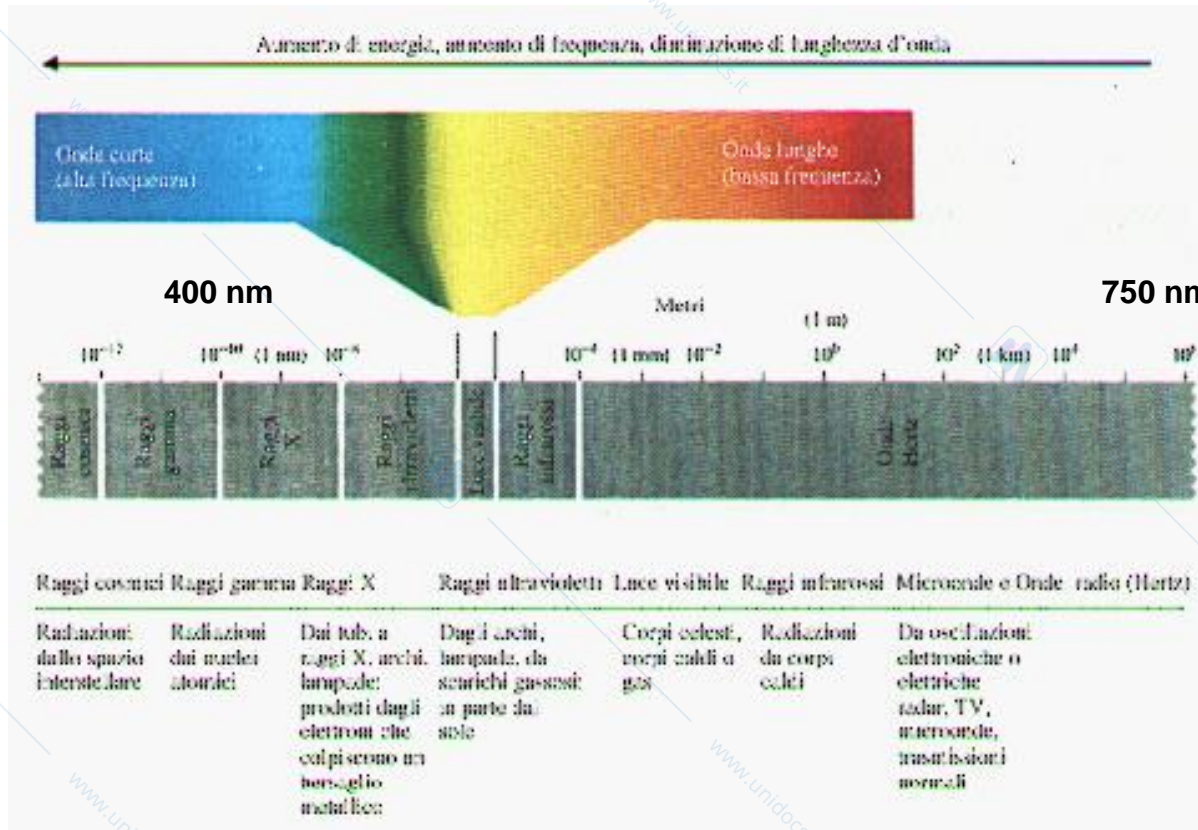


Velocità ( $v$ ) = Lunghezza d'onda ( $\lambda$ ) x Frequenza ( $\nu$ )

$$c = \lambda \nu = 3,00 \times 10^8 \text{ m s}^{-1}$$

# Lo spettro elettromagnetico

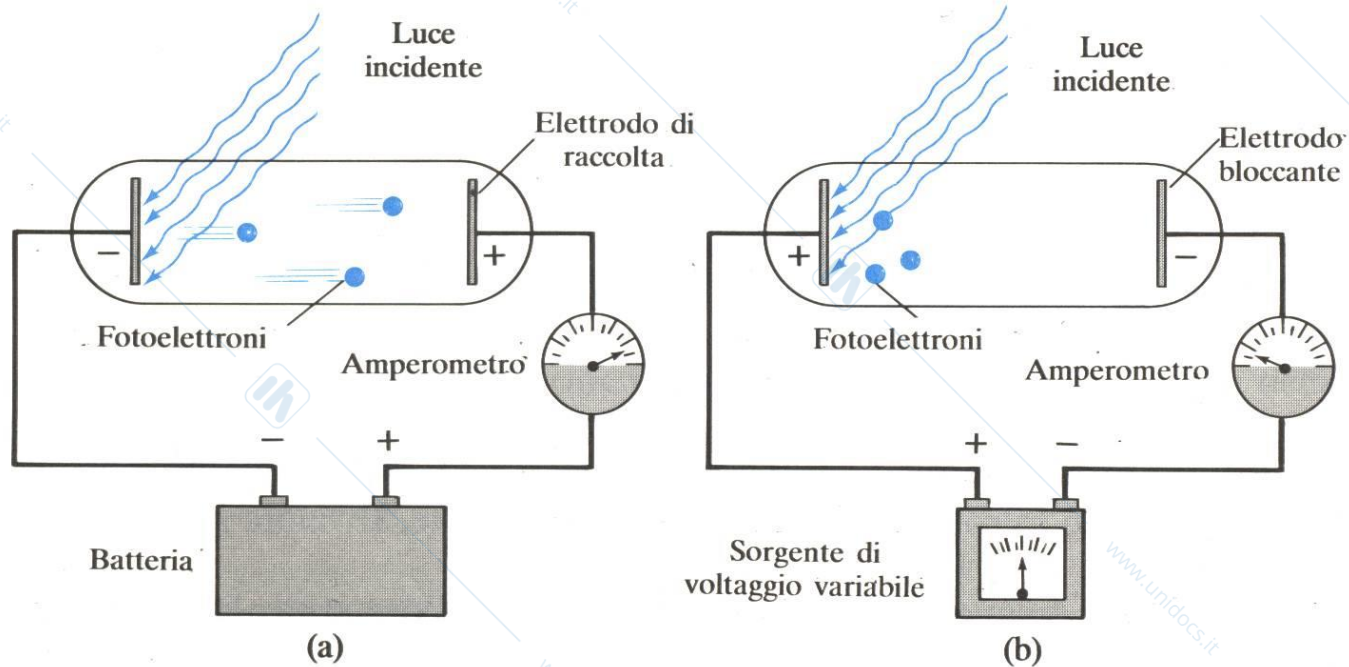


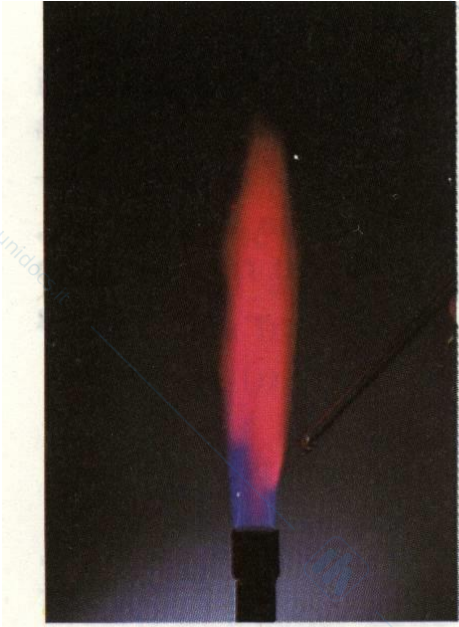
## Legge di Planck

$$E = h\nu$$

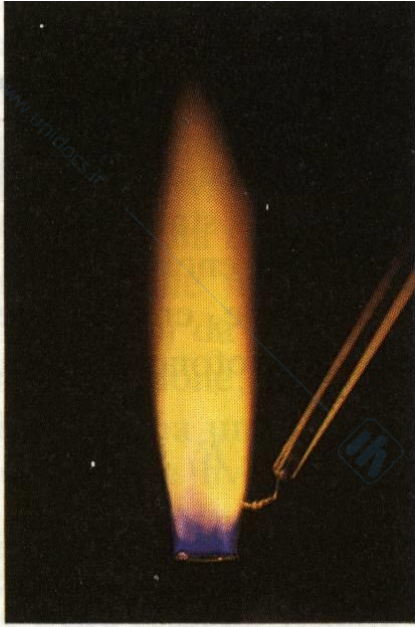
costante

# Effetto FOTOELETTRICO





Litio-rosso

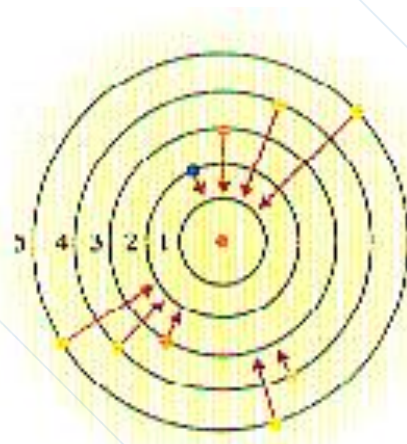
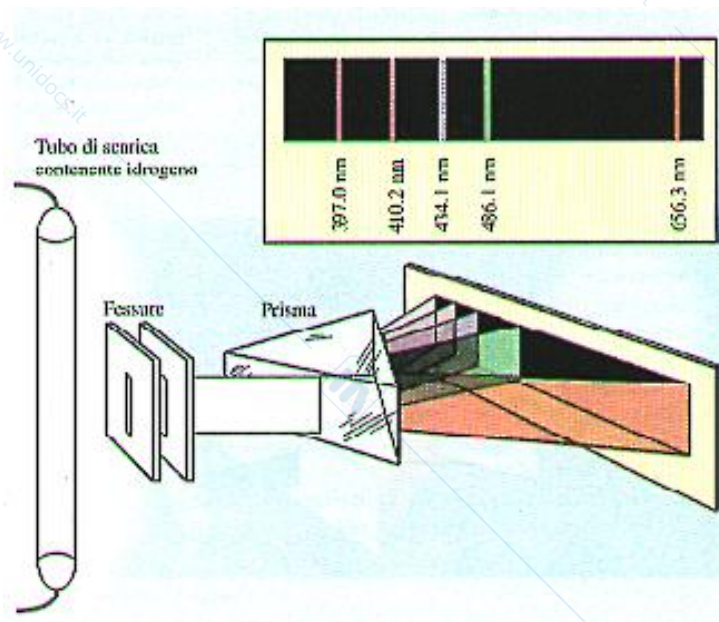


Sodio-giallo

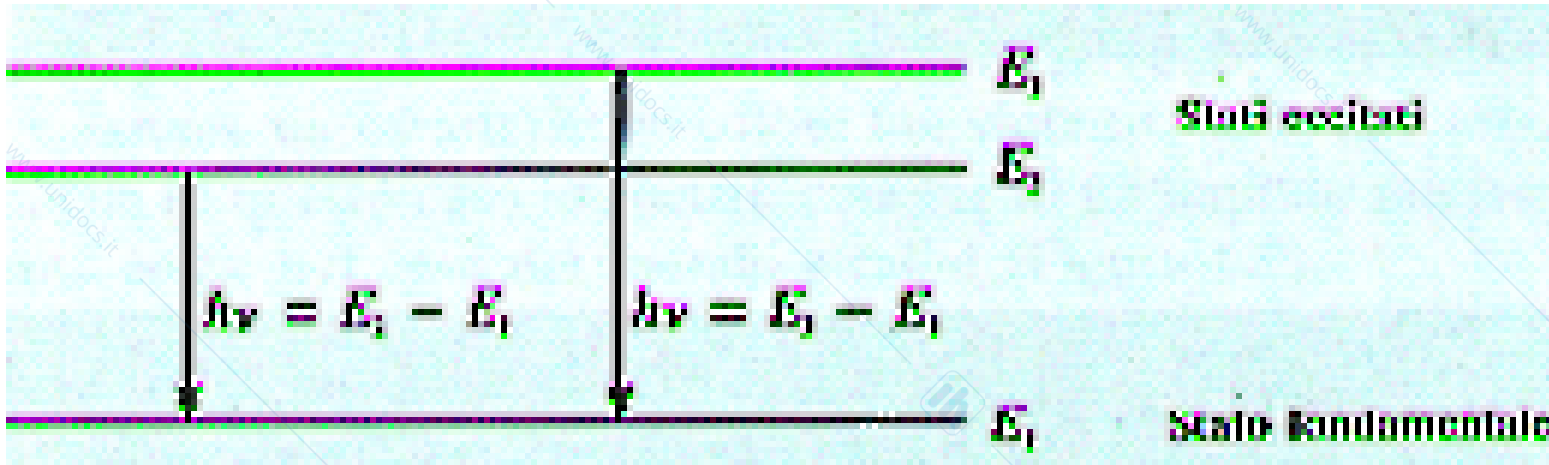


Potassio-violetto

# L'atomo di Bohr

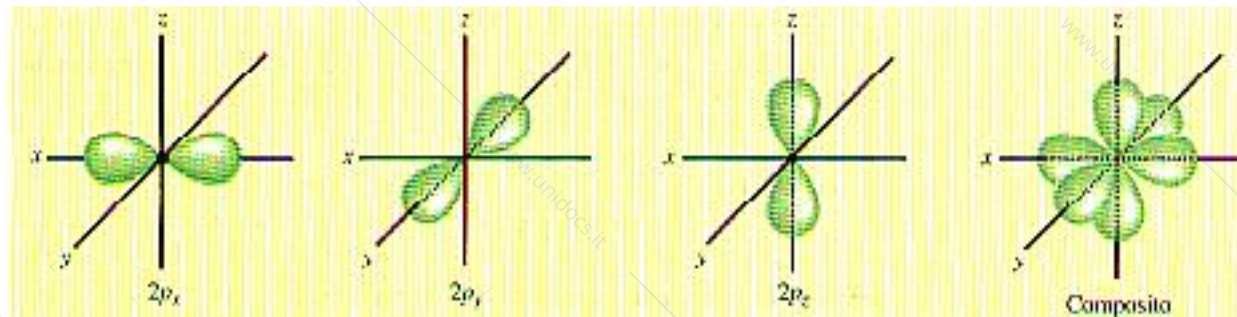
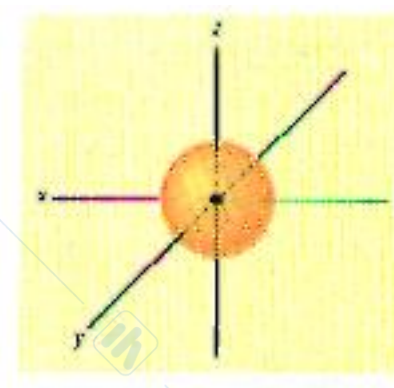
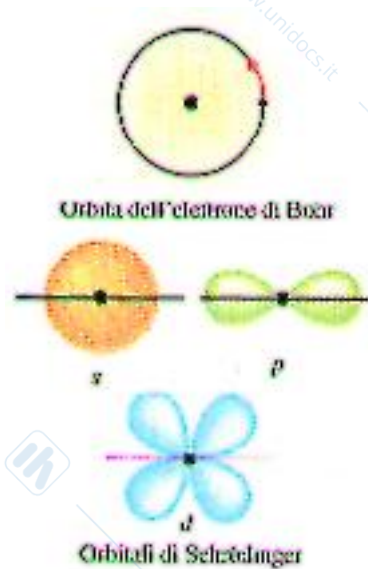


Le orbite di Bohr



$$E_2 - E_1 = h\nu$$

# ORBITALI

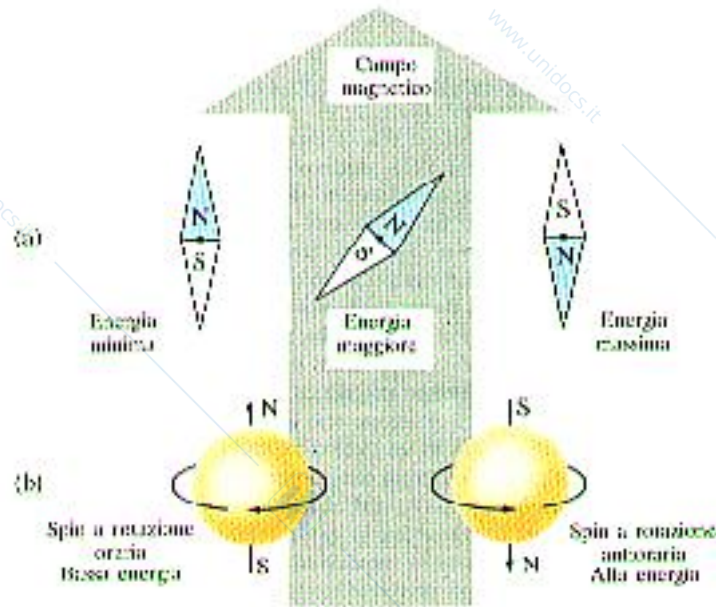


## NUMERI QUANTICI

**n** (distanza), **l** (forma orbitale), **m** (direzione nello spazio)

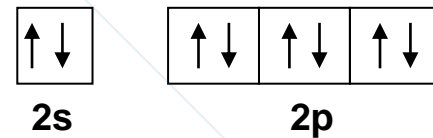
TABELLA 1.1 VALORI DEI NUMERI QUANTICI  $n, l, m$

$n$	$l$	$m$	Orbitali
1	0	0	$\Psi_{1,0,0}$
			un orbitale 1s
2	0	0	$\Psi_{2,0,0}$
	1	-1	$\Psi_{2,1,-1}$
		0	$\Psi_{2,1,0}$
		+1	$\Psi_{2,1,+1}$
		tre orbitali degeneri 2p	
3	0	0	$\Psi_{3,0,0}$
	1	-1	$\Psi_{3,1,-1}$
		0	$\Psi_{3,1,0}$
		+1	$\Psi_{3,1,+1}$
	2	-2	$\Psi_{3,2,-2}$
		-1	$\Psi_{3,2,-1}$
		0	$\Psi_{3,2,0}$
+1		$\Psi_{3,2,+1}$	
	+2	$\Psi_{3,2,+2}$	
		cinque orbitali degeneri 3d	
4	0	0	$\Psi_{4,0,0}$
	1	-1	$\Psi_{4,1,-1}$
		0	$\Psi_{4,1,0}$
		+1	$\Psi_{4,1,+1}$
	2	-2	$\Psi_{4,2,-2}$
		-1	$\Psi_{4,2,-1}$
		0	$\Psi_{4,2,0}$
		+1	$\Psi_{4,2,+1}$
		+2	$\Psi_{4,2,+2}$
	3	-3	$\Psi_{4,3,-3}$
-2		$\Psi_{4,3,-2}$	
-1		$\Psi_{4,3,-1}$	
0		$\Psi_{4,3,0}$	
+1		$\Psi_{4,3,+1}$	
+2		$\Psi_{4,3,+2}$	
+3		$\Psi_{4,3,+3}$	
		sette orbitali degeneri 4f	



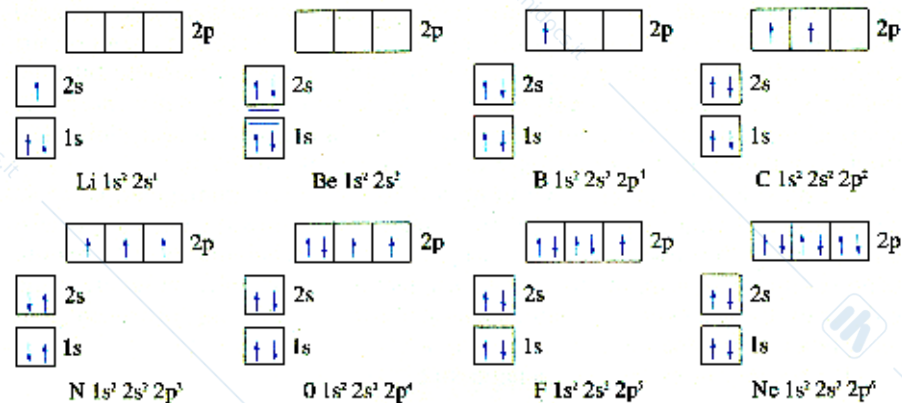
## PRINCIPIO DI ESCLUSIONE DI PAULI

un orbitale non può accogliere più di due elettroni, e quando questo si verifica, i due elettroni devono avere **spin opposto**

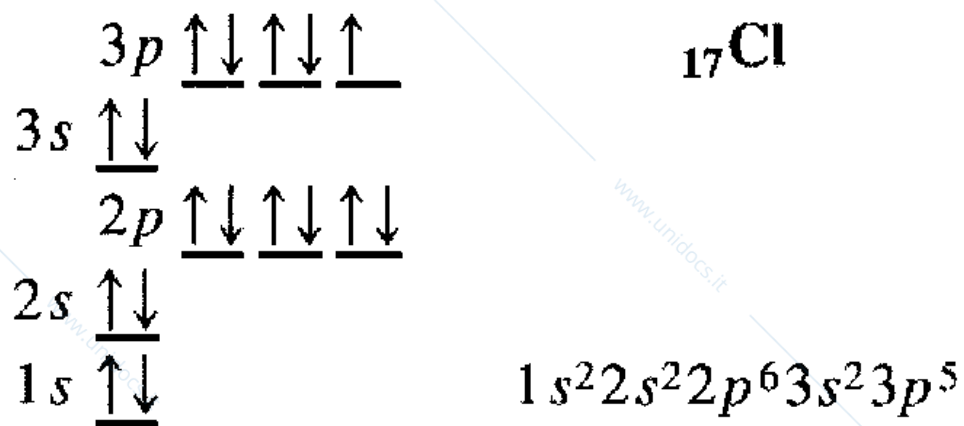
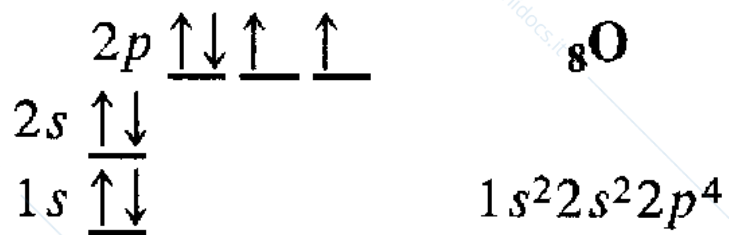


## REGOLA DI HUND

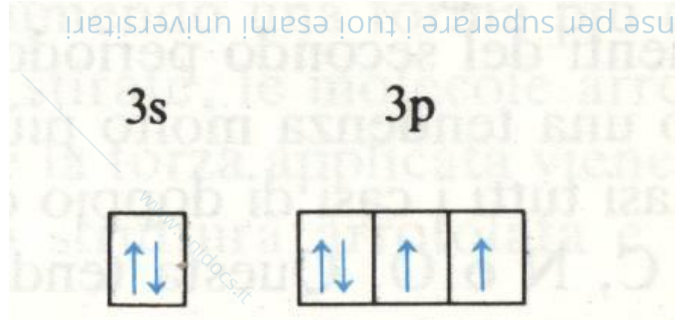
Nella configurazione elettronica a più bassa energia, gli elettroni nello stesso livello energetico, occupano, per quanto possibile, orbitali separati e hanno lo stesso spin



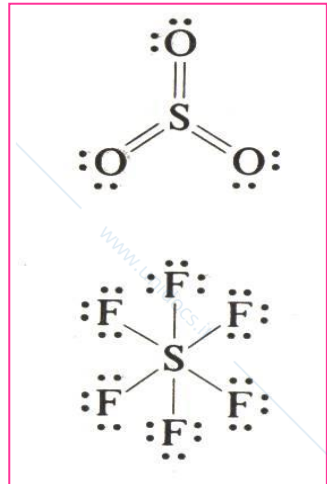
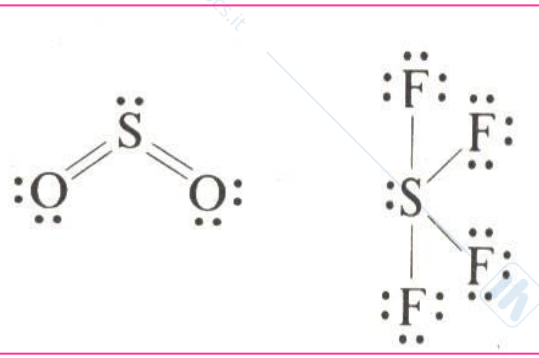
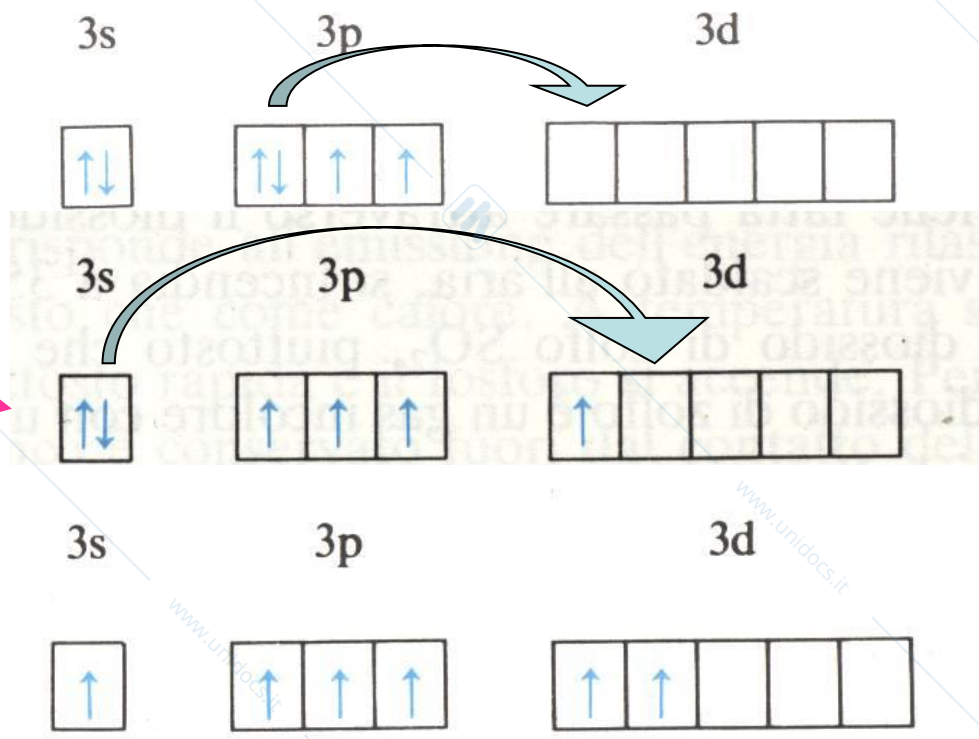
## NOTAZIONE ORBITALICA



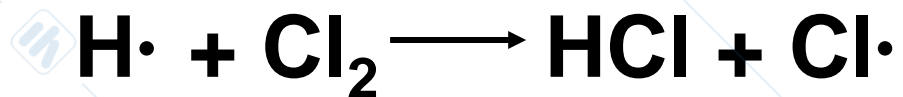
**S** [Ne] 3s<sup>2</sup>3p<sup>4</sup>



**H<sub>2</sub>S** **SCI<sub>2</sub>**



# Reazioni FOTOCHIMICHE



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# NMR - MRI

