

Bohr's Model of the Atom

Niels Bohr (1913):

- *studied the light produced when atoms were excited by heat or electricity*
 - *current model of atom couldn't explain why unique colors were obtained by atoms of different elements*
- Bohr proposed that electrons are in orbits (energy levels)
 - when excited jump to a higher orbit.
 - When they fall back to the original they give off light



Bohr's Model of the Atom

Bohr's model:

- Neutrons and protons located in center of atom in the nucleus
- electrons orbit the nucleus like planets orbit the sun in energy levels
- each orbit can hold a specific maximum number of electrons = $2(n^2)$

Orbit (energy level)	maximum # electrons
1	2
2	8
3	18
4	32

Bohr's Model of the Atom

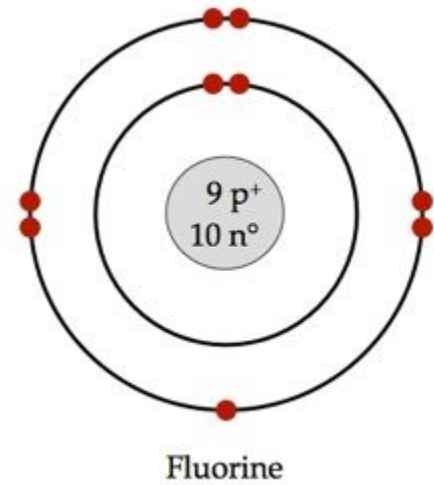
e.g. fluorine:

9
F
19.00

$$\#P = 9$$

$$\#e^- = 9$$

$$\#N = 10$$



Bohr's Model of the Atom

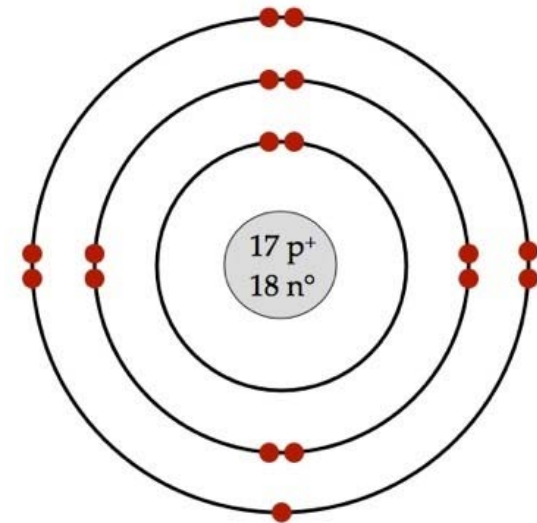
e.g. chlorine:



$$\#P = 17$$

$$\#e^- = 17$$

$$\#N = 18$$



Chlorine

Notes

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