A Review of Elemental Mass Origin and Fundamental Forces Unification

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Contents

1.Motivation and Objective

- **The current study explored the implementation of STANADARD MODEL theoretically on the atomic elements of periodic table.**
- **Theoretically, the pure elemental mass was probed first time for elemental mass origin and forces unification concepts.**
- **The deep elemental applications analysis.**

2.Introduction of Research and Standard Model

- **Background discussion.**
- **The standard model describes the modern atomic structure, unification of fundamental forces and materials mass origin.**
- **The standard model comprised of copious elementary particles. The elementary particles classified into fundamental fermions and bosons. The fundamental fermions exist in quarks and leptons rudimentary particle forms.**

3.Fermions Elementary Particles

I. **Fermions are very small and light fundamental particles.**

- **The fermions are made up of leptons (electrons, muons etc.), baryons (protons, neutrons etc.) and odd mass nuclei like tritium and uranium-233. Moreover, fermions have also anti-particles with opposite spin.**

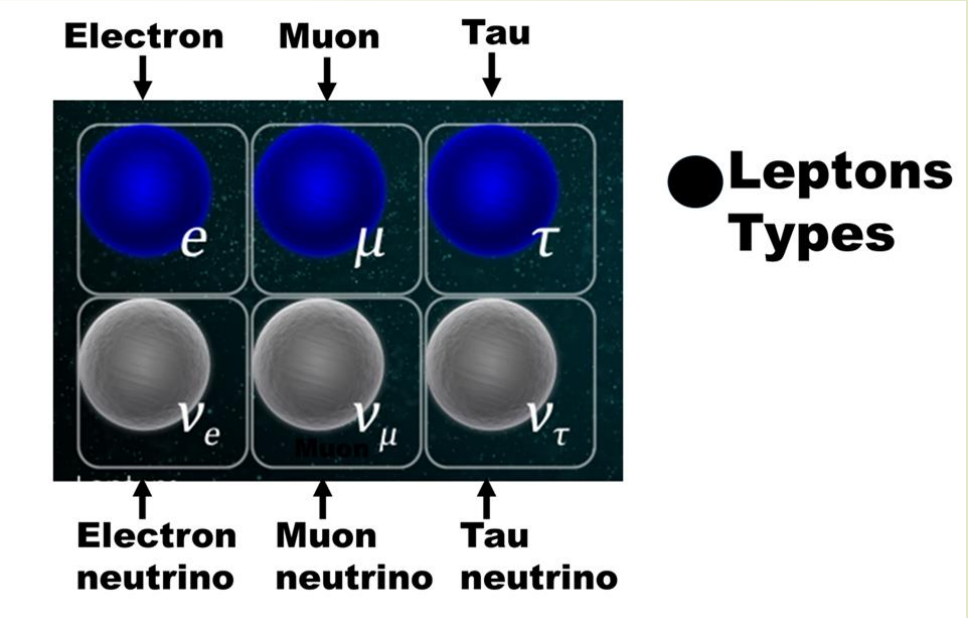

Figure 1. Leptons elementary particles

3.Fermions Elementary Particles

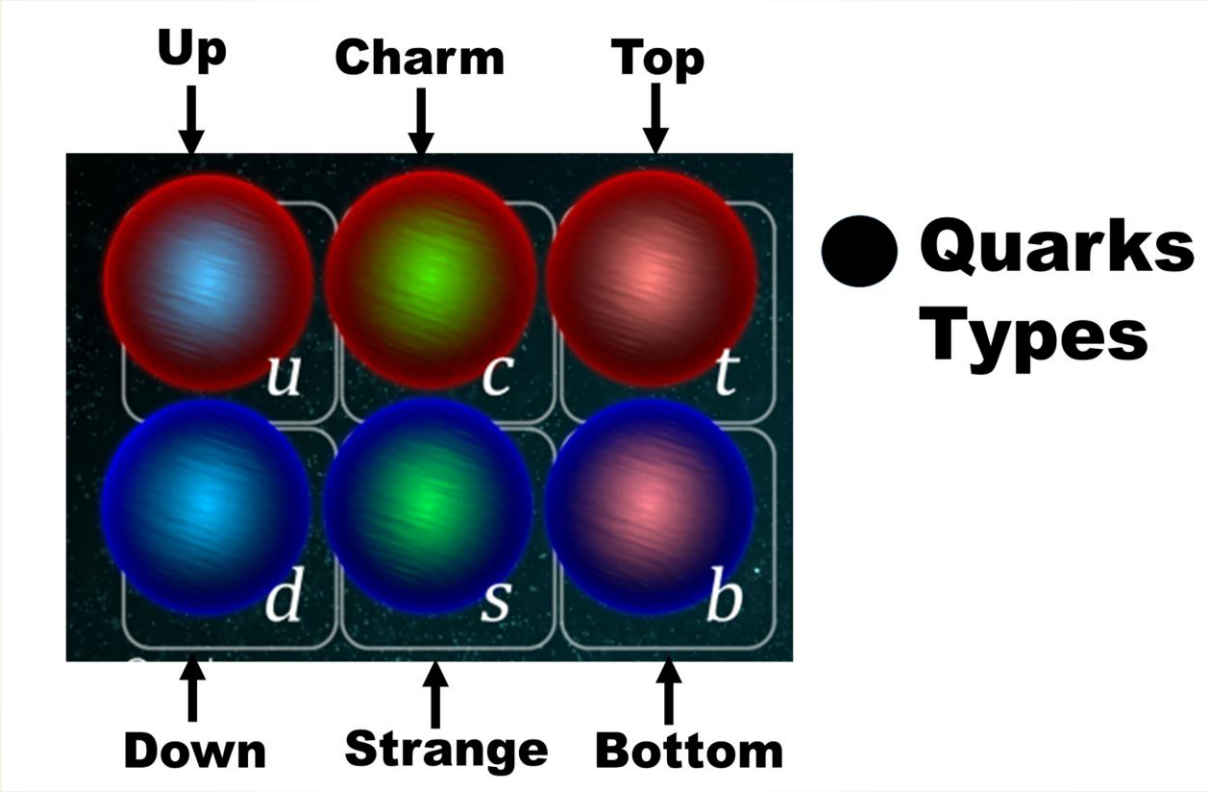

Figure 2. Quarks elementary particles

4. Bosons Force Carriers Elementary Particles

- **The bosons are force carrier fundamental particles. These are gluons, photons, bosons and higgs bosons. The scalar (higgs bosons) and vectors bosons (gluons and photons) mediate with gravitational, electromagnetic, weak, and strong forces of interactions. The mediation occurs at macroscopic (electromagnetism) and microscopic levels.**

5.Graphical Representation of Concepts

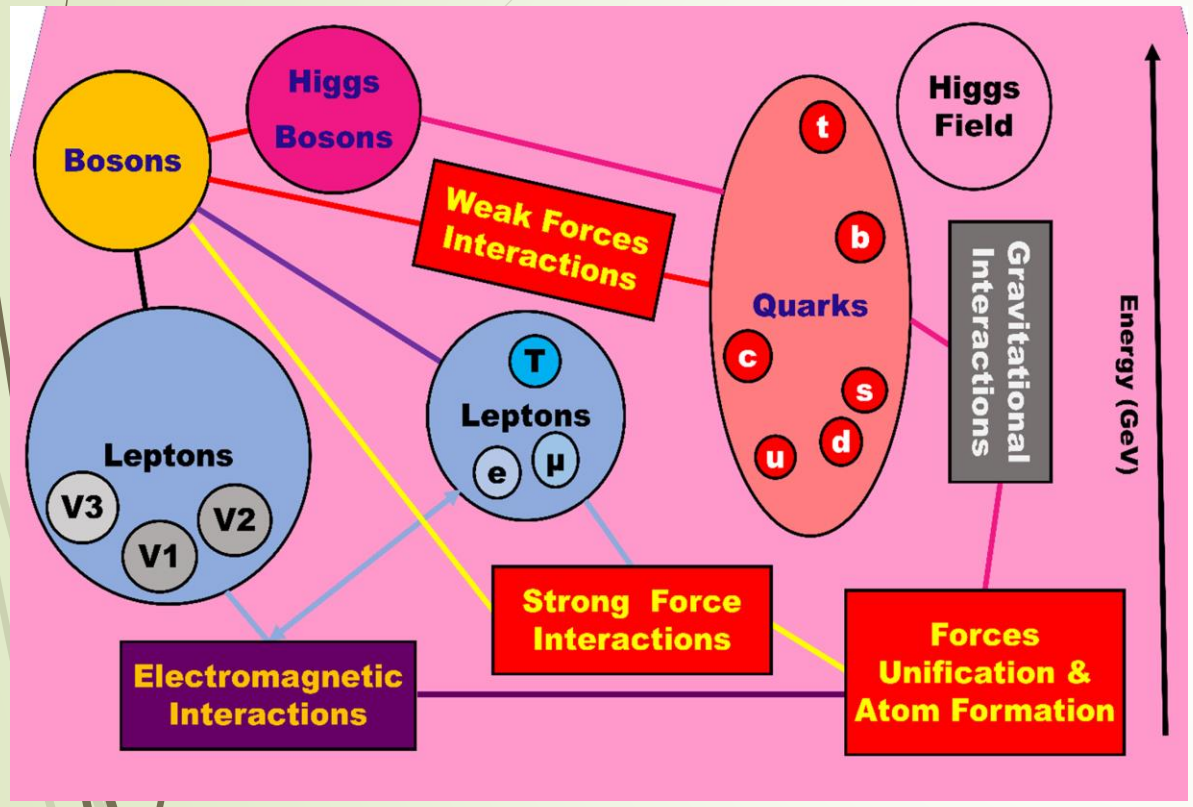

Figure 3 : Leptons, quarks and bosons elementary particles energy distributions.

At higher excitation energies, the massless particles, when moving with speed of light, interacts (mediates) and bouncing to and FRO or forward and backword periodically. The mediation slow down the motion of particles. After specific spam of time the particles look static and hence gain mass.

5.Graphical Representation of Concepts

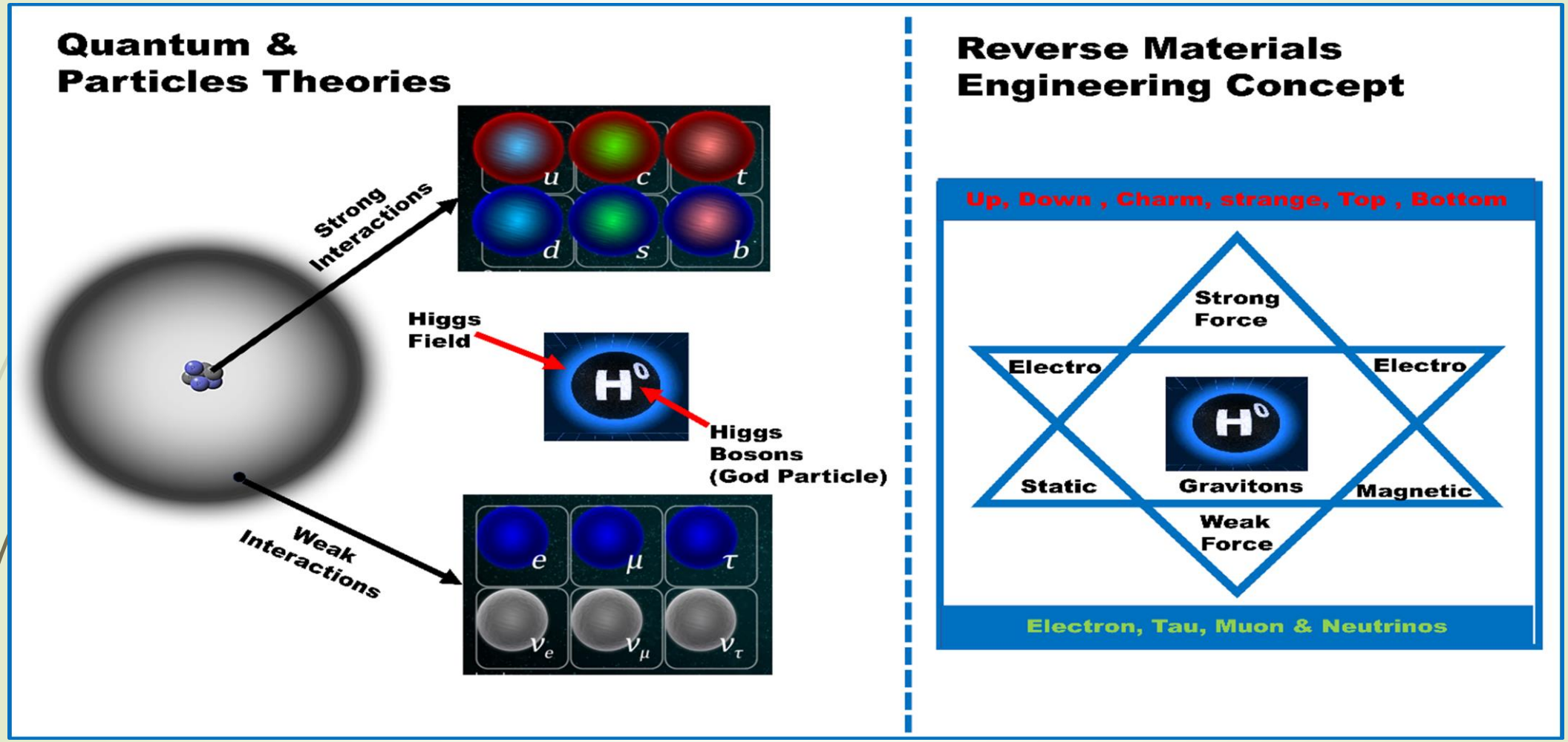

Figure 4. Elemental mass origin and fundamental force unification concepts

7.Conclusions

- **The atomic and modern quantum theories are reviewed first time for elemental mass origin and forces unification.**

- **At higher energies the elemental mass transform into higgs bosons, leptons, quarks and photons. According to standard model, in reverse engineering concept, at lower energies these particles mediate (photons, gluons and gauge bosons mediations) and interact (gravitational, electromagnetic, weak, and strong interactions) for atom formation.**

- **Atoms are building blocks of elements of periodic table. In future, the review article can be used for elemental mass origin and forces unification concept implementation in medical, power, semiconductor, nuclear and defense industries.**

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