

International Conference on Engineering and Meta-Engineering: ICEME 2010

collocated with
The 16th International Conference on Information Systems Analysis and Synthesis: ISAS 2010 and
The 8th International Conference on Computing, Communications and Control Technologies: CCCT
2010

April 6th - 9th, 2010 – Orlando, Florida, USA

The relativistic character of mercury is important factor in deteriorating the living system

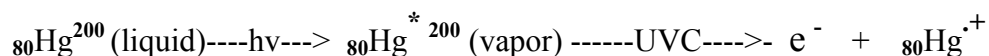
(The effect of sub-atomic character of mercury in the living system)

Sutiman B. Sumitro¹ and Gretha Zahar²

1. Department of Molecular Biology, Brawijaya University,
2. Institute of Free radicals Studies, Malang, Indonesia

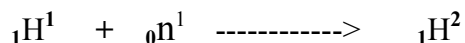
A relativistic effect is any phenomenon which can be traced back to the fact that the velocity of light is universal, finite constant in all frames of reference, even those moving with some unchanging velocity with respect to each other. Thus, a relativistic effect relies on a comparison with the fictitious world where the velocity of light is infinite and a non relativistic description applies.

Mercury, with $6s^2 5d^{10}$ are particular important for the very fast s^2 electron, resulted relativistic effect of mercurio ion radical $\text{Hg}^{\cdot+*}$, which are not stable and still in excited state. Since the monomer $\text{Hg}^{\cdot+*}$ radical ion is not stable, the unusual +1 oxidation state entirely due to the stability of dimer.



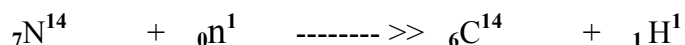
Mercurio ion radical ${}_{80}\text{Hg}^{\cdot+}$ stabilized when radical-radical self associated (biradical), spin interaction intermolecular, while the consequence of coulomb force repulsion were surrounding by $e^- + \text{water} \xrightarrow{-} e^-_{aq}$

The unstable nuclear ${}_{80}\text{Hg}^{200}$ with 6s2 electrons absorbed UVC sunray (as sensitizer), producing the excited mercurio ${}_{80}\text{Hg}^{\cdot+*}$ (gas \cdot^*), becoming an unstable nuclear proton is transformed spontaneously and ejected neutron and positron.

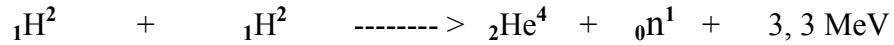


The high energy of neutron plays an important role and proceeds into further reaction as follow:

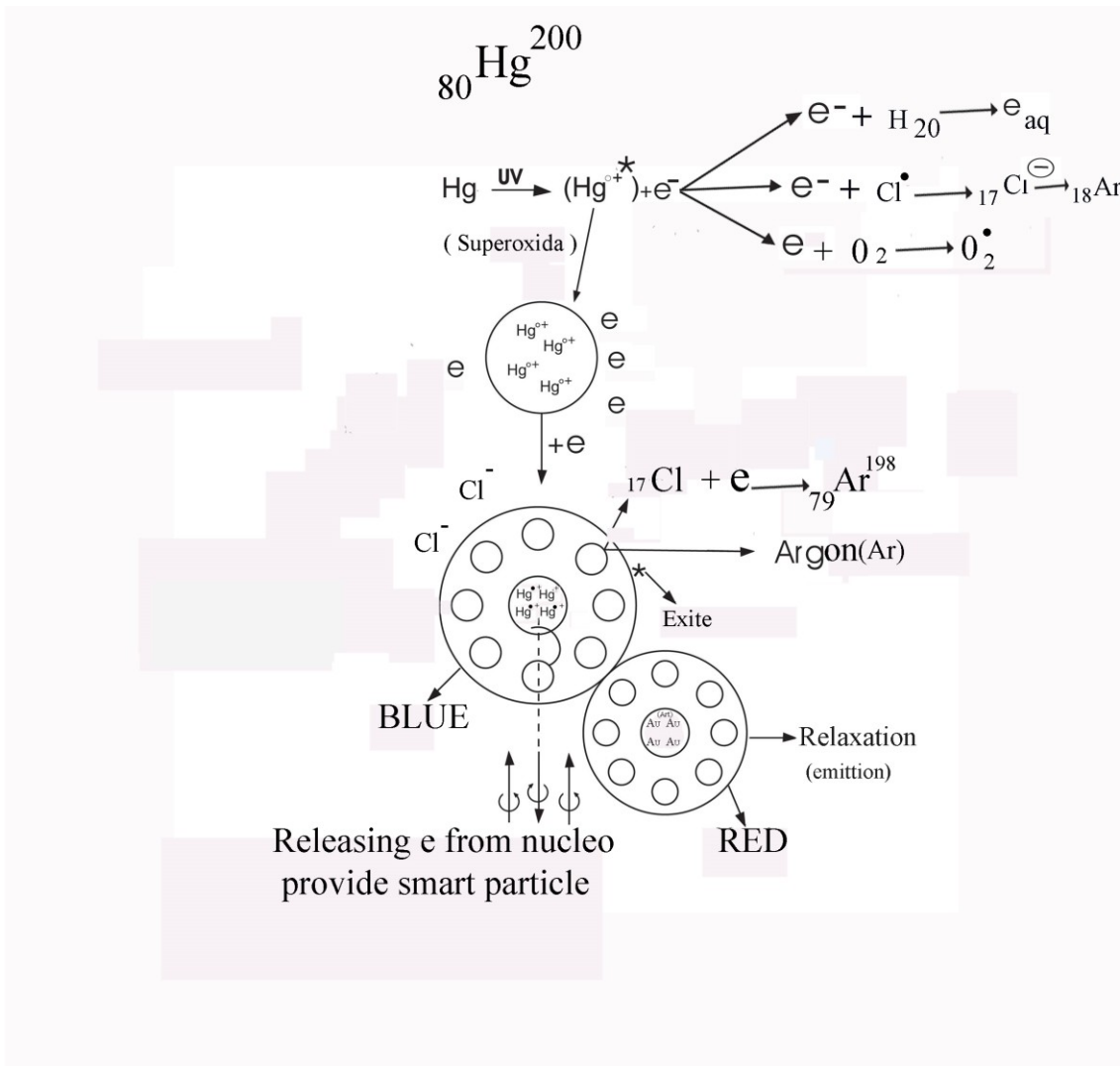
- The neutron can change the ordinary nitrogen nuclei into radioactive carbon



- These hydrogen atoms will fuse into helium producing high energy



The figure below depicting the mechanisms of completion of mercury biradical to form high energetic “bubbles”. The biradicals develop energy through electron transitional which may interfere the biological system through their magnetic force to some exciting molecules. This may lead to some changes of biological order into out of normal situation.



Conclusion

Mercury/amalgamate become very reactive and toxic when absorbed UVC light/energy UVC. The biological molecular process might be easily impacted with very tiny number of mercury radicals in living organism.