

#76 Brownian Motion, Nanotechnology - Unlimited Supply of Energy?

by Nate A. Lindell 22 July 2012

It's interesting to me how different associations combine in minds to lead to possibly obvious yet great discoveries. E.g., Archimedes & his bathtub, Newton & his apple.... Helax, I'm not claiming this idea of mine is on Newton's or Archimedes level, but, as Einstein's observation that time must be taken into consideration to more accurately understand the universe & as Hofstadter's observation that cognition is, possibly, based on analogies, sometimes people overlook the obvious. Well, Einstein's known for $E=mc^2$, making me think of energy while I recently read his bio by Clark; and in this bio, "Brownian motion" (i.e. the random movement of molecules of a liquid) was touched upon; while I've long been interested in nanotech, particularly the creation of super-strong filaments of pure carbon. All of these ideas led to this.

Brownian motion is a potential source of energy, because motion is caused by some energy (in the case of Brownian motion, as I understand it, the energy is that of the electrical charges of the sub-atomic particles repelling and attracting each other, which is increased with increases in temperature...). The trick is "capturing" this energy & converting it into useable energy.

This is where the nanotech comes in.

Consider windmills: they capture the energy of moving molecules of air¹ and convert it into useable energy. I'm proposing that nanotechnology be used in a similar way to harvest the energy from Brownian motion. It seems like a theory worth exploring anyway.

Superstrong carbon nano-fibers produced, somehow (this must be the tricky part) so as to only move one way under the influence of Brownian motion against them would be the blades of our nanowindmill. These nanofibers will, in turn, move a nano electromagnetic generator, producing a puny electrical charge. This miniscule electrical charge, times 'billions of nanowindmills, will add up to usable energy. Maybe a tub of water, or a swimming-pool sized container of liquid will, in this way, be enough to power

F.N.1 These molecules must also be jostled due to Brownian motion, which must be one reason that predicting the whether is so ~~a~~ difficult to do with accuracy.

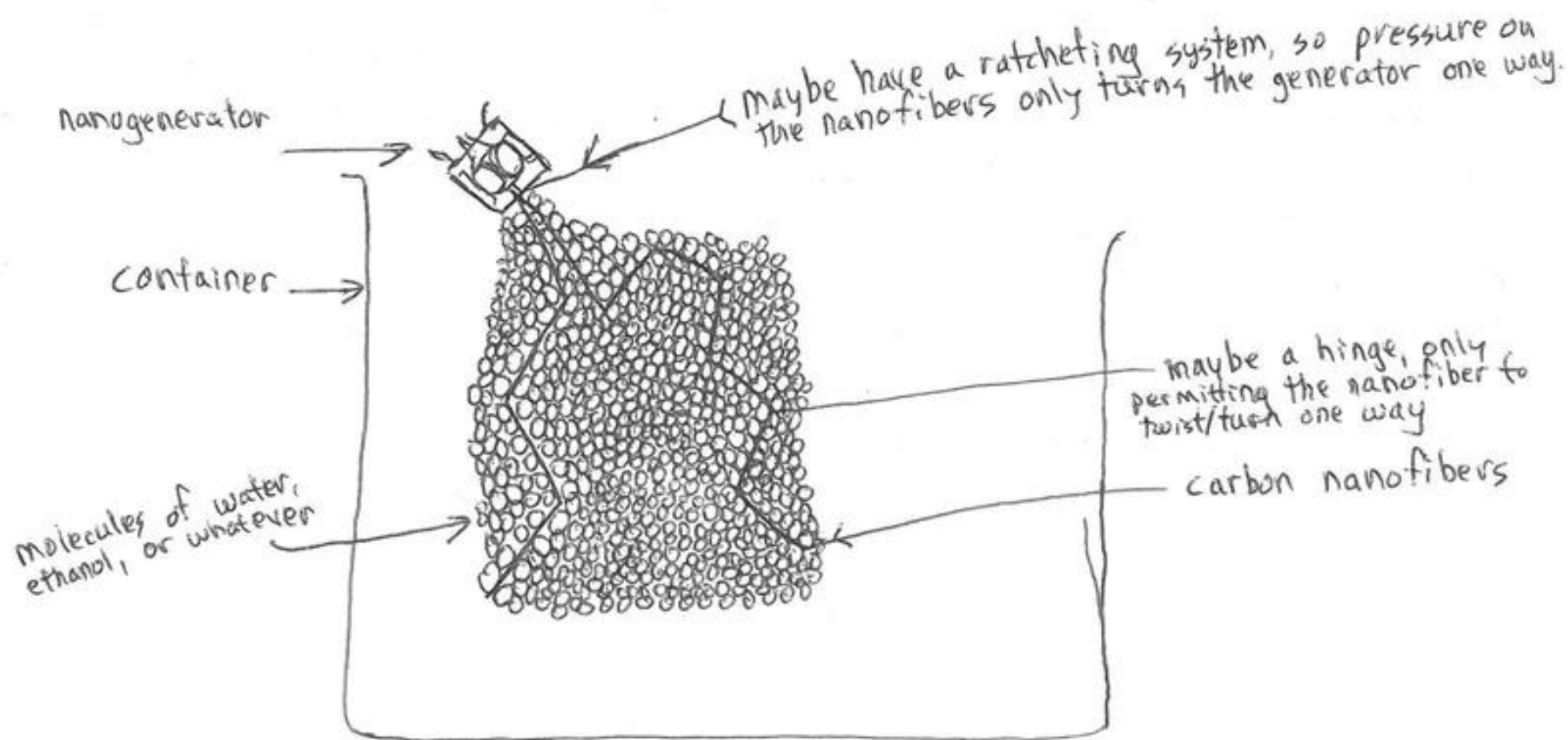
a household's needs, or more, or less

Possible obstacles to this source of power being implemented include:

- technology being insufficient to produce the nanomachines needed,
- extravagant cost of producing the nanomachines in adequate numbers to be of ~~any~~ value;
- lack of durability of the nanotechnology - if it breaks down a lot.

The ultimate question will be can this concept produce more energy than must be used to create & maintain it?

Hope you readers find this idea worth consider. I have no clup whether or not it's already been looked into, but I suspect it has.



Consider how some bacteria & one-celled organisms use a flagellum to propel themselves. This is a mechanical version in reverse - it absorbs the movement of the medium, turning it into energy.

Please let me know if anyone else is onto this or if it has already been considered & found impractical.

Sincerely,
Nate.

Type: essay

Topics: Energy, Physics, Technology,
Nanotech, Inventions