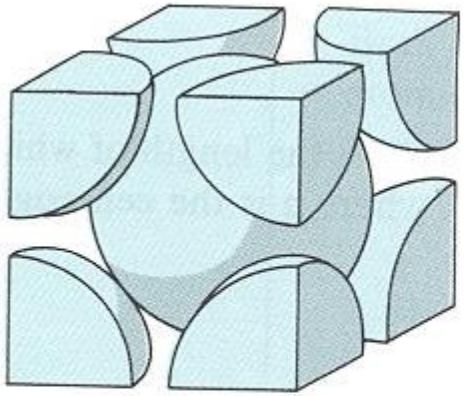
- Cúbica de corpo centrado - CCC

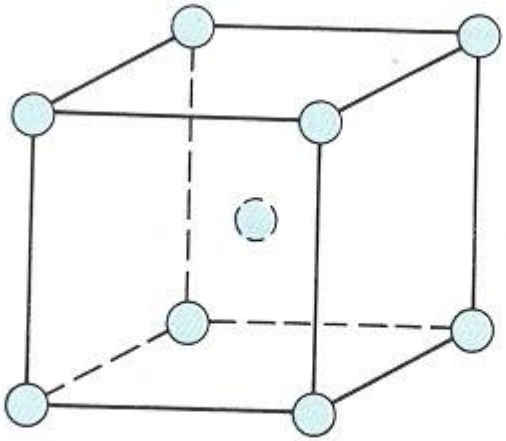








(a)



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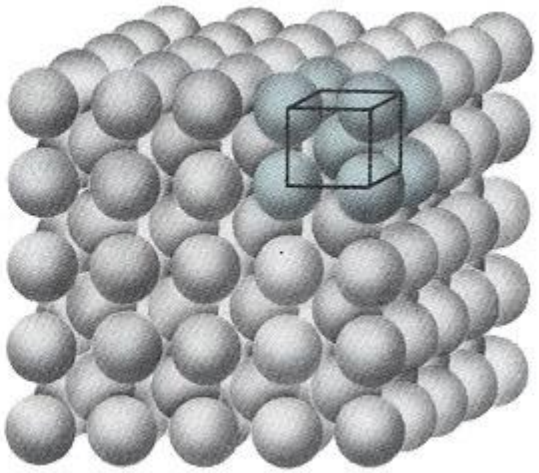

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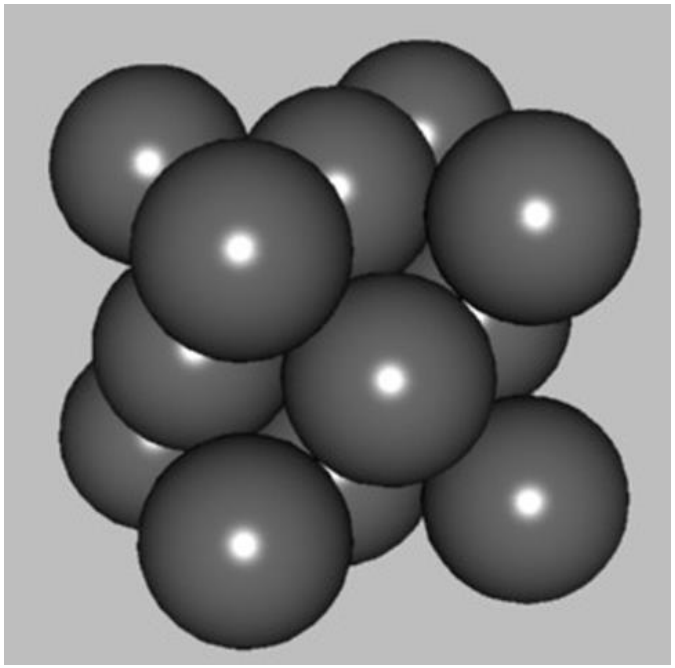
Principais estruturas cristalinas

- Cúbica de faces centradas - CFC



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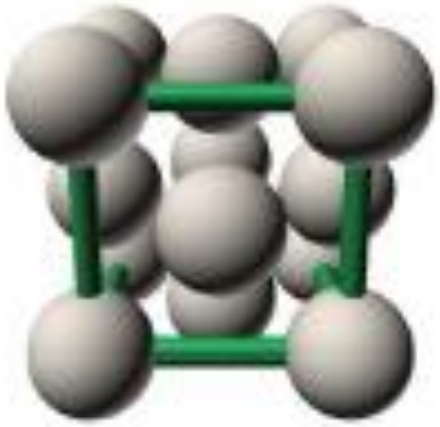
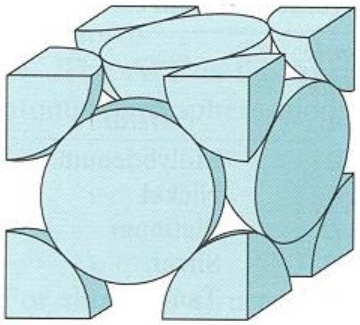
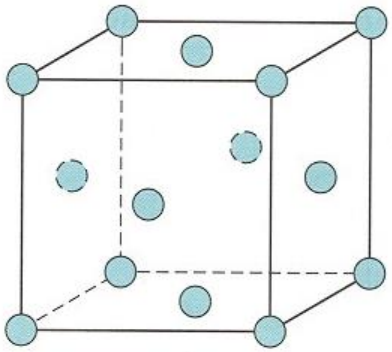
Principais estruturas cristalinas

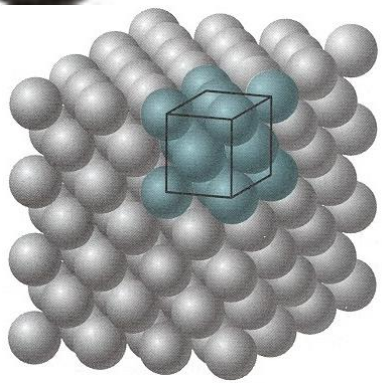
- Cúbica de faces centradas - CFC







(a) (b)



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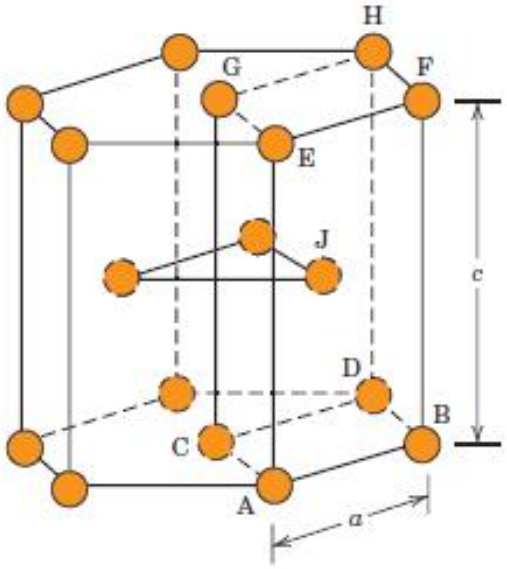
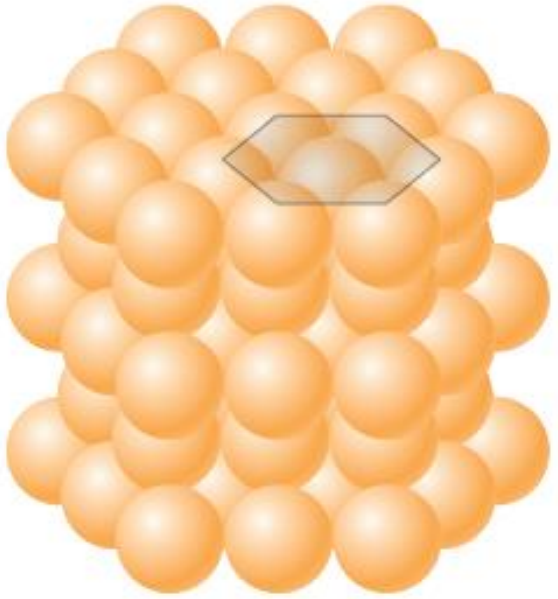
Principais estruturas cristalinas

- Hexagonal compacta - HC





Principais estruturas cristalinas

Estrutura	Metal
CFC	Ag, Al, Au, Ca, Co-β, Cu, Fe-γ, Ni, Pb, Pd, Pt, Rh, Sr
HC	Be, Cd, Co-α, Hf-α, Mg, Os, Re, Ru, Ti-α, Y, Zn, Zr-α
CCC	Ba, Cr, Cs, Fe-α, Fe-δ, Hf-β, K, Li, Mo, Na, Nb, Rb, Ta, Ti-β, V, W, Zr-β