

Re: Entropy/Free energy changes?

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Source: <http://sci.tech-archive.net/Archive/sci.chem/2007-02/msg00038.html>

- *From:* "The_Man" <me_so_horneeeee@xxxxxxxxxx>
 - *Date:* 3 Feb 2007 03:46:19 -0800
-

On Feb 2, 11:08 pm, "kumar" <lordshiva5...@xxxxxxxxxxxxxxxx> wrote:

On Feb 3, 6:12 am, "The_Man" <me_so_hornee...@xxxxxxxxxx> wrote:

On Feb 1, 7:01 pm, Fred Kasner <fkas...@xxxxxxxxxxxxxxxx> wrote:

kumar wrote:

On Feb 1, 5:45 pm, "John M."
<john_howard_mor...@xxxxxxxxxxxxxxxx>
wrote:

On 1 Feb, 11:51, "kumar"
<lordshiva5...@xxxxxxxxxxxxxxxx>
wrote:

John M.
wrote:

On
31
Jan,
17:56,
"kumar"
<lordshiva5...@xxxxxxxxxxxxxxxx>
wrote:

On
Jan
31,

Re: Entropy/Free energy changes?

8:40

pm,

"John

M."

<john_howard_mor...@xxxxxxxxxxxxxx>

wrote:

<snip of old stuff!>

Entropy
increase
seems
inevitable
in
the
macro-mechanical
universe
simply
because
of
the
Law
of
Large
Numbers.
It's
a
probability
thing,
and
a
consequence
of
quantum
states
in
e-n
electrons.
The
role
of
relativity
in
this,
as
in
the
mass-energy
equivalence,

Re: Entropy/Free energy changes?

I
don't
have
the
knowledge
to
comment
upon
it.

Simply,
whether
radiated
heat from
our body
will change
entropy of
universe
minutely or
not?

That seems to be the general
consensus, but cosmologists
can't even
define comprehensible
limits to the universe yet

Can you tell
me the fate
of
emitted/reflected
light from
an object?

Emission of e-m radiation
is normally due to energy
level shifts in e-
n electrons. I would guess
that the resulting
redistribution of
internal energy within the
emitter would signal an
entropy increase.
But I'm only guessing. The
answer belongs to quantum
mechanics, of
which I know very little..

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In view of thermodynamic equilibrium, it looks quite logical. This may suggest any of our activity can radiate or absorb heat so may effect entropy of universe. As such whole universe may be inter-linked by it.

Entropy is a property that is statistically based. It can be defined in thermodynamics or in statistical mechanics. In stat mech it is defined by the equation $S = -k \ln(\omega)$ where ω is a count of the number of

I think you mean $S = +k \ln(\omega)$. Since ω is great than one, its natural log is positive, as is the Boltzmann constant k . The entropy can NEVER be negative; in fact, it can't even be zero, except at absolute zero for a perfect crystalline material (3rd Law), and, of course, absolute zero is unreachable.

Note that this definition of entropy is only true for the microcanonical ensemble.

Yes entropy can not be negative. But I think some activities in atoms/molecules still continue even at absolute zero. I can't say that contribute to temp. and entropy or not.

Molecular vibrations continue at absolute zero, but they are non-entropic.

Still, entropy can't be negative but it can be decreased or increased depending on temperature.

Are our all activities and all things and beings connected to this free energy, entropy, heat, temp. and motions by their specific activities and makeups to overall free energy and entropy...alike local effects related to systemic effect in our body?

Yes.

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Btw, whether free energy, entropy and thermodynamics are dependant on proportions of disorganized and organized (stored) energy ?

Thinking in terms of "organized" or "disorganized" is not very helpful. Better to think of entropy as q/T , where q is the heat transferred, and T is the temperature at which it is transferred. If no heat is transferred ($q=0$), the process is adiabatic, and the entropy doesn't change.

states permitted for the system. So if the number of states permitted increases in a change then the entropy must also increase.

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