

Novel Quantum Gravity Interpretation of Chemical Equilibrium, Free Energy, Dark Energy and Dark Matter of the Universe

C Bhattacharya

Austin Paints & Chemicals Pvt Ltd, 3 Ambika Mukherjee Road, Belghoria, Kolkata, 700 056, India

*Corresponding author

C Bhattacharya, Austin Paints & Chemicals Pvt Ltd, 3 Ambika Mukherjee Road, Belghoria, Kolkata, 700 056, India

Submitted: 04 July 2020; Accepted: 10 July 2020; Published: 11 July 2020

Abstract

The conventional concepts of the free energies of the matters of the universe, have been revisited in regard to free volumes of matters and a new concept of the free energy variable has been put forward based on the concept of quantum gravity. The phenomena's as for example, equilibrium constants of the chemical reactions, their dimensionalities, and the spontaneity criteria of chemical reactions have been revisited in light of the dimensions and geometrical shapes of activation volume /energy graviton, entropy graviton, rate constant graviton and order of the chemical reactions as defined in the recently discovered theory of quantum gravity (QG theory).

The origin of evolution of dark energy and dark matters of the universe have been clearly elaborated through the newer concepts of free energy and the concept of QG theory respectively. The existence of the several equilibrium in nature of the dark masses with the phenomena's of EM wave, the plasma state, cosmic rays, photo-electricity, antigravity, black hole,.. etc. have been clearly revealed.

Keywords: Chemical Equilibrium, Free Energy, Dark Energy, Dark Matter, Equilibrium Constant

Introduction

The Gibb's free energy (G) is a physical variable in thermodynamics, and is an index which expresses the ability of a thermodynamic system to do work like the way entropy being another thermodynamic index to expresses the randomness. If the free energy value is higher (in the negative sense), the system can do more work and if the value is less in the similar sense, the work done would be lesser. The free energy in classical thermodynamics is being linked to the pressure (P) and volume (V) of a system by a very familiar relation, ($G = -PV$). However although it is often told that the term 'free' is originated from the concept of the amount of energy which is 'free' for doing work, however, in this article, it has been established by thermodynamic logic, that the terminology 'free' is in fact related to the 'free volume' of the system and that is being the reason, it is called 'free'.

The classical chemical thermodynamics define the equilibrium constant (K) of a chemical reaction as a ratio of 'rate constant of forward reaction' (k_1) to that of 'rate constant of reverse or backward reaction' (k_2). While this stands quite justified but the spontaneity of chemical reaction as is usually being judged by the ΔG

value, is very much ambiguous. It has been proved in this article that while in case of physical mixing or physical interactions of two or more different substances, the concept of $\Delta G = -ve$, remains to be a valid proposition but the same is not valid for the chemical reactions since the chemical reactions are characterized by chemical bond breakage, new chemical bond formation, orientation and re-orientation of the molecules, the change in molecular sizes and shapes, the intermolecular attractive and repulsive forces. The volume and free volumes of the reactants and the products are quite independent to each other in contrast to the physical mixing processes, where the volume/free volume of the mixture is a function of the volume/free volumes of the components of the mixture.

For the above said very logical reasons thereof, the change in 'free- energy' of the chemical reactions (reactants to products or products to reactants) cannot be computed with the mathematical equation, ($G = -PV$).

Classical chemical thermodynamics also is unable to express the dimensionalities and the geometrical shapes of the equilibrium constants of the chemical reactions and those have been evaluated in this article through the concept of the theory of quantum gravity [1, 3]. The index of the spontaneity of a chemical reaction, the connections between the 'order' of a forward and a reverse re-

action in regard to spontaneity of the chemical reactions have been demonstrated.

This article defines 'dark energy', 'dark matter' or 'dark masses' and also expresses the equilibrium relationship between 'dark matter' and the several cosmological phenomena like 'black hole', 'plasma state', 'cosmic rays', 'antigravity' and different degrees of 'electromagnetic waves or EM-waves' by the way of bridging concepts of molecular chemical thermodynamics and the theory of quantum gravity.

Free Energy

Let us consider, a real gas is existing, as for example, in a spherical shape (with a very thin imaginary boundary wall all around, having no friction and resistance) as shown in Figure 1 under the normal atmospheric pressure, $P = 1$, with volume V_1 and temperature T_1 (state 1).

The gas is heated under the same constant pressure, to a volume V_2

and temperature T_2 (state 2) such that $T_2 > T_1$ and $V_2 > V_1$.

As per QG theory [1], if the radiuses of the spheres, as shown in Figure 1, are r and R respectively for state 1 and state 2 then, the said values would represent the entropies of state 1 and state 2 respectively. If the free volumes of state 1 and state 2 are FV_1 and FV_2 respectively and since $R > r$, $FV_2 > FV_1$. As the system passes from state 1 to state 2 the randomness or kinetic movements of the molecules become more due to the availability of more inter-molecular volume or spaces. The higher magnitude kinetic movements in state 2, would require more energy than that of the energy which was required for the random kinetic movements of the molecules in state 1. So for the state 2 to exist over volume V_2 , the amount of heat to be supplied should be equal to the sum of the i) the energy for higher free volume and ii) the energy for higher level kinetic movements. As a matter of fact, the total of the heat supplied in state 1, partly fills the free volumes or free space and the rest goes to the randomness or entropy part.

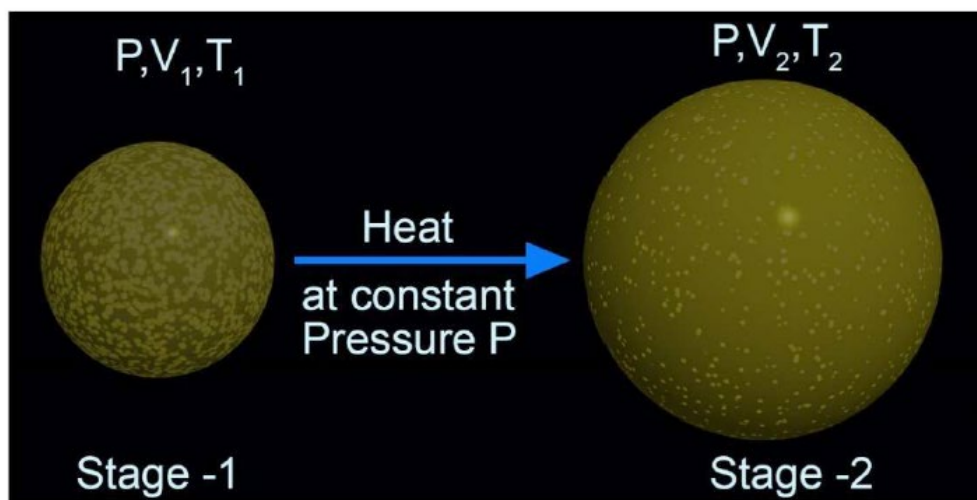


Figure 1: Expansion of a real Gas in Spherical Shape (with an Imaginary thin and Frictionless Boundary under Atmospheric Constant Pressure, P) upon heating from state 1 to state 2. The Volumes and Temperatures of State 1 and State 2 are V_1, T_1 and V_2, T_2 Respectively. ($V_2 > V_1$ and $T_2 > T_1$)

If a heated stream of gas (as that of in state 2 in Figure 1), for example, strikes the blades of an electricity generating 'gas turbine', the gas will transfer energies to the said blades and will get colder and the intermolecular distance will decrease or the 'free volume' will decrease. So the gas would be doing some mechanical work (at the cost or expense of its free volume) and the change in intermolecular spacing or the change in 'free volume' of the gas is an indirect measure of the mechanical work done by the system.

So 'free energy' is basically 'free volume' related physical variable of the universe. In QG theory, volume (V) and energy (E) are the same dimensionally and are related to each other as $E=3V$ (under the condition of equilibrium, pressure, $P=1$), or the energy density of space is constant. So it can be concluded:

Free energy, G (function of free volume or the energy existing in the free volume spaces of the system) = (Total Energy of the system) - (Energy of the system utilized for randomness).

A system sacrifices some of its free volume, when the system does some work. So free volume of a system is a measure of the system's potential or capacity to do work. Since the system loses free volume, so the free energy is being conventionally expressed with negative sign.

Pressure, P , (being a dimensionless physical variable as per QG theory) remaining constant, if the volume of a system is higher, its free volume would also be higher and if the volume is lesser,

the free volume would also be lesser. It is possible to measure the volume of a system experimentally but measuring the free volume by experiments is not very straight forward. For this reason, the volume of the system itself, has been made the index of the system's free volume and in pressure-volume or mechanical work related thermodynamics and the free energy of a system is being expressed as a multiple of the volume as (pressure, P, being the multiplier):

$$G = - (PV)$$

since the free volume is also being connected to the pressure of the system. Under the condition of equilibrium with the surroundings, $P = 1$, $G = -V$.

The energy of the system utilized for randomness = Force x Distance = Temperature x Entropy = TS

(As per QG theory, 'Temperature' (T) is a 'Push Forward Force' and 'Distance' is 'Entropy' (S)).

If the total energy of the system is being expressed by 'H', then 'G' in the above said relation becomes,

$$G = H - TS$$

Under the condition of equilibrium and $P = 1$, the above said mathematical relation turns to

$$(-V) = H - TS$$

The following thermodynamic statements stand very much applicable for the state 1 and state 2 of Figure 1

- Volume of State 2 > Volume of state 1
- Free Volume of State 2 > Free volume of State 1
- Capacity of doing work of State 2 > Capacity of doing work of State 1
- Free Energy of State 2 is more negative than the Free Energy of State 1

Dark Energy

When a stream of heated gas strikes an object (like the example of gas turbine as given in the previous section) it makes the object (the blades) move. The blades rotate and an energy impact is generated on the surroundings. So the free energies or the free volumes of the system, in an indirect fashion, flow out to the surroundings and are being spread all over the surroundings.

The destiny of the 'free volume' of the baryonic matters [2, 4] of the universe is ultimately is to pass on to the universe and the space is being continuously filled or enriched with energy and all the ener-

gies do come from the matters of the universe. This energy is being called, the 'Dark Energy' of the universe.

All the work, we do in everyday life, like walking, running, swimming, driving car. etc. and all the irreversible processes occurring in nature,...etc. go on producing more and more 'Dark Energy' of the universe.

Criteria of Spontaneity of the Physical Processes and the Chemical Reactions

In thermodynamics/chemical thermodynamics, the criteria of spontaneity is 'under the conditions of constant temperature and pressure, the change in Gibbs Free Energy must be negative, for any physical process and the chemical changes too'. Now, it will be examined more critically in the light of the philosophy of 'free volume' concept as is being discussed in this article.

The examples of the physical processes are like, random mixing of two different liquids or the random mixing of two different gases at a certain temperature. Before such type of random mixing, the two liquids have their own 'free volumes'. After the random mixing is being made, the free volume changes to an intermediate value between the two. The molecules of one liquid has to be placed within the free volume space available among the molecules of the other liquid or the vice versa. So, as a whole, the change in free volume is negative. So for the physical processes occurring in nature under the conditions of constant temperature and pressure, the thermodynamic criteria of ΔG to be negative stands very much justified.

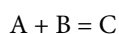
For the chemical reactions, for example, the volumes of the products can be same to that of the reactants or be lesser or higher. Whatever be the situation is, a chemical reaction is a chemical bond cleavage / chemical bond reformation, molecular orientation-reorientation process. The chemistry of the molecules of the reactants change while the products are formed. The individual sizes of the molecules on an average among the molecules of reactants and products do also change. The magnitude of the intermolecular attractive forces also do vary between the reactants and the products.

Free volume of any system is principally connected to the i) average sizes of the molecules, ii) the magnitude of intermolecular attractive forces. Since the above said factors might widely vary from reactants to products in chemical reactions, the concept or the philosophies of i) the volume of the system is the index of free volume ii) intermediary of free volumes upon mixing in the physical processes cannot however, be extrapolated for the chemical processes.

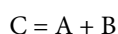
The thermodynamic criteria of spontaneity or non-spontaneity of chemical reactions needs to be made different than that of the cri-

teria stipulated for the physical processes. If the same concept is retained for the chemical reactions, one does reach to a stage of self-contradictory sorts of situations as exemplified below:

Let us take as an example of a following chemical reaction with reactants 'A' & 'B' forming a product 'C' is taking place spontaneously and the change in Gibbs free energy is negative (under the condition of constant temperature and pressure)



If this be true, then the change in free energy for the reverse reaction



has to be positive and the reverse reaction turns out to be a non-spontaneous one. But in a chemical reaction vessel, very often, the reverse reaction does also take place spontaneously and when the rates of forward and reverse reactions become equal, the chemical equilibrium is attained. This example very clearly establishes the fact that the criteria of spontaneity has to be different for chemical reactions.

Sometimes we face more ridiculous situations. For example, the free energy of formation of water at ambient temperature from hydrogen gas and oxygen gas is highly negative but the said reactants upon mixing do never react spontaneously to form water. Such phenomena is usually being defended by the chemical thermodynamics people that though the change in Gibbs Free Energy is negative but unless and until ,the 'activation energy' is being provided in form of electric spark , the chemical reaction could not take place to form water. The question is then, what is the true criteria of spontaneity of chemical reaction? Is this being the 'change in Gibbs Free Energy' or is it the 'Activation Energy'?

As a matter of fact, as long as one does not explore and understand, the true dimensionalities of the 'equilibrium constant' of the chemical reactions, the geometrical profile of the chemical reactions, the entire such things would remain at dark. In this article in the subsequent sections all these have been explored and discussed in detail.

Equilibrium Constant of Chemical Reactions and their Dimensionalities

The equilibrium constant (K) by the fundamental definition of Chemical Kinetics is,

$$K = (k_1/k_2)$$

since the rate constants [3] for the different order reactions [3] have

their own shape and dimensionalities, so equilibrium constant is a ratio of two geometrical shapes [3] as far as the concept of quantum gravity is concerned.

While the subject of 'Chemical Kinetics' is being silent to a large extent about the 'order' of the reverse reaction, in practice, it needs to be considered very much. Since the order of a reaction is linked to the rate constant or vice versa, the equilibrium constant of a chemical reaction is a function of the order of the reverse reaction too.

A very important point to note here, that for a favourable chemical reaction (the reaction for which product formation is favourable), the 'order' of the reverse reaction has to be either the same to same or lower than that of the 'order' of the forward reaction. The higher 'order' reactions take place slowly (because of the less passage available for reaction or the 'activation volume/energy' are higher) than the corresponding lower 'order' reactions.

If the order of a forward reaction is 1 (n=1), then the order of the reverse reaction should be greater than equal to 1. If the order of a reverse reaction is lower than that of the forward reaction, then the reverse reaction would be more random dimensionally and would take place at a faster rate and product formation will be disfavoured to a large extent.

If the order of a forward reaction is being 'n', then the reverse reaction can or would be either n, or (n+1) or (n+2) or (n+3) or (n+4) ... etc. In fact there does exist numerous possibilities theoretically. There are different permutations/combinations like, n with (n+2), n with (n+3), and n with (n+4).

For different combinations of orders, as stated above, there will exist separate, separate values of equilibrium constant, K. If the order of a reverse reaction tries to compete with the forward reaction and in case of n-n combination for example, then depending on the relative sizes of the two rate constant gravitons (their shapes would be the same, if the shape is a circle then both are circles, if the shape is a sphere then both are spheres...like this), the favourable direction of the reaction would be decided. If the shape of the rate constant for example, is a circle, and the areas are P & Q respectively of the forward reaction and the reverse reaction respectively, then, if (P/Q) is > 1, then product formation will be favoured and if (P/Q) < 1, then product formation would be disfavoured.

Table 1 shows below the dimension or geometrical shapes of the equilibrium constant depending upon the values of the order of the reactions arising out of the different permutations and combinations. Figure 2 shows the geometrical shapes of the equilibrium constants for the different permutation-combinations of Table 1.

Table 1: The Dimension and the Geometrical Shapes of the Equilibrium Constants, K of Chemical Reactions.

Order of Forward Reaction (n)	Order of Reverse Reaction	Dimension of Rate Constant of Forward Reaction	Dimension of Rate Constant of Reverse Reaction (k ₂)	Dimension of Equilibrium Constant (K)	Geometrical Shape/Dimension of Equilibrium Constant , K
0	0	r^4	r^4	0	Dimensionless, or co-existence of a circle and a 2 – dimensional saddle.
0	1	r^4	r^2	r^2	A circle
0	2	r^4	r^0	r^4	Hybrid of two numbers of circles or EMwave
0	3	r^4	r^{-2}	r^6	Hybrid of 2 numbers of sphere or 2nd degree energy.
0	4	r^4	r^{-4}	r^8	Hybrid of 4 numbers of circles or intense EM – wave.
1	1	r^2	r^2	0	Dimensionless or co-existence of a circle and a 2-dimensional saddle. A circle
1	2	r^2	r^0	r^2	A circle
1	3	r^2	r^{-2}	r^4	Hybrid of two numbers of circles or EMwave.
1	4	r^2	r^{-4}	r^6	Hybrid of 2 numbers of sphere or 2nd degree energy.
0	0	r^4	r^4	0	A 2-dimensional saddle.
1	0	r^2	r^4	r^2	A, 2-dimensional saddle.
2	3	r^0	r^{-2}	r^{-2}	A circle
2	4	r^0	r^{-4}	r^4	Hybrid of two numbers of circles.
3	4	r^{-2}	r^{-4}	r^2	A circle.

From the data given in Table 1 and the Figure 2, it is imperative that chemical reactions those are product formation wise favoured do always have resulting dimension of the equilibrium constants always in the form of 'Push Forward Gravitons' like circle, EM- wave, sphere, ...etc. For all the above said type of chemical reactions $K > 1$.

The situations for the reactions where the order of the forward and reverse reactions are the same have already been explained above.

For reactions where the 'order' of the reverse reaction is lower than the order of the forward reaction, the resulting dimension of K is of inverse dimensionality or squeezing type and $K < 1$. Such reactions can never move towards product formation.

Order of Forward Reaction(n)	Order of Reverse Reaction(n)	Geometrical Shape of Equilibrium Constant
0	1	
0	2	
0	3	
0	4	
1	1	
1	2	
1	3	
1	4	
0	0	
1	0	
2	3	
2	4	
3	4	

Figure 2: Geometrical Shapes of the Equilibrium Constants arising out of Different Permutation-Combination between the 'Order' value (n) of Forward Reactions and the Reverse Reactions

The 'Rule of Thumb' of the chemical reactions are as follows:

- The spontaneity of chemical reactions irrespective of whether it is forward chemical reaction or the reverse chemical reaction, at ambient temperature, principally is directly related to the activation energy / volume of the said reaction.
- Very low to medium activation energy reactions can be conducted at ease at sub ambient to ambient to little super ambient temperature.
- The chemical reactions for those the activation energies are very high, have to be driven by supplying very large amount of energy and those are non-spontaneous ones.
- A very specific example in this context is the formation of water by applying electric spark. Electric spark is a 'Plasma State' [1] creator and in the QG theory it has been shown that a plasma state is 3rd degree volume (energy). In fact this plasma state is the activation volume or energy for the water formation chemical reaction. By giving heat, one can never be able to reach to a 3rd degree volume or such high activation volume in a chemical reaction vessel or mixer.
- The favourable condition of a chemical reaction in regard to

product formation is, the equilibrium constant, K to be greater than 1 ($K > 1$). Higher the value of K, product formations are more and more favoured.

- By no means, the change in Gibbs free energy ΔG of a chemical reaction is related to the spontaneity of a chemical reaction irrespective of whether the reaction is considered to be a forward or reverse reaction.
- The change in free energy/free volume, ΔG (to be properly calculated), of a chemical reaction (it may be a forward reaction or the reverse reaction) can be utilized only to ascertain the exothermic city or the endotherm city of the reaction. If change in free energy (free volume) is negative, this substantiates the fact that the molecules on an average have come closer to each other and as a result, the energy within the free space or free volume, is passing out to the surroundings as heat and hence it is exothermic. If now in such reactions, the temperature is being raised, the system is not ready to accept heat since the system itself is releasing heat and as a result to accept the heat, the reaction equilibrium will divert to an opposite direction. If the product side is lower in free volume than the

actants, then it will go towards reactants and if the reactant is lower in free volume, then it will go the products.

- If change in free energy (free volume) is positive, this substantiates the fact that the molecules on an average have gone further apart from each other and as a result, the energy from surroundings, would be entering as heat (since the compartment of the heat is the free space or free volume and as per QG theory, the space is being continuously filled with energy and the energy density of space is constant) and hence it is endothermic. If now in such reactions, the temperature is being raised, it is very much ready to accept heat since the system itself is absorbing heat and the state would be favourable. If the product side is higher in free volume than the reactants, then the reaction equilibrium will go towards products and if the reactant is higher in free volume, then it will go the reactants.

Formation of Dark Matter from the Dark Energies of the Universe

The 'Dark Energy' is the energy as has already been defined in this article, is the energy which is flowing out to the surroundings to the universe from the matters of the universe. The definition of 'Dark Matter' will be provided first and it will be shown that how the dark matters are originated from the dark energies of the universe.

Dark matter are masses of very much of squeezed form of higher inverse dimensionalities. As one passes from 1st degree to 2nd degree to 3rd degree to 4th degree masses and so on, the volumes of the masses become very small. So although the said masses are

contributing to the total masses of the universe but are not detectable. Since the masses are of very high squeezed dimension such that it goes below the precision limits to detect a sizeable entity. These masses of the universe are called 'Dark Matter'. As a matter of fact when we talk about an atom [1] of the baryonic matters of the universe, these are the hybrids of either i) mass, energy, and force or temperature or ii) energy, entropy and time [1]. So the nomenclature 'Dark Matter' needs to be replaced by the new nomenclature 'Dark Mass' as far as the physics of formation, the mathematics and their geometries are concerned.

Now as the dark energy (which is being flown out to the surroundings or the universe), start interacting or hybridizing with the numerous 'pull back gravitons' [1]. The dark energy which is in the form of 'push forward gravitons' are attracted to the entities of the universe of inverse dimensionalities to form newer entities and newer types of equilibrium are being established.

The Table 2 shows, how the several hybridized gravitons are formed from the dark energies of the universe. The dark masses are masses of higher degrees. If the normal mass is considered to be 1st degree masses, the dark masses are pretty higher degree masses like 3rd, 4th, 5th and 6th degree masses. In figure 3, 4 and 5, the mechanism of evolution of the equilibrium of Dark Matters with the several other cosmic entities like entropy, force, space expansion, photo-electric phenomena, EM-wave, Black Holes, Plasma states are being presented schematically.

Table 2: Results of Hybridization of the different 'pull back gravitons' with the Dark Energies of the Universe.

	Type of ' Pull Back Graviton' and their dimension	Dimensional presentation of the resulting Hybridized Gravitons	Name of the formed Graviton upon hybridization
1	'Singularity Graviton' ($1/r^{10}$)	$(1/r^{10}) \times (r^3) = (1/r^7)$	Nuclear Fusion
2	'Black Hole Graviton' ($1/r^9$)	$(1/r^9) \times (r^3) = (1/r^6)$	Permeability
3	'Gravitational Collapse Graviton' ($1/r^8$)	$(1/r^8) \times (r^3) = (1/r^5)$	Space Inversion
4	'Nuclear Fusion Graviton' ($1/r^7$)	$(1/r^7) \times (r^3) = (1/r^4)$	Antimagnetic Field
5	'Permeability Graviton' ($1/r^6$)	$(1/r^6) \times (r^3) = (1/r^3)$	1st Degree Mass
6	'Space Inversion Graviton' ($1/r^5$)	$(1/r^5) \times (r^3) = (1/r^2)$	Time
7	'Anti Magnetic Field Graviton' ($1/r^4$)	$(1/r^4) \times (r^3) = (1/r)$	Order
8	'Mass Graviton' ($1/r^3$)	$(1/r^3) \times (r^3) = 1 = r^0$	-
9	'Time Graviton' ($1/r^2$)	$(1/r^2) \times (r^3) = (r)$	Entropy

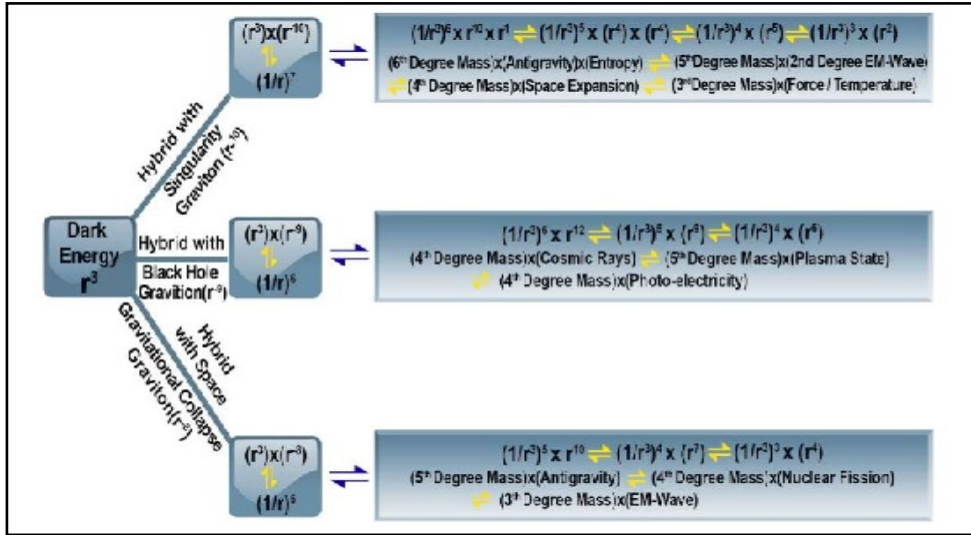


Figure 3: Schematic Representation of the Hybridization of the Dark Energy with Singularity Graviton, Black Hole Graviton and Gravitational Collapse Gravitons Respectively and the Evolution of Different Equilibrium Phenomena in the Universe

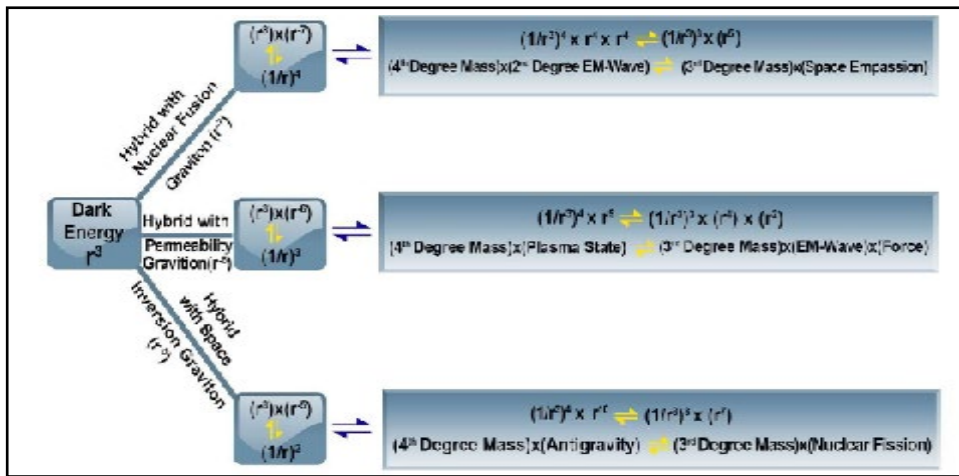


Figure 4: Schematic Representation of the Hybridization of the Dark Energy with Nuclear Fusion Graviton, Permeability Graviton and Space Inversion Gravitations Respectively and the Evolution of Different Equilibrium Phenomena in the Universe

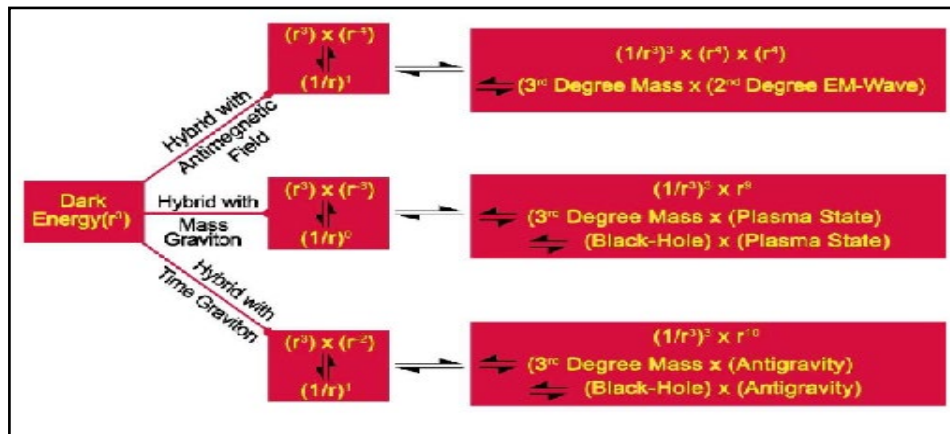


Figure 5: Schematic Representation of the Hybridization of the Dark Energy with Anti-Magnetic Field Graviton and Time Gravitations Respectively and the Evolution of Different Equilibrium Phenomena in the Universe

It is often told that due to the thrust of the 'Dark Energy', the universe is expanding and that stands very logical. In the maiden article of quantum gravity [1], it has been established by the universal 'Graviton Cycle' diagram that from the consecutive transformations of the 'Singularity Graviton', how the entropies are being generated and that leads to the expansion of the universe.

While the transformation of singularity graviton is a tangible phenomenon, the similar type 'Graviton cycle' might do also emerge from dark energy and this is explained below.

If it is considered that the dark energies solely swallows the 'Sin-

gularity Gravitons' (as that shown in Table 2, row no. 1) then the nuclear fusion graviton which is formed from such hybridization, can also transform step by step to the less squeezing type gravitons upon emitting entropy gravitons and in the thrust of the entropy, the universe does go on expanding.

The exclusive transformation of the 'Singularity gravitons' step by step or the alike transformation of the nuclear fusion graviton (emerged out of the dark energy) as said above, in fact, both operate parallel generating huge amount entropies and the universe expands. The 'DARK ENERGY- SINGULATUTY GRAVITON' universal cycle is shown in Figure 6, below:

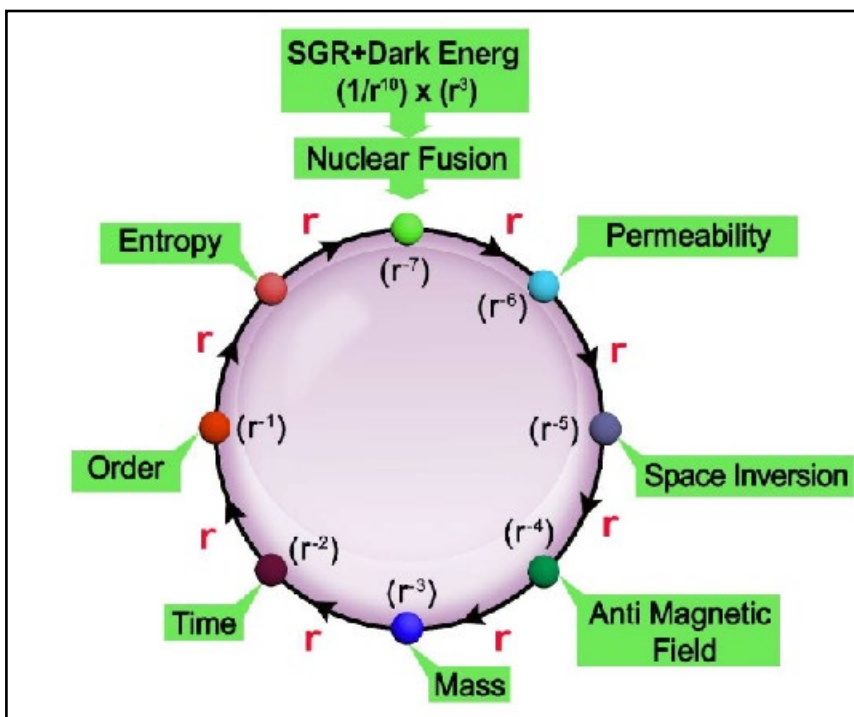


Figure 6: Universe Singularity (SGR×Dark Energy) Gravitation Cycle of the Universe Leading to the Expansion of the Universe

Conclusion

In this article, the first time in 'Science', the dimension or geometrical definition of 'free energy', the equilibrium constant of the chemical reactions are being given. The true index of spontaneity of a chemical reaction has been shown to be the 'Activation Energy' only. The spontaneity of chemical reactions as are usually being mapped by the change in Gibbs free energy (ΔG) value, is shown to be an inappropriate approach.

The origin how the 'Dark Matter' or Dark masses of the universe are created from 'Dark Energy' has been demonstrated. The several equilibrium phenomena among dark energy, dark matter, EM-wave, photo-electricity, plasma state, force, antigravity, Black Holes...etc...and so on have been clearly described.

This article opens up a new horizon in Chemistry and Physics as well and opens up further research activities to enrich the knowl-

edge bank of the entire world science.

After this article is being published, the very 'high height wall' which does persist at present, in the global scientific community, among the 'physicists' and the 'chemists' would be smashed forever, like the 'Wall of Berlin'. It would be much adventurous to watch, that to explain the cosmic mysteries, the theory of quantum gravity [1] uses the concept of 'order of chemical reactions' and on the contrary, the chemical kinetics/chemical equilibrium get its full proof shape only when the concept of dimensionalities of time, mass, EM-wave ...etc of the theory of quantum gravity are being used in chemical kinetics [3].

In the universe only two branches of Science would exist and those are "PHYSICAL SCIENCE" and "BIO SCIENCE". The mission would be 'Let all the people of the world scientific community be educated and expertise in both the said two streams together si-

multaneously and to learn and understand the theory of quantum gravity [1] as a principal theory of science.

While it will take some quite time to reach the said mission but it is being felt strongly that, we need to start the basic preparatory work like campaigning to the global medias, televisions, and to start writing newer text books and popular articles to pull the world citizens towards a new horizon altogether [4].

Acknowledgement

The author is grateful to Mr Gopal Manna, IACS, Jadavpur, Kolkata, India for drawing the figures of the article and expresses his gratitude to Mr Pratap Kumar Biswal, MD, BMEL, India for his high level encouragement and support.

References

1. Bhattacharya C (2020) Cosmology and the Unified Quantum Gravity Theory of the Universe, Advances in Theoretical and Computational Physics.
2. Nakano Tadao, Nishijima Kazuhiko (1953) Charge Independence for V-particles, (November 1953), Progress of Theoretical Physics 10: 581-582.
3. Bhattacharya C (2020) Novel Quantum Gravity Approach to Evaluate the Dimensionalities and The Geometrical Profiles of the Chemical Reactions (2020) International Journal of Scientific & Engineering Research vol 11 issue 4.
4. C Amsler et al. (2008) Pentaquarks.

Copyright: ©2020 C Bhattacharya., This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.