Textbooks and references books

Textbook:

- "*Inorganic Chemistry*" by C. E. Housecroft and A. G. Sharpe, Prentice Hall (1st ed., 2001; 2nd ed., 2005; 3rd ed.)

Other suggested readings:

- *Inorganic Chemistry*, 3rd ed., by D. F. Shriver et al., OUP (1999).
- *Basic Inorganic Chemistry*, 3rd ed., by F. A. Cotton et al., Wiley (1995)
- *Concepts and Models of Inorganic Chemistry*, 3rd ed., by B. Douglas et al., Wiley (1994)
- *Inorganic Chemistry,* 3rd ed., by G.L. Miessler and D.A. Tarr, Prentice Hall (2004)

Schroedinger thinking about his equation.

Schroedinger: If electrons are waves, their postion and motion in space must obey a wave equation.

Solutions of wave equations yield wavefunctions, Ψ, which contain the information required to describe ALL of the properties of the wave.

Provides a picture of the electronic distributions of the electrons about an the nucleus of an atom and about the connected nuclei of a molecule.

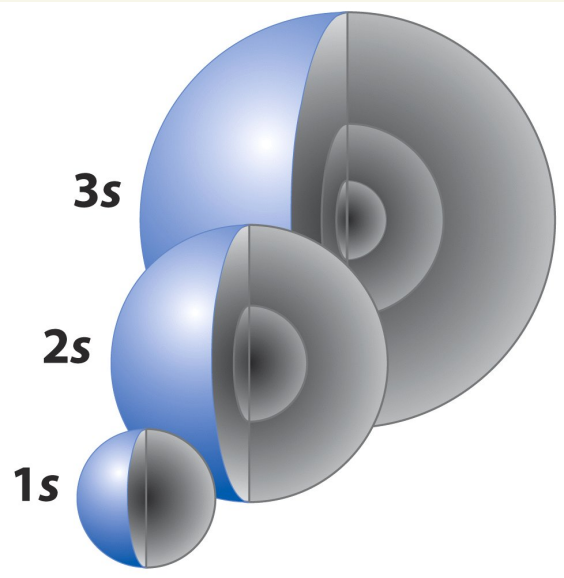
Wavefunctions and orbitals

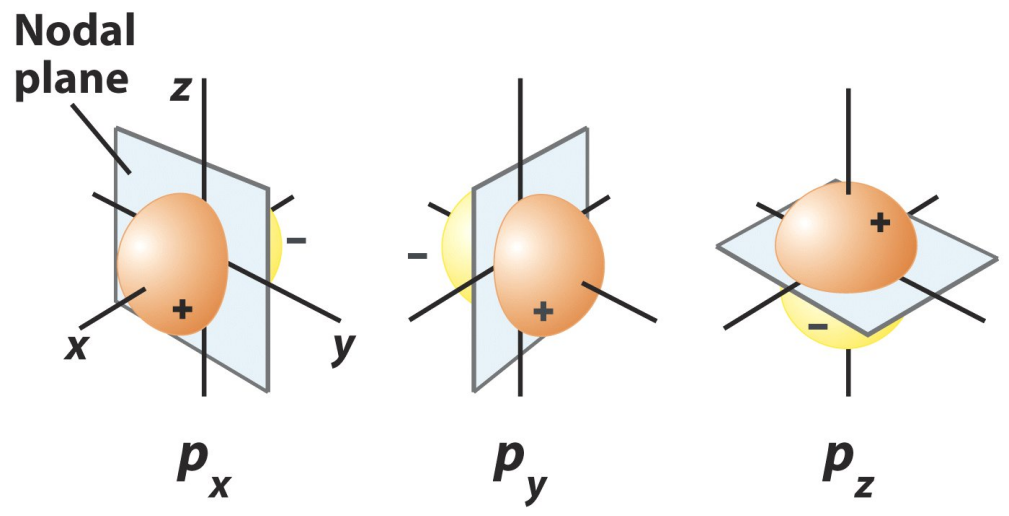
Obital: defined by the quantum numbers n, *l* and m_l

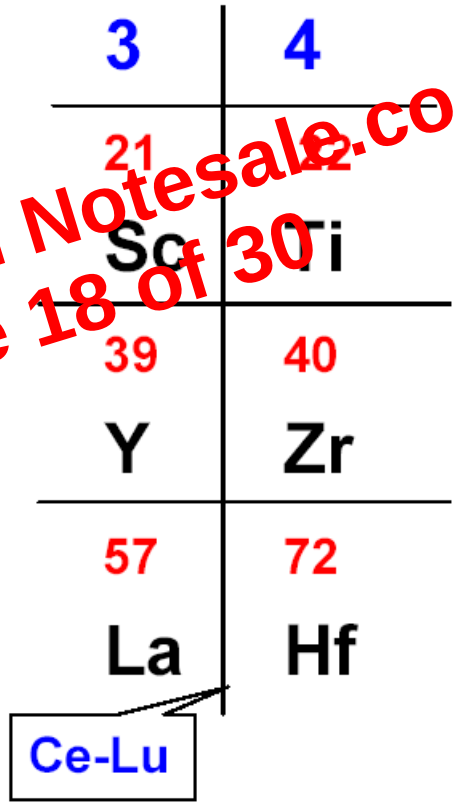
Orbital is a wavefunction

Orbital is a region of space occupied by an electron

Orbitals has energies, shapes and orientation in space







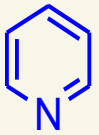
57 Lanthanum La $[Xe]5d^16s^2$

.....

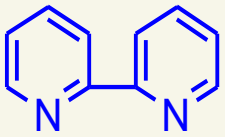
72 Hafnium Hf $[Xe]4f^{14}5d^26s^2$

(C) No. of donor atom

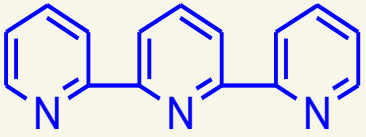
unidentate	bidentate	tridentate
NH_3 ammonia or ammine	$NH_2CH_2CH_2NH_2$ ethylenediamine (en)	$NH(CH_2NH_2)_2$ diethylenetriamine (dien)



pyridine
py



2,2'-bipyridine
bipy



2,2':6',6"-terpyridine
terpy

Metal complexes with polydentate (chelating) ligands are more stable than those with unidentate analogues.

Chelate effect