

Atomic Orbitals

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Atomic orbitals a mathematical term that describes the position and wavelike behavior of an electron in an atom

- Use to determine the probability of finding an electron(belonging to an atom) in a specific region around the nucleus of the atom (where an electron is most likely to be found)
- Each atomic orbital can hold a maximum of 2 electrons

Quantum numbers - used to describe the trajectory(轨道) and the movement of an electron in an atom, and each electron has an equal and opposite spin when compare to other, which four quantum number use to describe it. (principal quantum number, azimuthal quantum number, the magnetic quantum number and electron spin quantum number)

Quantum number describe the motion and behaviors of electron in each orbitals

S - orbital is spherical with the nucleus at its Centre

P - orbitals is dumbbell shaped

I only need to know 2

Principle quantum (n)

- Positive integer
- Represent the energy level of the electron
- Larger the value of n, the further away from the nucleus

Angular momentum quantum number (l)

- 0 - n-1
- Shape of the orbital
- When $l=0$, = s orbital, $l=1$, = p orbitals

Magnetic quantum number (ml)

- How many orbitals there are of a type per energy level, therefore describes a specific orbital amongst particular set

Spin quantum number (ms)

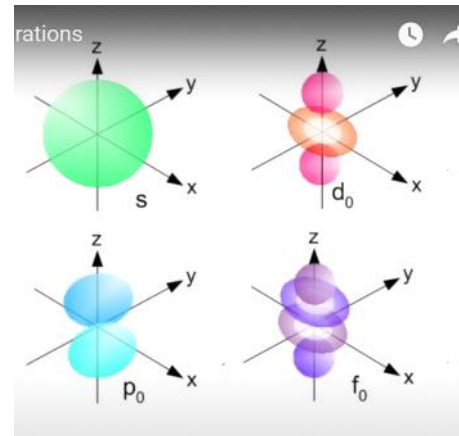
- 1/2 or -1/2
- Two electron in each orbitals, one of them have to be 1/2, then the other one must be -1/2.

Electron exist in orbitals

s-orbitals and p-orbitals

We are able to find electron there

Each principle describe the different part and facts about the electron in orbitals



WEB: <https://byjus.com/chemistry/atomic-orbitals/#:~:text=An%20atomic%20orbital%20is%20a,occupy%20each%20of%20those%20orbitals.>