

Re: Bohr's Atom still number one

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2007-05/msg00809.html>

- *From:* bz <bz+spr@xxxxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Sat, 5 May 2007 20:29:07 +0000 (UTC)
-

"guskz@xxxxxxxx" <guskz@xxxxxxxx> wrote in
<news:1178394138.430885.325220@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>:

On May 5, 10:41 am, bz <bz+...@xxxxxxxxxxxxxxxxxxxxxxxx> wrote:
snip too long

.....

My main point is that the Bohr model predicts a rapid loss of energy with all electrons collapsing into the nucleus. Bohr could not explain why orbiting electrons would not radiate constantly.

By radiate, you mean emit photons?

Yes.

Why would they need to radiate under Bohrs?

Because they are undergoing constant acceleration toward the nucleus, just as the earth undergoes constant acceleration toward the sun.

And why collapse into the nucleus...since protons repulse them

Protons repulse them????

Unlike charges attract. Protons are positive. Electrons are negative.

What do you think causes electrons to associate with protons anyway?

and
electrons have a high velocity?

What makes you think they have a high velocity in the atom?

They don't in the modern atomic theory, but, you are correct when you think that, in Bohrs model, they will need to be traveling.

They will need to be attracted to the nucleus. That attraction will 'push' them toward the nucleus. Only their speed keeps them from reaching it.

Electrons, when ever they travel at a high speed and their direction of travel is changed, radiate energy.

.....

(energy = heat from reaction = photons)

Not all energy is manifest as photons.

Correct, but they would know what happens to the photons(emitted or absorbed) from the total Energy of the reaction (before and after).

A chemical reaction may require energy of activation (to get the reactants across an energy barrier.) It may absorb or give off heat, depending on whether the products are in a lower energy state than the reactants.

Don't know my chemistry....say $2H_2 + O_2 + E = 2H_2O + \dots$

No.

$2H_2 + O_2 \rightarrow 2H_2O + \text{energy}$

Bravo..!

They should know the total energy before and after of
chemical

Re: Bohr's Atom still number one

reactions

Those can usually be predicted.

(therefore the total photons produced or absorbed as well)?

Whether or not photons are produced depends on the reaction conditions. For example, if the reaction takes place inside a fuel cell, the energy produced is in the form of electromotive force rather than photons.

Ok but that's not my point which is you said they weren't sure when the photons are emitted or instead absorbed...

I did NOT say 'they are not sure'.

I re-pasted your past answer below here:

You previously said:

All we know for sure is that changes in energy state **SOMETIMES** are accompanied by emission of photons and that absorption of a photon results in changes in the energy level(s).

There's a difference between **SOMETIMES**...and knowing exactly what occurs during a chemical reaction.

What makes you think I was talking about chemical reactions?

I was talking about Atoms OR Molecules in transition between two different states of excitement. Transitions are only associated with photon emission/absorbtion some of the time. NOT all the time.

My point being that you should NOT assume that photons are always emitted or absorbed because it is not true.

One could be ground state and the other could be a triplet state, for example. Or we could be talking about transition from an excited state to a triplet state.

Re: Bohr's Atom still number one

Re: Bohr's Atom still number one

See <http://en.wikipedia.org/wiki/Phosphorescence>

.....

The sun will also be affected and there will be a similar delay before this occurs.

You may be right, but I recommend that you study physics, chemistry and math.

Master those subjects before you try the more challenging subjects like 'Elementary Omnipotence and Omniscience', the graduate courses in 'Godhood', and the PostDoctoral position of 'Master of the Universe'.

Your questions show that you are not doing your homework.

—
bz

please pardon my infinite ignorance, the set-of-things-I-do-not-know is an infinite set.

bz+spr@xxxxxxxxxxxxxxxxxxxxx remove ch100-5 to avoid spam trap

.

Re: Bohr's Atom still number one