



**G.S-7**  
**THE VAIDIC PARTICLE PHYSICS -**  
**A REVOLUTIONARY vaidic CONCEPT OF**  
**PARTICLE PHYSICS**

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Introduction: -

Word Veda is produced with root *Vid jnyaane*, of Sanskrit Language. Meaning of this word is 'knowledge'. The Vedas contain vast and methodical knowledge of three eternal things. These three things, which are never destroyed, nor are they ever born, are matter, souls, and God. The Vedas strongly profess them as eternal. Containing such a gigantic knowledge of every existing thing, the Vedas should not be considered as only spiritual books having some recital hymns. They are not only filled with deep penetrating spiritual knowledge of God and Souls, but equally piercing and systematic knowledge of the material world, in a most scientific way.

Saankhya Darshana and Vaisheshhika Darshana are two of the six philosophical books, which are appendage of the Vedas. They, mostly, contain physics, especially particle physics and nuclear physics. The gravitational force was already described by these Darshana books centuries before the birth of Newton.

In word science, by dropping last letter 'e', pronunciation of the leftover word 'scienc' would be nothing else than Saankhya, but may be with slightly different dialect. It means that Sankhya Darshana was regarded as the book of science and word science was accepted as the synonym of Saankhya, centuries before Christ.

We do not accept Vedas as religious books in classical sense. They, no doubt, deliver spiritual knowledge too, but that is the most superior and scientific knowledge of the highest order. This knowledge has been tested and examined by the great spiritual people and Rishis, time to time and always found it to be the ultimate.

The Vedas have also established Prakriti, or matter, as the subject of study, which is the third eternal thing and provided the crucial and the ultimate knowledge on the subject. Therefore, the Vedas are the books of all knowledge and sciences, as other books on the exclusive subjects like physics, chemistry, etc.

The Vedas have described all the knowledge of God, Souls or Jeevaatmaa and Prakriti, or matter, in most scientific way, but in poetic form. This knowledge is conveyed fully giving examples at some places, while in the symbolic way at the other places. To understand the Vedas it is required to be acquainted with their language and the terminology. As it can be understood, the language and the terminology used in the Vedas cannot be the same as used in the modern time. Once you are familiar with the language and the vaidic grammar, the ocean of the great knowledge you find in its full pleasurable form, is open to you.

The beauty of Sanskrit language is in its evocative and meaningful vocabulary. As every word is created with some root, following some grammatical laws, one word may have many meanings. Therefore, while seeking the right meaning of a Vaidic Richa, it is required to select the right meaning of the



word. Some times the same Richa or the Mantra may provide the explanations related to the God, the Jeevaatmaa, or the Prakriti. It depends on the selection of right series of related meanings, and the procedure adopted in finding its explanations.

God and Jeevaatmaa are not the subject of particle physics, therefore they will not be discussed in details in the paper, but being Vaidic Particle Physics, if their appearance is essential in some context, they would be mentioned at right place.

#### What is Particle Physics:-

Particle physics, a branch of the modern physics, has traveled a long distance in the direction of finding its own foundation. If the knowledge of the universe were like a building then, the modern science starting from the roof parapet has traversed a long distance to acquire the knowledge of its foundation and reached down to, say, the plinth of the building. A very short distance, which is now left, is very difficult for them to cover. One of the reasons is the direction of approach in attaining knowledge and in fact, that direction is up way down.

#### What is Vaidic Particle Physics:-

The Vedas, as well as the Vaidic Particle Physics (VPP), starts knowing a thing, right from the sub-base of the foundation and then to the rest of the structure. The VPP starts its studies of the universe right from the study of the building blocks of this huge creation, while the modern science is awfully confused on the question of building blocks. They are producing confusing and illusive theories like the Quark Theory, which has consumed more than three decades of thousands of scientists. They still keep the destination far away. The other prevailing theory, the S-matrix Theory and its Bootstrap Approach is much in line with the Vaidic Particle Physics, except a slight but significant difference.

The study of the VPP is initiated with the study of Prakriti. Prakriti is the substance with which the building blocks of the universe are molded and manufactured. Therefore, all the properties of Prakriti that are necessary for the creation of the physical world are the main subject of studies in VPP. This includes the shape and the dimensions of individual Prakriti particles, if any, the collective behavior of Prakriti, the laws, which are followed for the creation work, and the scientific study of the resultant products.

#### The Study of the Vaidic Particle Physics Starts Now:-

#### What Is Prakriti? What Are Its Salient Features:-

In the Vaidic Particle Physics, after studying the state of affairs and before beginning the creation of universe, as mentioned in the Vedas, we find certain amazing properties of the Prakriti. One of the properties is its dual behavior. Individually it behaves like a particle, while collectively, its behavior is like energy. This property is described in the Rigveda 10/129. This period is called the *Pralaya Kaal*, which means the **Period of No-Creation or the Period of Total Disintegration**.

The subject of the whole chapter, or the Dewata of this whole Sookta, as it is called in Vaidic language, is **Bhaava-vrittam**, which means *the Story of Starting Creation Work*.

#### Scene Behind Curtain:-

The Vedas describe the condition just before the creation of the universe. The only thing which existed then, the Rigveda says, was some mysterious misty thing, which was densely filled in everywhere like an ocean of stagnant energy. Noth-

ing else existed there, either with or without any shape, no sign of any light, or of any movement, any action or reaction. No life existed then because, nothing was being created nor did death exist, because there was nothing to die. Complete darkness and inertness prevailed.

न असद् आसीत् न सद आसीत् तदानीं नासीत् रजो नो व्योमा परोयत् ।

किम् आवरीवः कुहकंस्य भार्मन्मः किम् आसीत् गहनं गभीरम् ॥ ऋ. 10/129/1 ॥

न म त्पुः आसीत् अम तं न तर्हि न रात्र्य अह आसीत् प्रकेतः ।

आनीद अवातम् स्वधया तदेकम् तस्माद् हि अन्यन् न पर किंचिन् आस ॥ ऋ. 10/129/2 ॥

तम आसीत् तमसा गूढम् अग्रे अप्रकेतम् सलिलं सर्वमा इदम् ।

#### Dual Characteristics of Prakriti:-

In the Mantra 2 and 3, three imperative words appear: **Aaneed awaatam, Swadhyaa, and Salilam.**

The first word, aaneed awaatam means the energy, which was inert, which was not active, not flowing, which was in the stagnant form like water confined in a jar. Therefore, we can call it the stagnant energy. The energy does not stay inert; it is always active. The substance, which was lying in the stagnant form, if was allowed to flow it would have appeared like flowing energy. It means the substance filled in there was in the form of energy. It was inert and inactive, because in the pralaya kaal, every thing was inert and inactive. On arrival of creation period, everything became active and creative energy. This substance of the stagnant energy on being active becomes raw material for the creation of the universe. It means the material cause of the creation of every thing is this energy.

Mr. Geoffrey Chew, one of the principal architects of S-matrix theory and its Bootstrap Approach and Fritjof Capra, considers energy to be the material cause of the creation.

*In S-matrix theory, there are no distinct entities and no basic building blocks; there is only a flow of energy showing certain well-defined patterns.*<sup>1</sup>

The second part of the above statement shows that the above theory is in line with the VPP. It is the first part of the statement, which has 'the slight but significant difference' as we mentioned in page 2 above.

The second very important word is Swadhayaa. It means self-consistent, self-supporting or self-generated. The mist-like substance filled in everywhere was not created by some body, nor was it supported by some thing. It was self-created and self-supported, because there was no cohesion in between them, no force of attraction or repulsion existed to displace or move them, therefore no support was needed.

The third important word appeared in the third Mantra of the Sookta and that is Salilam. The word salila is usually taken as the synonym of water. No doubt, the water is also an example of salila, but it does not mean salila. Unadisootra defines salila [Lfyya ly~ tkrc vkS.kkfnb byp~ AAm.kkfnlw= 1@55AA] to be the fluid. The Oxford dictionary says 'fluids consists of particles that move freely among themselves and yield to the slightest pressure'.

It means that the Salilam is the group of particles with the least or no cohesion in between. This confirms that according to the Vedas the substance filled in before creation was in the form of energy as well as in the form of particles. Individually it acted as a particle, and collectively as energy. There is nothing to get upset on this statement; there is nothing new in it. For example, the electrical energy is nothing but the flowing electron particles. Here too, the collectively flowing electron particles are manifested in the energy form, but individually they act as a particle.



The filled in substance, which has dual characteristics, is termed as Prakriti by the Saankhya Darshan, the Vaidic book in particle physics. The Vedas call this as 'Aditi'. The word Aditi points out a significant property of the substance, which is called Prakriti by the Sankhya. Etymologically the word Aditi means indivisible, indestructible, unbreakable, un-destructible, and eternal. [दीङ् (क्षयात्मक धातु) + क्तिन् (कर्ता के अर्थ में) = दिति : नञ् + दीङ् + क्तिन् = नदिति = अदिति: । दीङ् का दि हो जाता है।]

#### The Geometry of the Prakriti Parmaanau

Now, when we accept the particle form of the Prakriti particle, we accept all the mathematics related to the particle. After all, it must have some geometry, some mass, and some volume. We know they would be very small. They could have been:  $10^{-50}$  gm (mass) or  $10^{-50}$  cc (volume). This figure may have been smaller or greater. What so ever, it must bear some mass and some volume. We shall calculate them at a later stage; here we first decide its geometry.

Let us suppose that this smallest particle in the universe, also called Parmaanau in VPP, be in the spherical shape, because the surface area is minimum in this shape. These Parmanus start making joints and combinations, the first combination being of two particles. This group of two particles is called Dwianuka, the combination of two parmanus. These combinations of two particles then make bigger joints with similar particles.

#### The Electrical Charges in the Prakriti Parmaanau: -

The modern science finds all the sub-atomic particles always electrically charged with any of the three electric charges. They always bear either + (positive), or - (negative), or (0) neutral charges. The vaidic science calls these charged particles to be Saatwik, Raajasi and Taamasi particles. These charges are termed by the VPP as Satwa or Sato guna, Rajas or Rajo guna, and Tamas or Tamo guna.

#### From Where They Get the Charges: -

On arriving at this point, we find a big question waiting for us: From where do these particles get their electrical charges? Do they inherit these charges from the Prakriti Parmanus, or do they earn it at a later stage? If they inherit the charges from Prakriti, whether all the three charges are confined in every single particle or otherwise, different particles are adorned with different charges. Thus, they divide the Prakriti particles in to three groups of Saatwik, Rajasi and Taamasi particles.

If all the charges are confined in a single particle, how they are arranged? If the charges are earned by them at a later stage then how was that done? What was the procedure? These questions are required to be answered.

To seek the right answer of these questions we ask the Vedas, their different organs and other vaidic literature. The Saankhya ultimately answers to our queries. It says that when the three gunas, the Satwa, the Rajas and the Tamas, are in a balanced state in a particle they, conjointly, are called Prakriti. [IRojitLrelka lkE;koLFkk izdãfr% izdãrseZgkujeèèAAlka[-: 1Gh61AA]

#### The Three Gunas Are Confined In A Particle: -

This sootra explicitly declares that all the three gunas stay in each particle. The combination of the three gunas is called Prakriti. Here it is important to note that these three gunas should not be treated as if collected from somewhere and pasted or welded together. These gunas are an integral part of the Prakriti Parmaanau. They are indestructible, unbreakable, and inseparable, so they cannot be separated from each other. They all exist together; the presence of any one of them

shows the presence of the rest two, at the same place. This can be better understood from the example of the North and South Pole in a magnet, which do not exist alone, but always stay as a pair.

#### The Balanced State of the Gunas of Prakriti. How It Looks like, After-all: -

Furthermore, the balanced state of the gunas can only be reached when all the gunas act at a point to neutralize the effects of one another. If we allot one third portion by volume of the spherical Parmaanau to each of the gunas and white, red, and black colors to Satwa, Rajas and Tamas gunas, respectively, then the picture of the Prakriti Parmaanau at rest in neutral position will be as shown in the plate number 1. The direction of the gunas acting at the center, are being represented by the converging direction of the arrows.

In this position, when the three gunas or the three forces are acting at the center of the spherical Parmaanau, there is no force acting at the surface, which converts the particle to be neutral. This balanced state of the particle is only met in pralaya kaal. It will be known as Prakriti.

When the time to commence the creation is arrived, the balanced state of the three gunas in the particle is smashed and the direction of the acting gunas is reversed from inwards to outwards. At this moment, the particle ceases to be recognized as Prakriti, and then it becomes Mahat. This sudden change in the direction of application comes with a great impact and results in the big bang as the mantra suggests.<sup>2</sup>

#### The Properties of Mahat: -

The Mahat is an electrically charged particle and contains a unit quantity of the basic electrical charge of all the three varieties, within. These charges exert force of attraction, repulsion, and neutrality<sup>3</sup> on similar particles, on coming in close vicinity of each other as close as, almost in contact. Though they contribute to create the strongest known force of the universe, the nuclear force, they are known as the weak force, due to their shortest range. (See plate no. 2)

The Prakriti, on being transformed as Mahat, loses its inertness and inactivity, becomes active, and gets prepared to begin the beginning of the universe. The inactiveness and inertness of the un-manifested Prakriti vanishes and becomes the story to be read in the pages of only the Vedas. To see the Prakriti particle in the laboratory in its original forms, the same condition of inertness, as was in pralaya kaal, is required to be prepared. As can be understood, that is something harder than impossible a task. The condition of the Period of Total Disintegration, or the Pralaya kaal, can never be prepared in a laboratory.

In the light of these circumstances, if some body wants to learn about the properties of the Mahat particles, which are inherited by them from the Prakriti, there is no other way out except mining out the knowledge from under the hard shell of secrecy of the Vedas.

#### What Is the Electric Field: -

We know that the Mahat particle owns three gunas as its integral parts, in the form of three electrical charges. Therefore, Mahat is an electrically charged particle and it owns its field too.

The field is the special condition in the space, around a charged body, which will produce a force on another similar type of the charged body in the vicinity. The charged body produces the fields and they are felt only by another charged body.



Vaidic Particle Physics reads out this definition with a little modification. Field is the ability of the charged body to produce force on another charged body in the close vicinity. The range of the field is very short. It works almost on coming in contact with another particle. Range wise, though it is very short, it produces the strongest known force, the nuclear force. Due to the short range, this force is called the weak force.

Mahat, being the charged particles, they are the continuous medium, filled every where in the space, like an ocean of charged bodies as manifestation of the overwhelming electric field.

#### The Laws of Combination: -

The surface of the particle was all inert while in the Prakriti form, but it becomes alert and all active on getting transformation as Mahat. In the first case, the directions of the forces acting were from the surface to the nucleus of the particle. While in the later case, it is reversed to be acting from the center of the particle towards the surface, thus making it the first most sensitive surface of the universe.

The sootra of Saankhya 1/127 further means that the Satwa, Rajas and Tamas have attraction in between one another. The two Satwas and two Rajas repel each other, while the two Tamas remain neutral in behavior, due to the third property of neutrality. These combinations can be expressed in this way:

(+, -), (+, 0), (-, 0)	Attraction in action
(+, +), (-, -)	Repulsion prevails
(0,0)	Neutrality exists

This Law of VPP we frame here, with the help of Saankhya Darshan, is the first law of combination. The making of these combinations begin the beginning of the universe.<sup>4</sup>

#### The Particle Physics Joins With VPP: -

The Mahat particle is the ultimate matter particle. It is a unified integer of three indivisible and inseparable electrical charges sharing the equal portion of the particle by volume. The propagation of light in the waveform could have never been possible, without this 'three-in-one' property of matter particle. This fact is demonstrated diagrammatically in the VPP, later.

#### The Quantum Field: -

In modern particle physics, the conventional field theory is known as **electrodynamics**. Now this theory is merged with the quantum theory to give birth to a new concept of **quantum electrodynamics**. This theory includes both, the quantum theory and the relativity theory. This is the first most successful 'quantum-relativistic' model of modern science, as Fritjof Capra mentions in his **Tao of Physics**, page 210.

This is a new concept of quantum field where the field can take part of quanta or particles. This new concept is quite matching with what has been told by the VPP, the Mahat particles themselves act as the electric field also. Therefore, the quantum field is the fundamental physical entity and filled in everywhere as continuous medium. The formation of different stable and unstable particles are simply the arrangements of the Mahat quanta of this field to make different combinations or as Capra says, 'Particles are merely the local condensations of the field'.

The VPP explicitly explains how the 'condensation of the field' or the formation of different combinations of quanta takes place.

#### The Magnetic Field: -

The similar charges of two charged particles on coming closer make them to revolve or to move due to repulsion till the dissimilar charges come closer to make a bond, due to the force of attraction between dissimilar charges. These movements of the charged particles produce the magnetic fields, because we know that charges in motion (i.e. the electric current) produce the **magnetic field**. The magnetic force resulting from these movements are felt by other moving particles.

#### Dwianuka, the Combination of Two: -

On formation of this combination of two, named Dwianuka by VPP, many things happen, simultaneously. In fact, making of dwianuka is the starting of the creation work of the Universe.

The three, equally spaced charges in a Mahat Parmaanu, occupy equal portion of the particle all around. That keeps the particle forces in equilibrium and the particle stays in static position.

On making the combination of two, out of the six charges of two particles, two are engaged in making joint, while the rest of the four particles stay free causing imbalance of the forces. One of the three charges always got one count extra than the rest two. This extra counting charge never allows the dwianuka to stay at rest but always keep it moving.

#### The Electro-Magnetic Field And Particle: -

The electrically charged quanta field is the constituent of dwianuka, in conjunction with the magnetic force, produced due to their mutual movements. Both, the electric field and the magnetic force, conjointly form electro-magnetic field. This field takes the form of quanta also; dwianukas are the manifestation of this field in the quanta form. Therefore, the dwianukas are electro-magnetic particles as well as electro-magnetic field.

#### Dwianukas are the Photons: -

The dwianuka is the first combination of Mahat or matter particles, and it is an electro-magnetic particle, in addition, it travels in the waveform. (See plate no. 9&10). Further, a series of particles are created by these dwianukas one after another in cluster forms. Each particle surpasses but includes the predecessors, i.e. each higher-level particle envelops its junior one but not vice-versa. All these bigger particles on decay or on annihilation will release the lower level particles and ultimately the dwianuka. Exactly the same thing happens with Photons. These similarities in the nature and behavior of dwianukas and photons prove that the photon and the dwianukas are the names of the same particle.

It gives the internal structure of the photon to be the two Mahat particles. This is the first combination and the lightest of all the particles. We know that when the photons attain a particular frequency, they manifest visible light. This might be one of the reasons, for assigning the name 'light' to the light being the lightest amongst the first produced combination-particles.

Agni, the fire is produced earlier (the frequency of infra red electro-magnetic particles, i.e. photons,  $10^{12}$  to  $10^{14}$ ) than the visible light (the frequency  $10^{14}$  to  $10^{16}$  plus). The fire has been adorned with the beautiful name Agni because it existed before any thing else came into existence, like the God. Therefore, the God and the fire both have common adjective, the AGNI. In addition, the light follows Agni, the fire.



As the constitution of the two matter particles, Agni and light particles, are similar, the constitution of the photon and Dwianuka are also similar.

#### SUMMARY

All the known and unknown sciences are included in the Vedas. The segment of science, which has been explored here, is the advance knowledge of the particle physics. The Vedas give a new direction to particle physics, removes its road blockade, defuse its confusions, solve problems and show new horizons to scientists. It modifies Bootstrap Approach to the Superstring Theory and modifies Quark theory.

It answers, with diagram, the so-far-un-replied questions of the particle physics, why the positive protons do not repel and the neutral neutrons grab one-another so tightly, in a nucleus, to provide the strongest known, nuclear power, to the world. It explicates the gap of about  $10^{-13}$  cm between the nucleons and like wise, it tells many untold stories.

Due to the limitations, the present write-up presents the structure of two particles, the ultimate matter particle and the photon, and submits their diagrams, too. It explains the dual behavior of the matter or Mahat Parmanus, both as particle and as energy, raising curtain to reveal a scenario, as what was going on there, in pralaya kaal. It, further, discloses from where the sub-atomic particles get the electrical charges. It modifies the definition of electrical and electro-magnetic field, which is acceptable to the scientists as quantum field.

The subject matter of this Vaidic concept is exceedingly technical, however it is tried here to submit it in very simple and investigative language. The terminology is so simple and pacifying that it can be understood well by a secondary student.

This is the beginning of a new concept; lot of works is waiting ahead to be taken up. The Vedas have plenty to give to us, as much as we could carry. To explore more, an extensive unconventional study of the Vedas is required without prejudice. Somewhat different consideration and interpretation of the Richas is needed to extract more gems from the Vedas.

#### Reference :

<sup>1</sup> Tao of Physics by Fritjof Capra, Page 318.

<sup>2</sup> प्रीति-अप्रीति विशादाद्यैः गुणानां अन्योऽन्यं वैद्विर्म्यम् । सांख्य / 1 / 127 ।।

The Satwa, the Rajas and the Tamas have three different and dissimilar properties of attraction, repulsion and neutrality in them therefore the variance in their mutual behavior is seen.

<sup>3</sup> यदक्रन्दः प्रथमं जायमान उद्यन्तसमुद्रात् उत वा पुरी णात् । श्येनस्य पक्षा हरिणस्य बाहू उपस्तुत्यं महिजात ते अर्वन् ।। ऋ.1 / 163 / 1

<sup>4</sup> रागविरागयोः योगः स ि टः ।। सांख्य / 2 / 9 ।।

The properties of attraction and repulsion are jointly responsible for the creation of the universe.