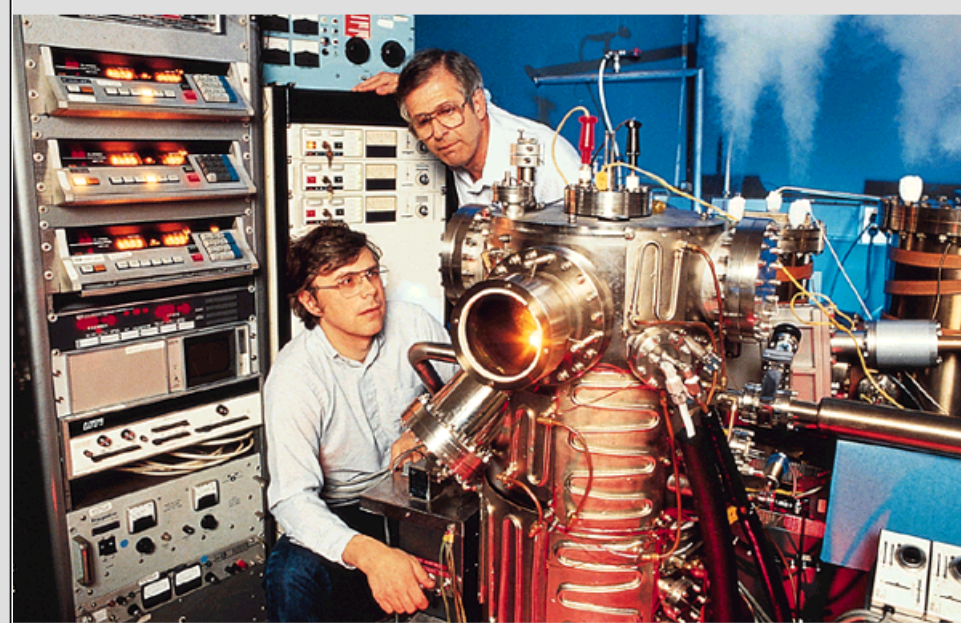


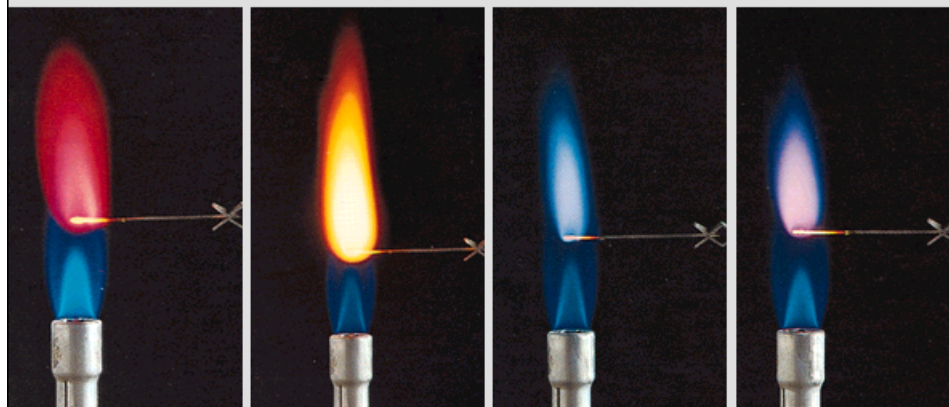
Estrutura Atômica - Tabela Periódica - Ligações químicas



figs07.mov

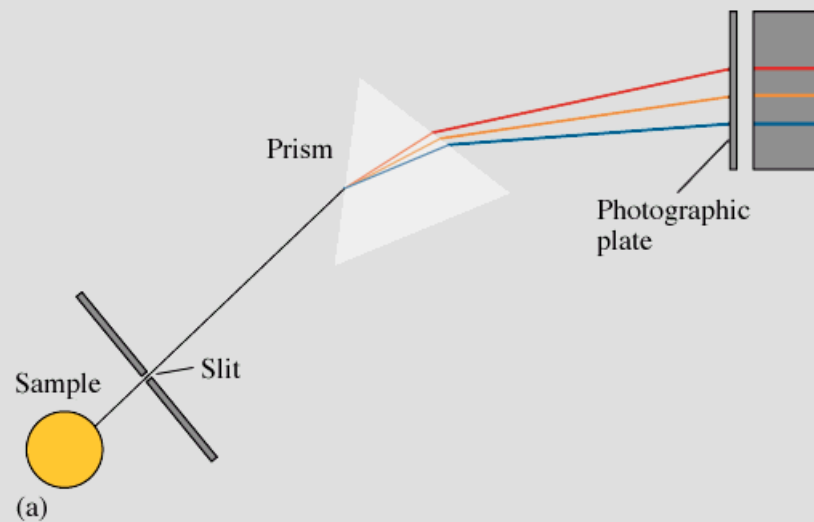


figs07.mov



(a) (b) (c) (d)

figs07.mov



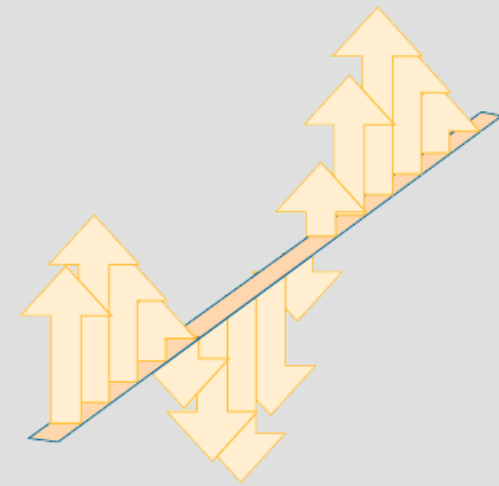
(a)

figs07.mov

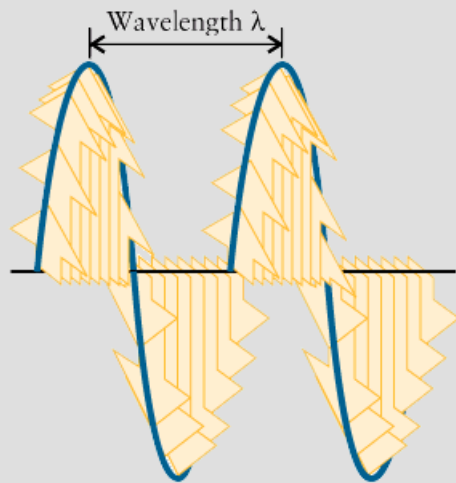


(b)

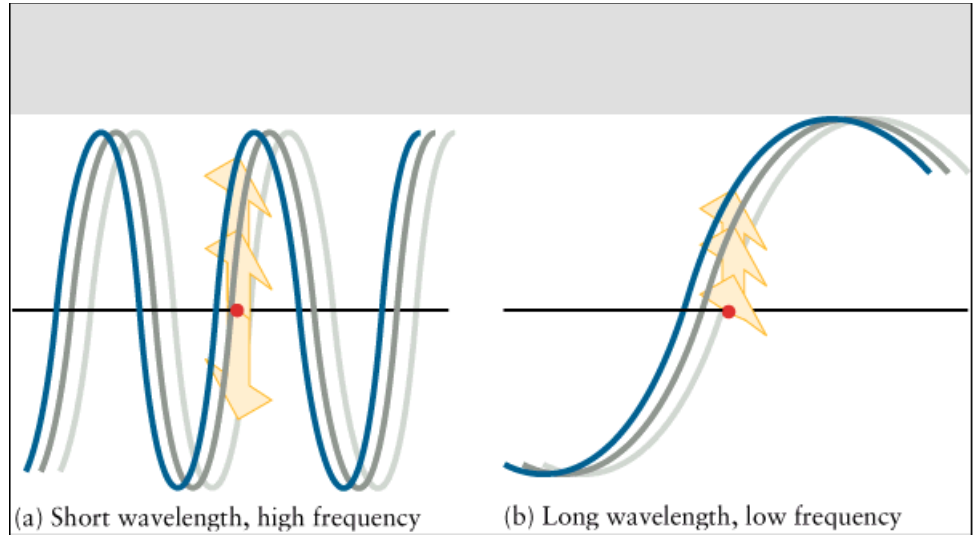
figs07.mov



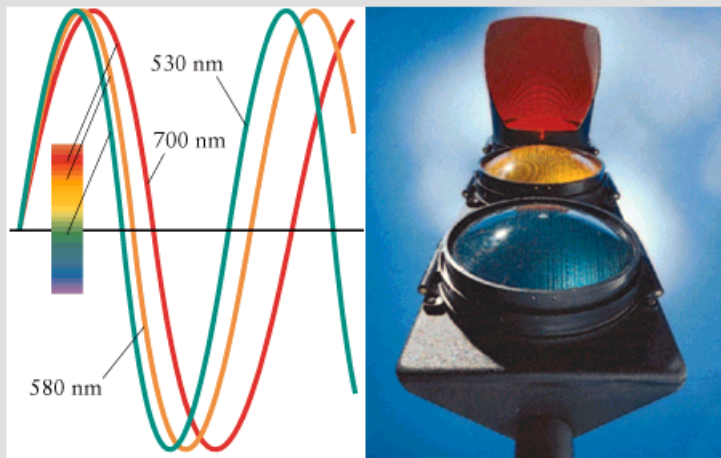
figs07.mov



figs07.mov

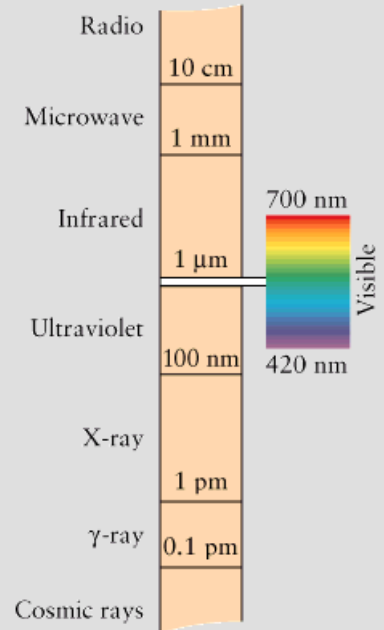


figs07.mov

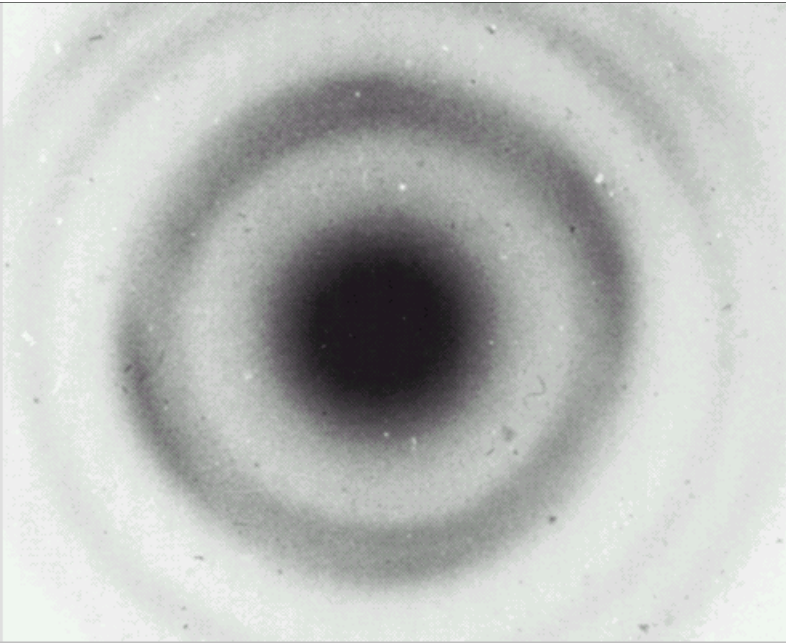


(a) (b)

figs07.mov



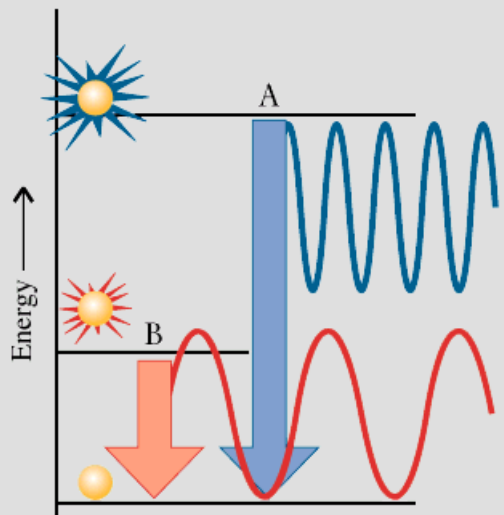
figs07.mov



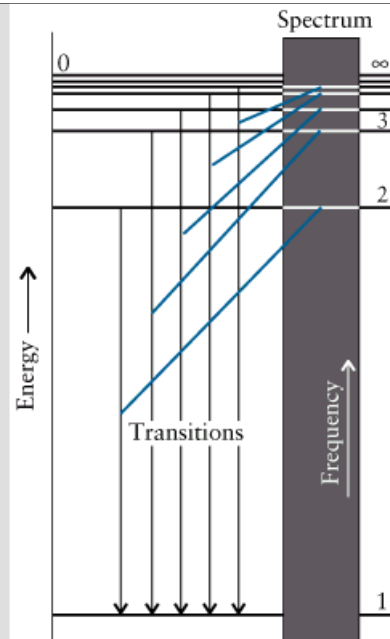
figs07.mov



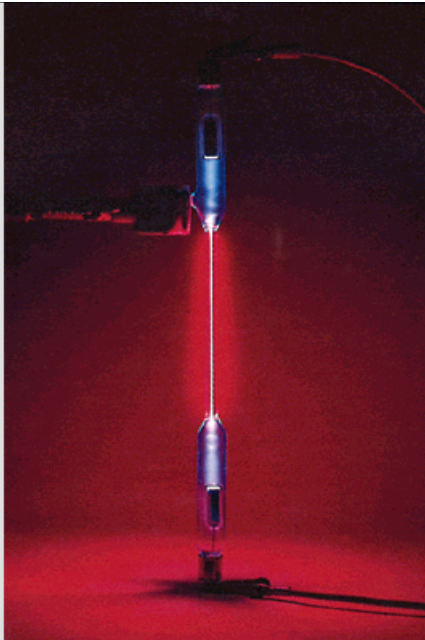
figs07.mov



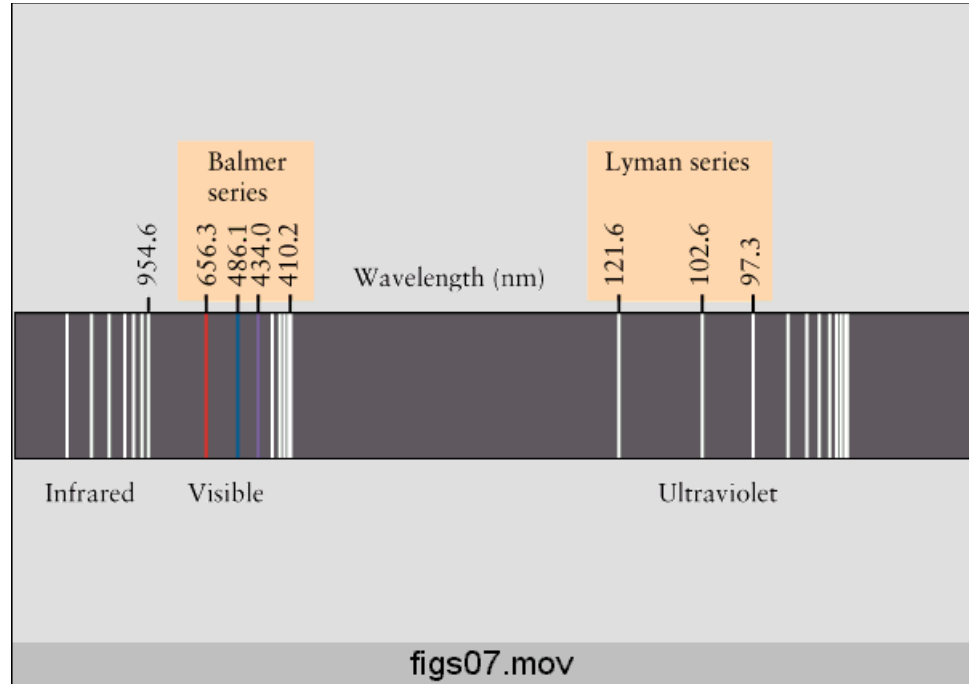
figs07.mov



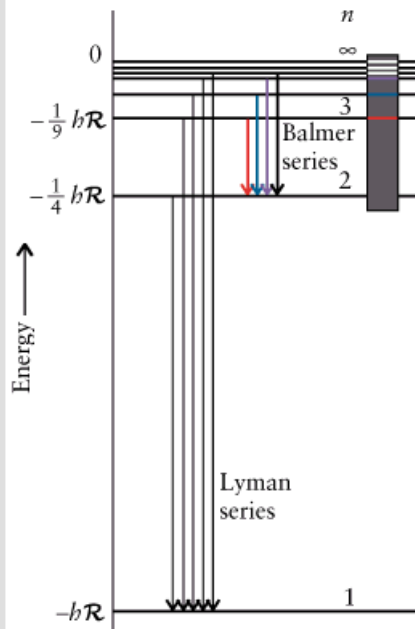
figs07.mov



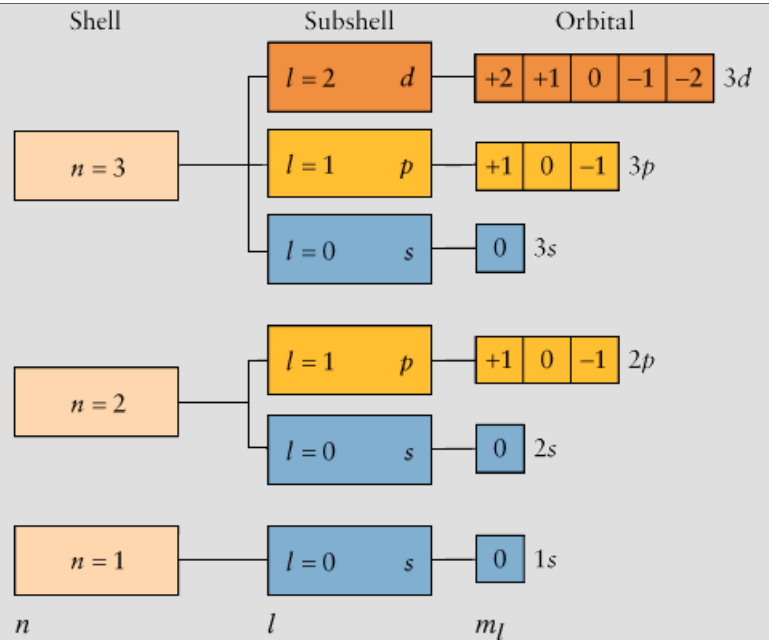
figs07.mov



figs07.mov



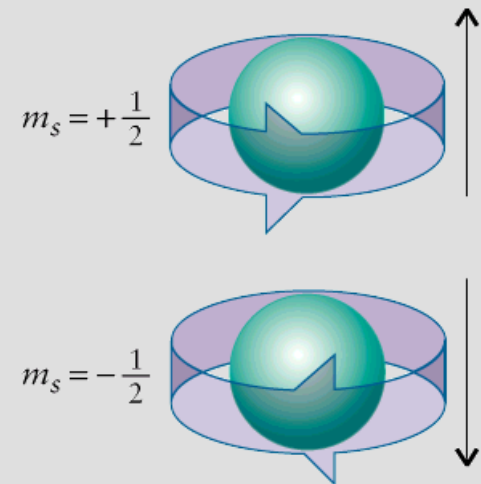
figs07.mov



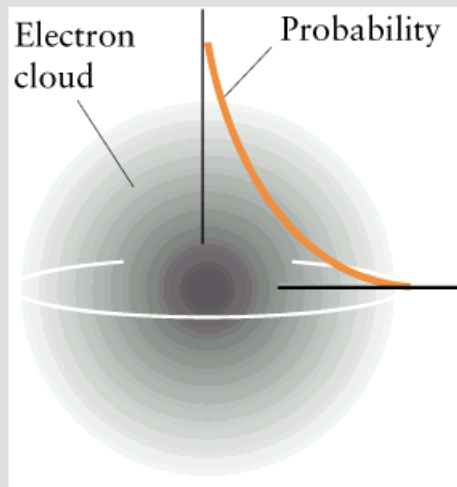
figs07.mov

4f	+3	+2	+1	0	-1	-2	-3
4d	+2	+1	0	-1	-2		
4p	+1	0	-1				
4s	0						16

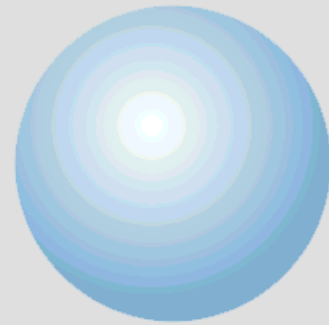
figs07.mov



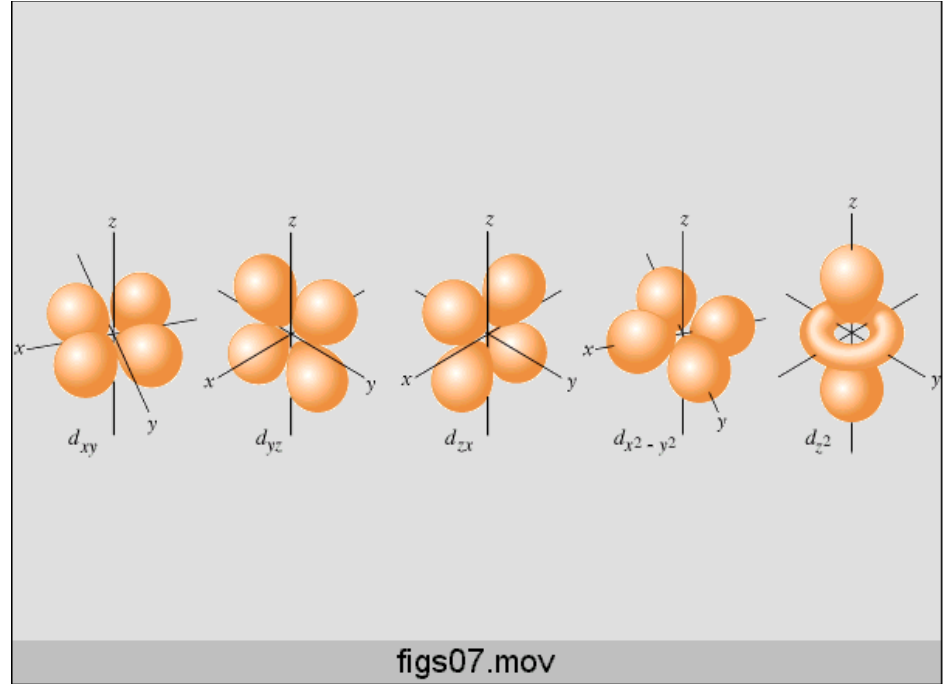
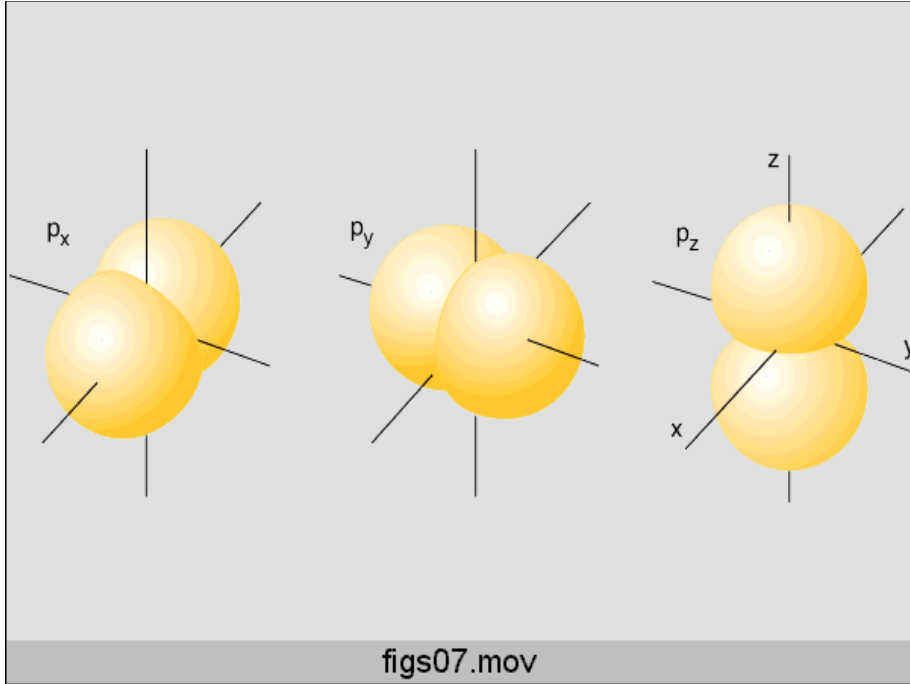
figs07.mov

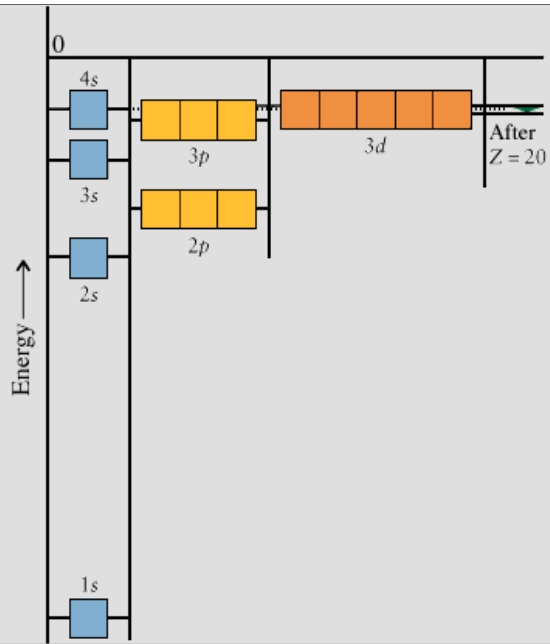


figs07.mov

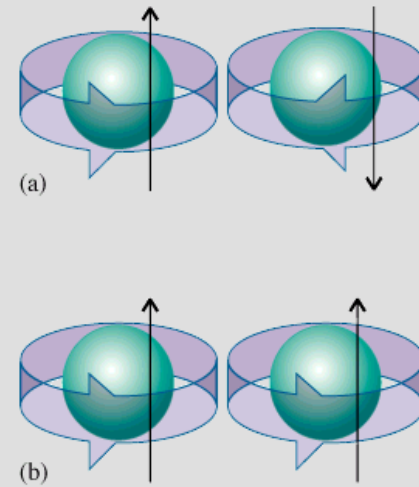


figs07.mov



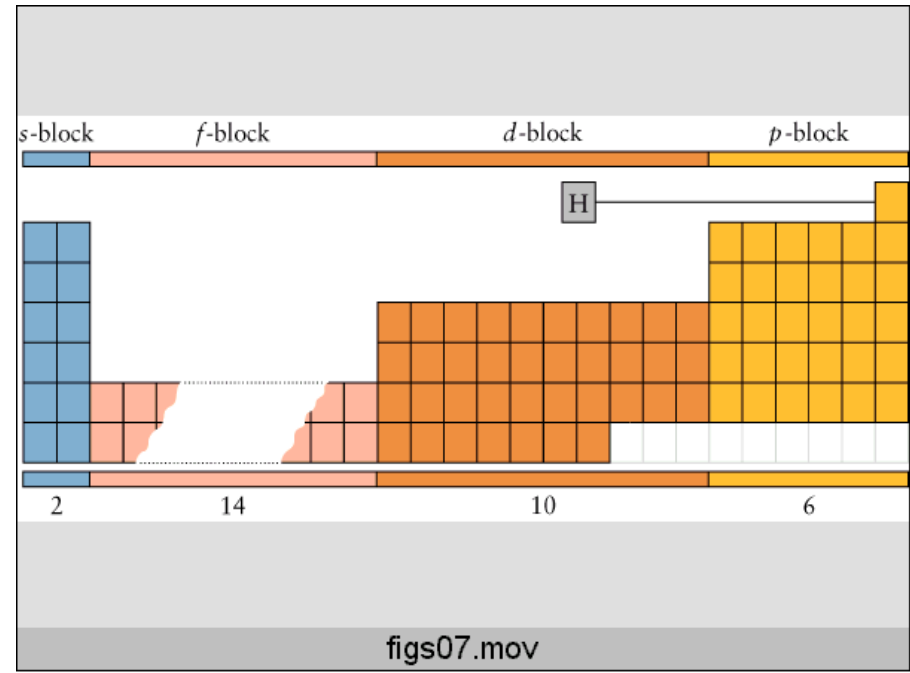
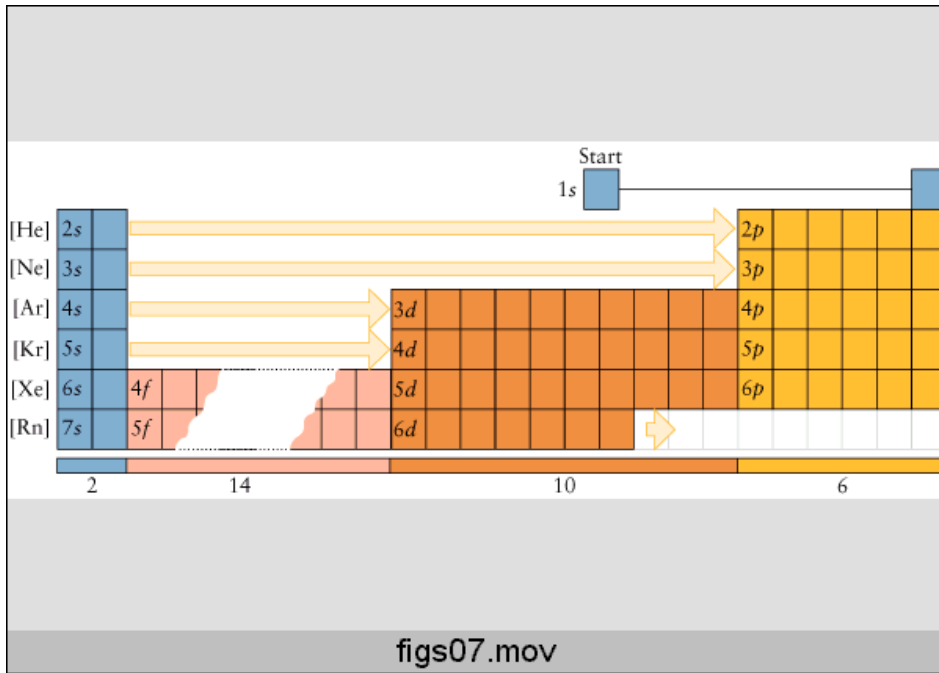


figs07.mov

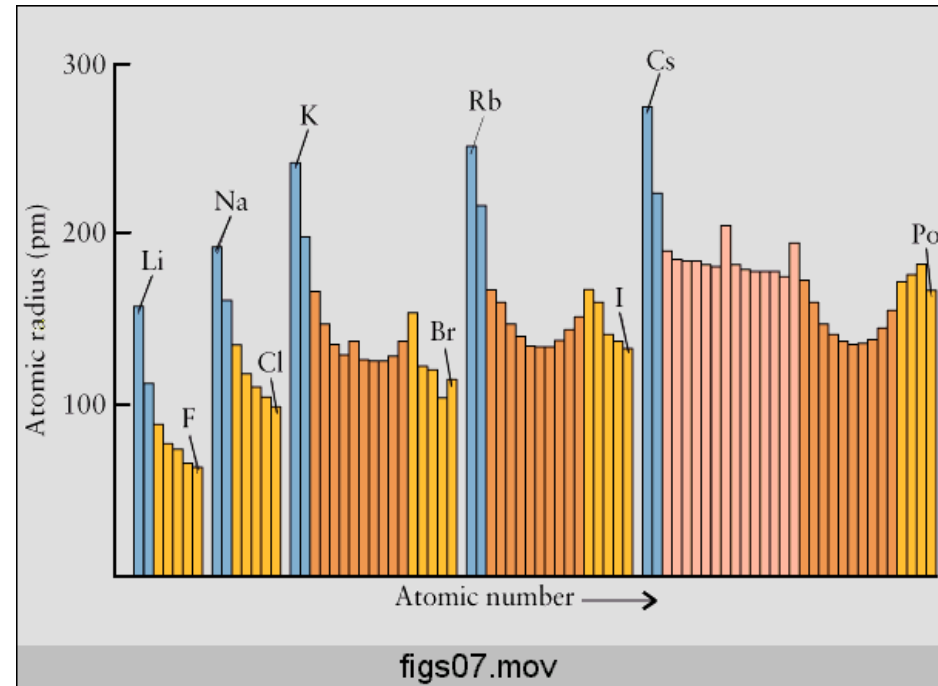
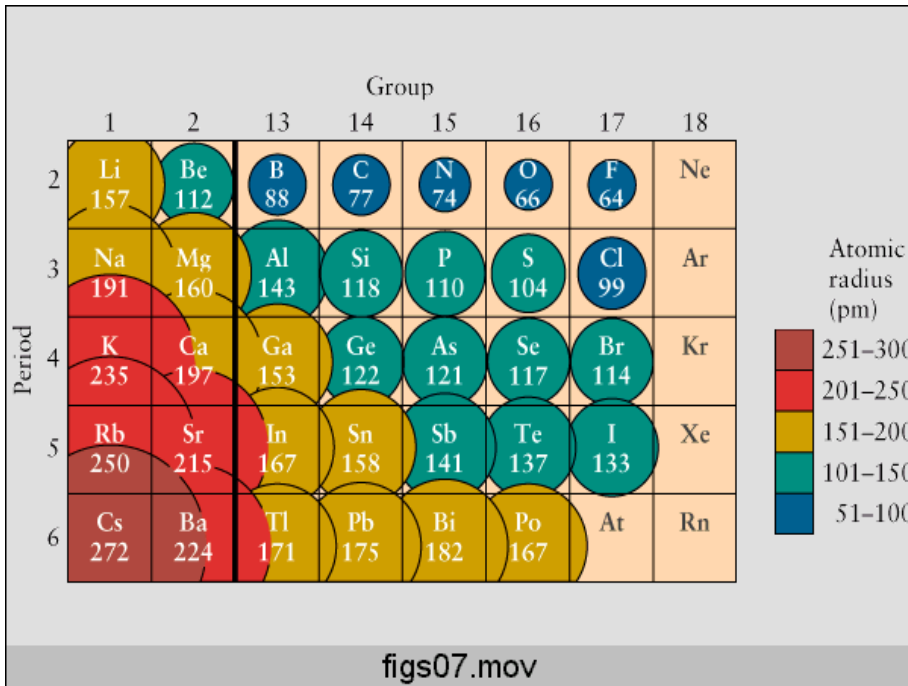
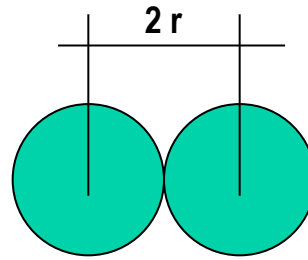


figs07.mov

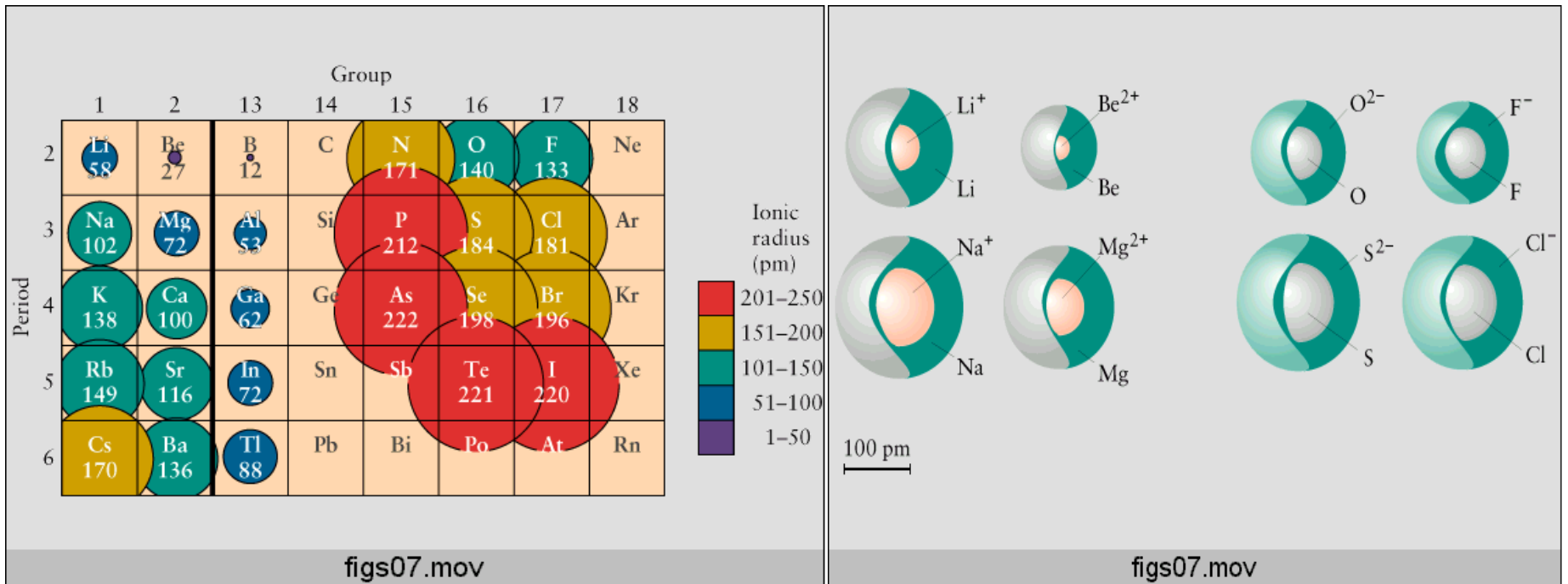
A estrutura eletrônica e a Tabela Periódica



O raio atômico



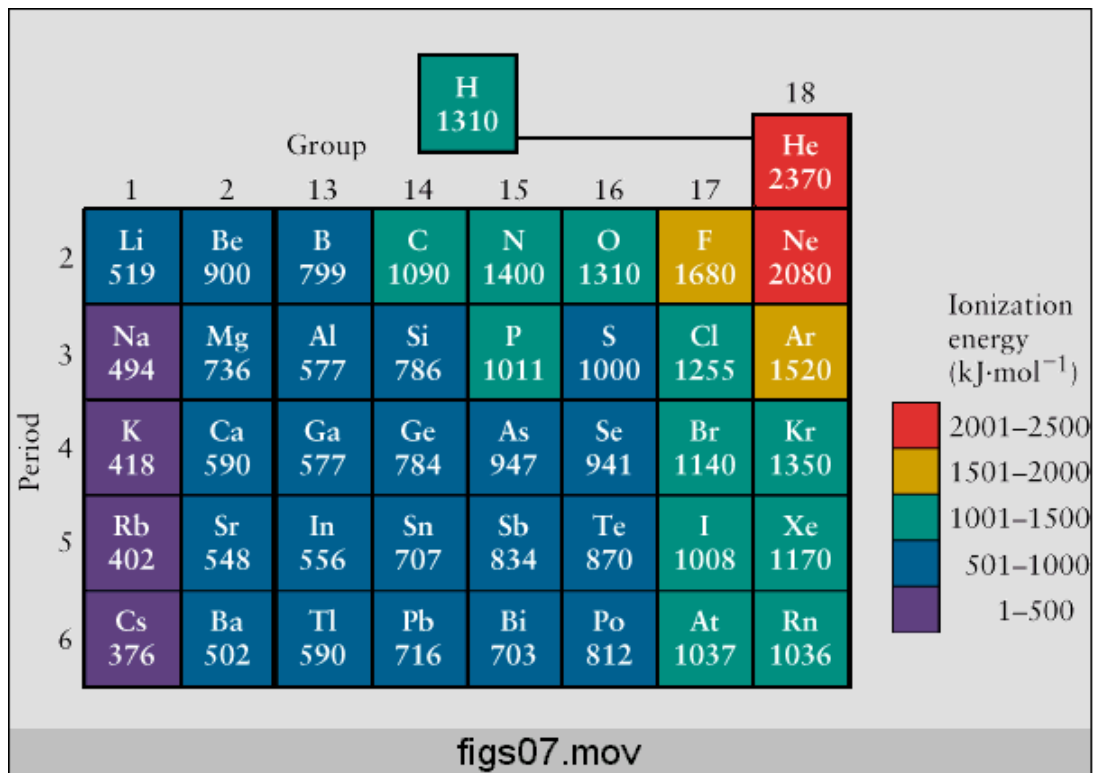
O raio iônico



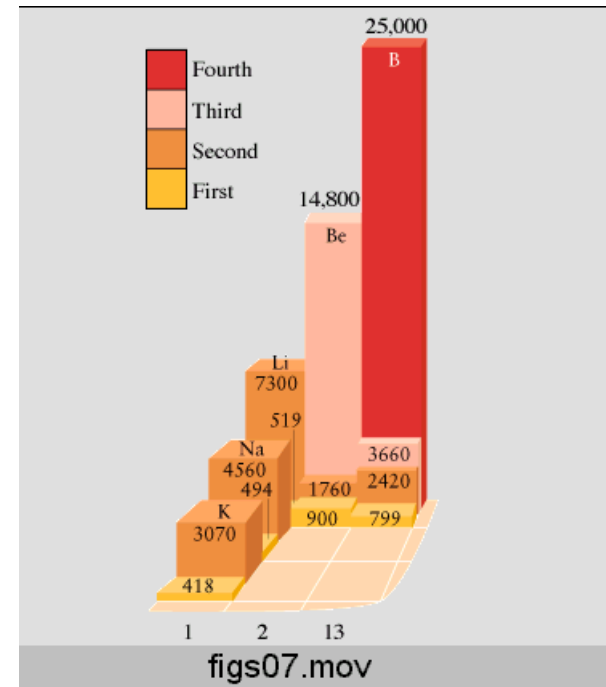
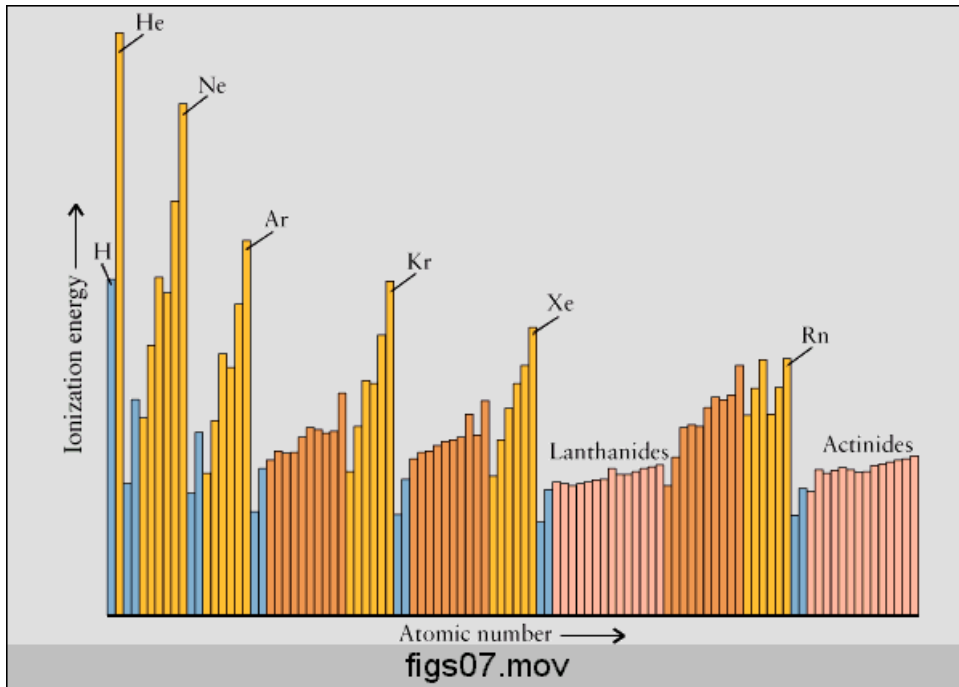
Os raios iônicos geralmente crescem de cima para baixo num grupo e decrescem da esquerda para a direita de um período.

Os cátions são menores que seus átomos geradores e os ânions são maiores.

A energia de ionização



A energia de ionização



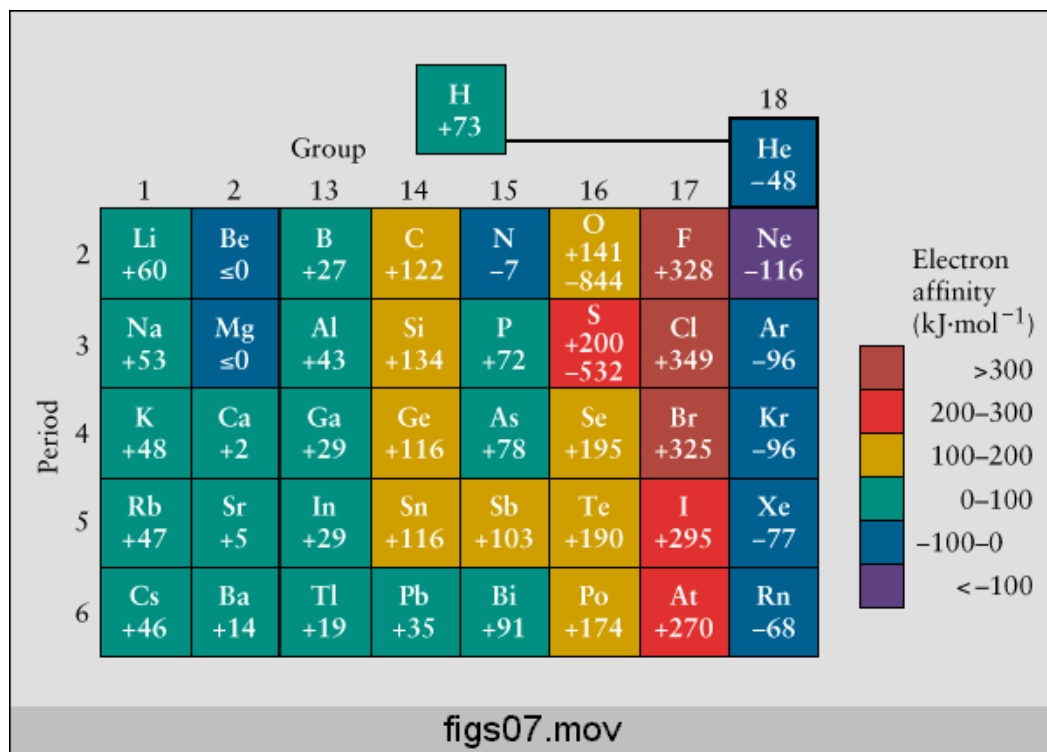
A I_1 é maior para elementos próximos do He e menor para elementos próximos ao Cs. As I_2 são muito maiores se o elétron é retirado de uma camada fechada.

A afinidade eletrônica

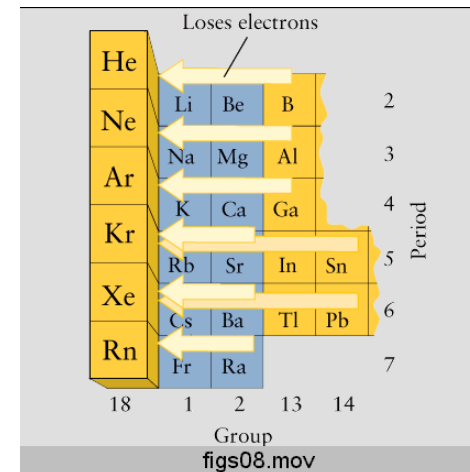
$$E_{ca} = E(X) - E(X^-)$$

Grupo 17 – F, Cl, Br, I (-1)

Grupo 16 – O, S (-2)



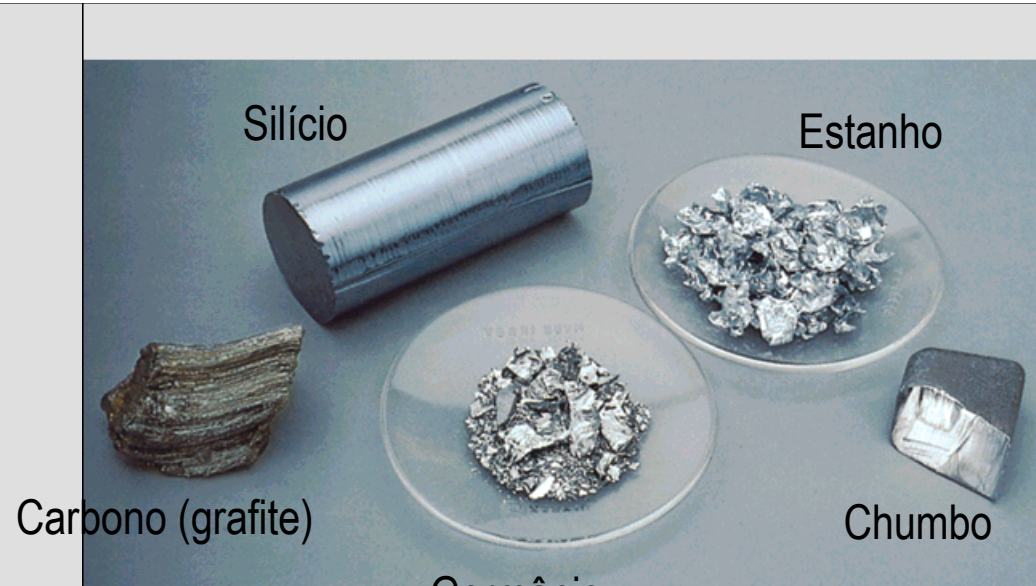
Os elementos dos grupos principais



Os elementos dos grupos principais

Period	Group							18
	1	2	13	14	15	16	17	
2			B	Si				
3			Al	Ge	As			
4			Ga		Sb	Te		
5			In	Sn		Po		
6				Pb	Bi			
7								

figs07.mov



Germânio

figs07.mov

Os metais de transição



Todos os elementos do grupo d são metais com propriedades entre as dos metais do grupo s e os do grupo p . Muitos formam cátions em mais um estado de oxidação.

Ligações Químicas

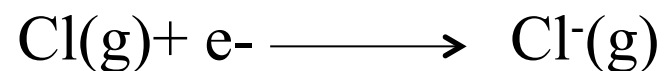
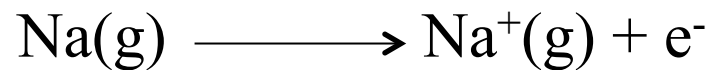


figs08.mov



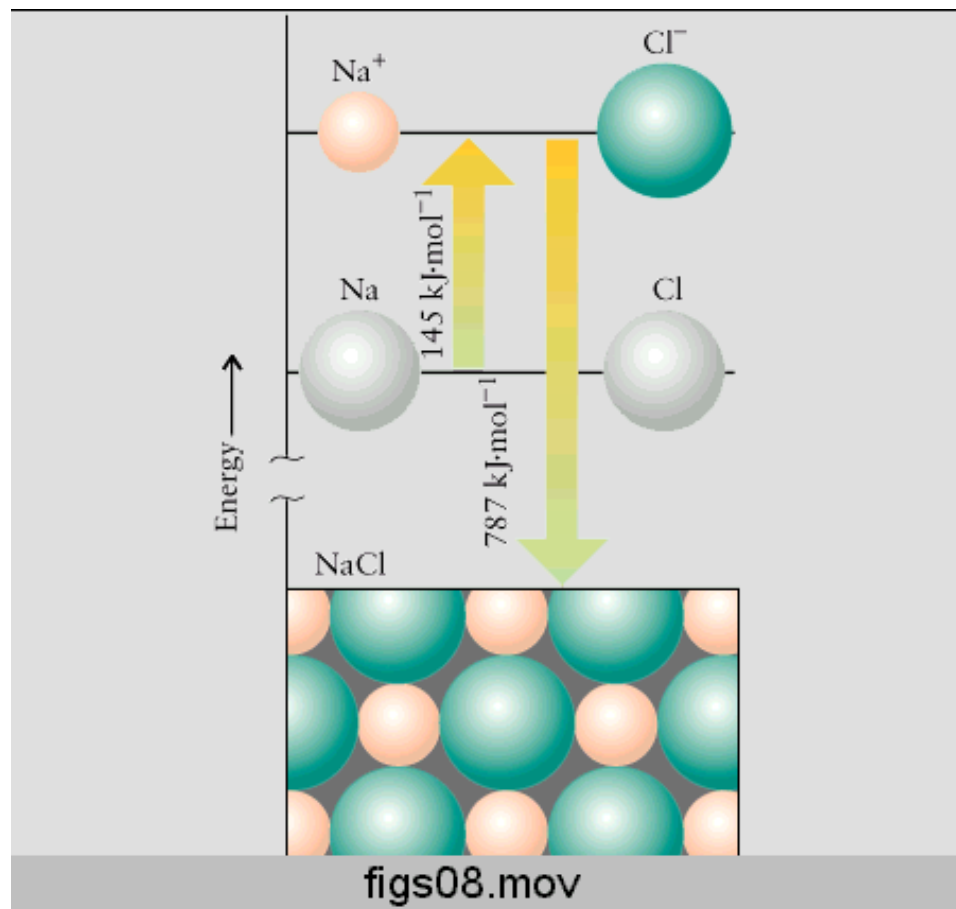
figs08.mov

Ligação iônica



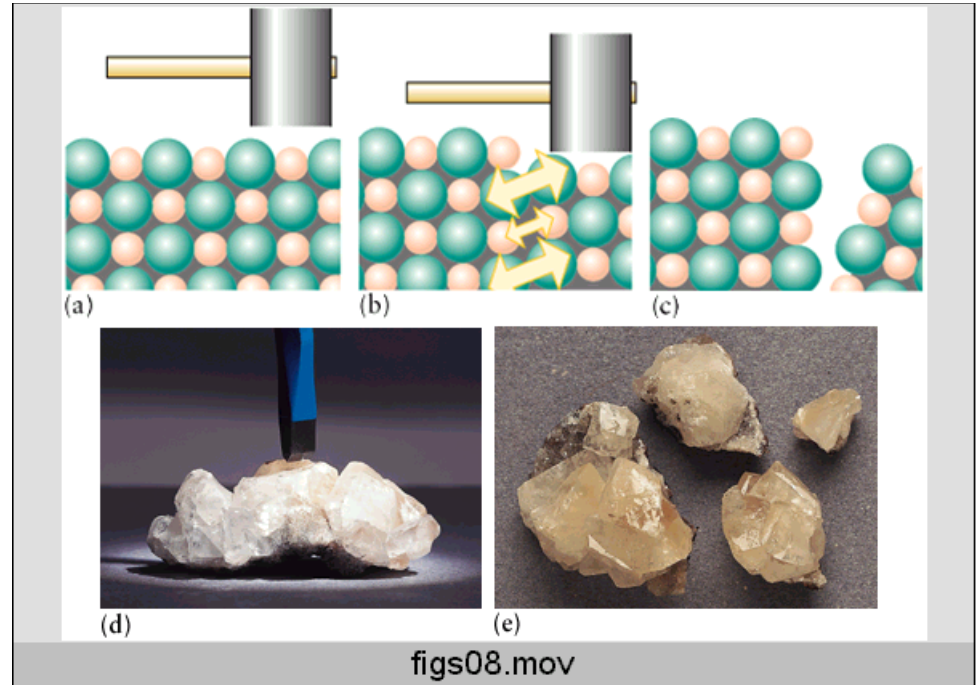
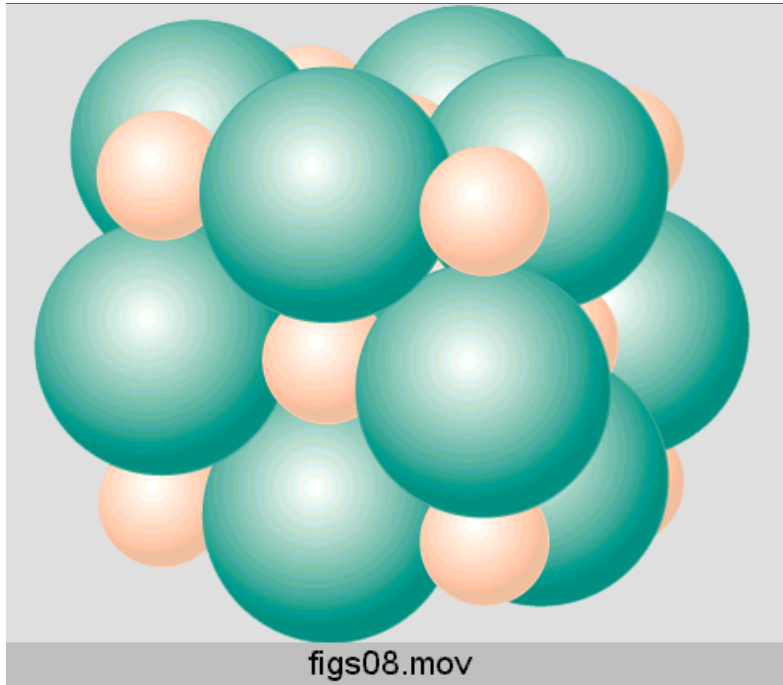
E requerida = 494 kJ mol^{-1}

E liberada = 349 kJ mol^{-1}



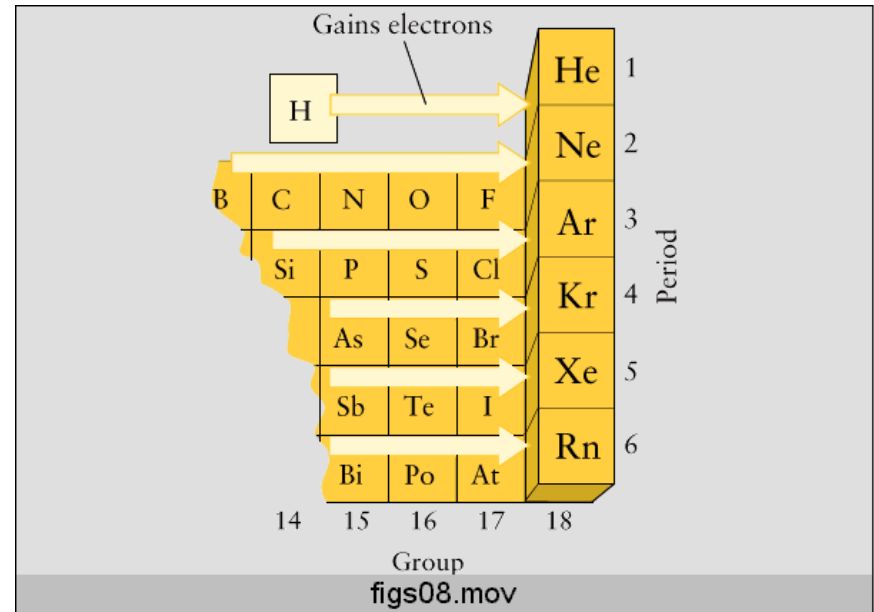
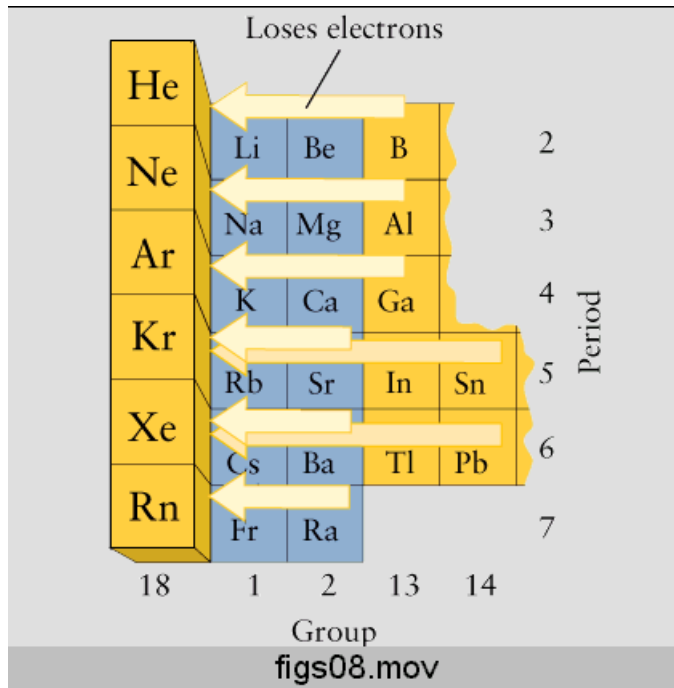
$$145 - 787 = -642 \text{ kJ mol}^{-1}$$

Ligação iônica

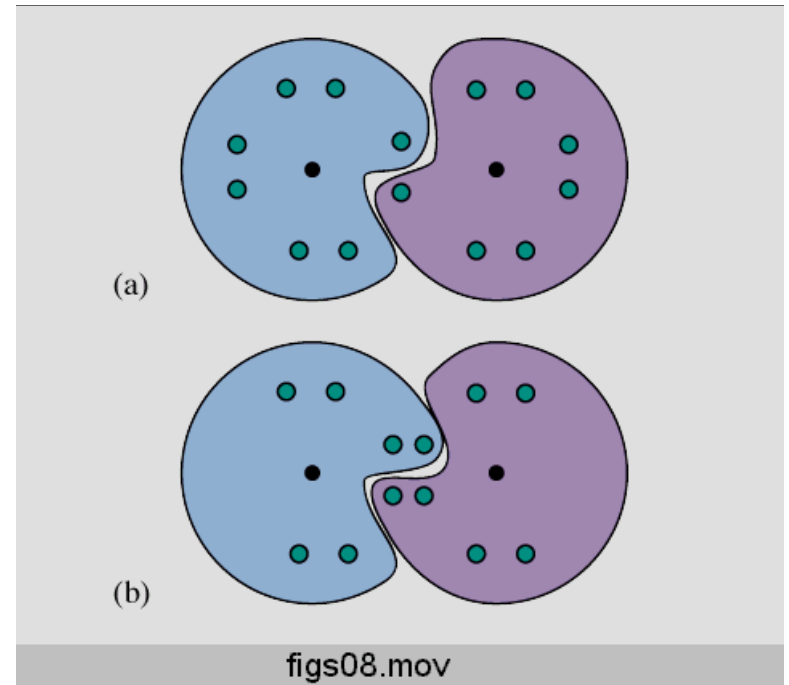
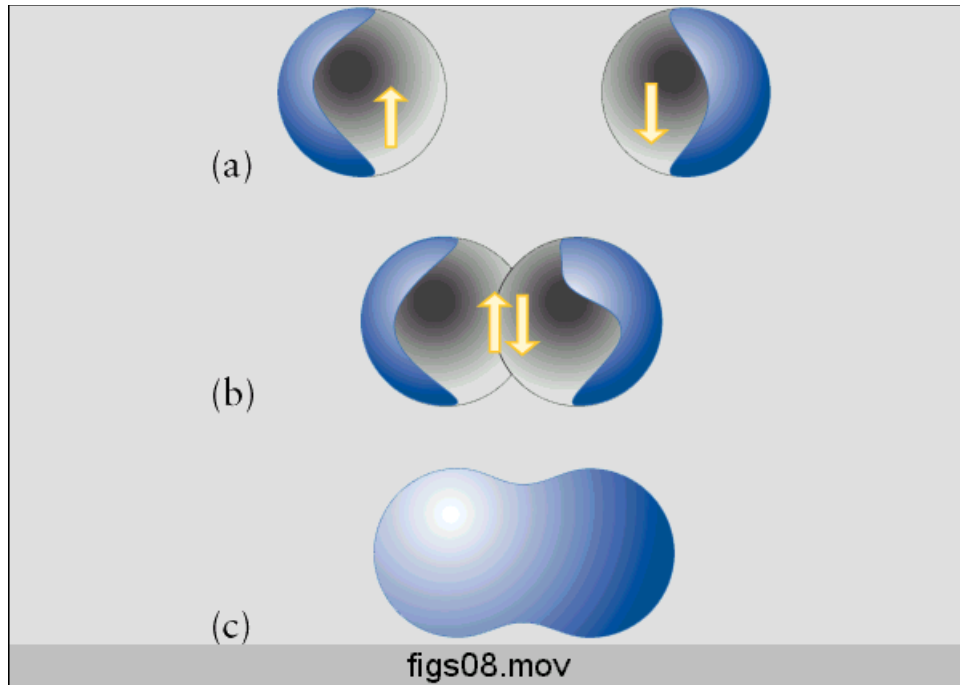


Íons empilham-se em estruturas cristalinas regulares. Sólidos iônicos têm tipicamente altos pontos de fusão e ebulição e são quebradiços. A interação coulombica entre os íons de um sólido é grande quando os íons são pequenos e com carga alta

As configurações eletrônicas

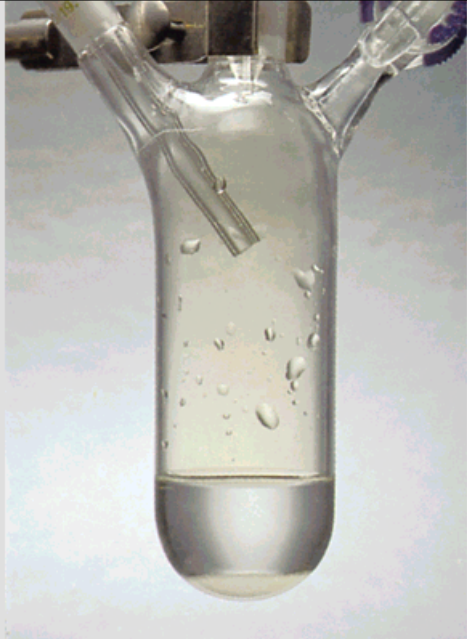


Ligação covalente



Estrutura de Lewis – Regra do Octeto

O poder de atração entre os átomos



figs08.mov

