

## *Preface*

*Whether there exist time, space and gravity on the earth, in what way they exist, and if they do exist, how they relate to the motion of solid, liquid, gas and particles, are all the fundamental scientific questions which are tied up with human life but have been left unanswered in the past century, which has affected the progress in the scientific world.*

# **Why Modern Science Requires Reflections**

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By analyzing why I have been devoted to answering the basic theoretical questions in natural science and their applications, the present thesis is intended to illustrate that the modern science requires self-reflections to avoid mistakes in mechanics and boost the progress of modern scientific world.

Key words: straight energy interchange; multi-phase engineering; Mechanics; sustainable Development.

As a science-loving proprietor of a metallurgical chemistry company, I have managed to innovate the series of super-thermodynamic techniques to overcome various difficulties in this field and gained the experience in making use of space gravity, which enables me to explore the essence of time, space and dynamics and their relations with solid, liquid, gas and particles, and to breakthrough the present study of onflow and its applications, and thus to explore the relations between the nature in existence and the trends of human life. I have also found that although modern science have achieved greatly in the field of particles, it has failed to surpass Gallileo' and Newton's conceptions in solving the rudimental questions on dynamics due to its adherence to materialism and the deviation of research focus from the earth misled by Einstein's "bent time and space", which caused confusion in the science world. It is unfavorable to the science world if we don't know where the error lies. To avoid errors in the study of dynamics and accelerate the progress of science in the 21th century, we need to reflect the modern science by means of pursuing science progress.

## **1. The Origin of Questions on Time-Space Forces and Resolutions to them**

I had learned that energy is capable of unifying power when I was still a student. Therefore, when I started an enterprise in 1987, I was able to apply a technical innovation of mechanics to solve the problems caused by huge investment and backward workmanship in recycling waste colored metals by means humidification and concluded that the conception of direct energy exchange is more applicable than theories of thermo-dynamics. In 1993, in order to improve the reproduction of waste metals to a new level, we faced some new problems on multiphase chemical reaction engineering, viz. how to utilize the sensitive relations between spatial geometric entities and the gases in multiphase flow, what is more, using power of fluid is also concerned with such dynamic issues as how to use gravity. While the correlates can not be coordinated due to lack of theoretical support from modern physical-chemistry, the conception of direct energy exchange enlightened us in the integrated utilization of spatial gravity laws, which enabled me to overcome the difficulty in this cross-disciplinary systematic engineering with only ¥2,000,000 in two years and to achieve objectives of both separating brass residue on large scales with rich oxygen humidity method and zero discharge, that is, the developing model of interactions between environmental protection and economy. From this experience of utilizing spatial gravity, I also discovered that “Physical Chemistry” only studies the structural internal energy of substances <sup>(1)</sup> instead of discussing the issue of exchange between internal and external energies, which has become one of the reasons why many theories can be applied to chemical reactions under normal (air) pressure, but can not be applied in actual production, and why many chemicals have side effects and polluting elements. However, from the perspective of dynamics those problems which can not be solved from the perspective of chemistry, can be properly solved. This actually touches the fundamental issues of science. For example, the technical innovation in multiphase engineering in my company made falling bodies collide each other and engender direct energy exchange, which has touched such an issue as why objects in the space on the earth can freely fall, which scientists in middle ages intended to solve <sup>(2)</sup> but in vain, and Gellileo thought it unnecessary to discuss <sup>(3)</sup>, and modern scientists ignore. Only through theoretical exploration, can we get acquainted with various relations existing in nature, which has been the insurmountable classic puzzle in materialism. It was the innovative

breakthrough in multiphase engineering that enabled me to conclude, after I had accepted the prophecy of “empty” made by Laozi 2000 year ago, that the space is inherently empty. Human beings have been using the space on the earth to improve their living conditions, which suggests that space is necessary to human lives, and it is the field where objects move and human live. The present question is how to utilize space scientifically so that we can live in a more comfortable environment and develop harmoniously and continually with the nature. Newton discovered gravity and disclosed the mystery why objects do not float in the sky. Newton failed to go further due to restrictions by many factors in his times. However, in modern society, as long as we analyze the property of various powers in the structures of substances considering the existence of the magnetic field of the earth, we conclude that the gravity is in essence the composition of natural forces represented as intangible and shapeless magnetic forces. The gravity field of the earth is in fact its magnetic field, and gravity is the attraction of the earth to the objects around it. It is an objective rule that gravity works on all the solids, liquids and gases on the earth. Although my present viewpoint on the natural existence on the earth has some discrepancies with Einstein’s generalized relative theory, one point should be firmly insisted on, namely, the fact that gravity is caused by the earth instead of the curved time and space.

However, it is no easy to extensively and reasonably utilize the spatial gravity. For example, when I intended to apply my experience in using spatial gravitation in metallurgy industry to the disposal of sewerage, I had to solve such problems as what time is and how to calculate turbulence so as to elicit feasible parameters for the mathematical model of multiphase biochemical reaction through more precise measurement of the gravity acceleration of fluid and avoid the high risk of investment in high-tech items. However, the issue of time has been the thousands-of-years-old puzzle in the scientific world and further confused by Einstein’s relative theory, while turbulence has not yet been analyzed with any principles. All the above issues can only be resolved by means of practice and scientific research.

Let us trace the origin of time. In order to provide a frame of reference for human activities, macroscopically ancient people expressed time units such as year, month and day with the cycle time of celestial bodies’ movements, while

microscopically modern people represent time unites such as hour, minute and second according to the mechanical movement of the hands of clocks. This suggests that after thousands of years of endeavor, man have final learned to systematically express unites of time by recognizing the regular cycle time of moving objects, say celestial bodies and man-made articles, which provides references for man identifying changing things. When we retrospect our perception of seconds, we conclude that the origin of time is actually human ideology indirectly expressed. So to understand time qualitatively we need to look at it historically and practically. Only in this way, can we trace the origin of time with abstract epistemological methods and thus base our knowledge of science on knowability, which is necessary for studying turbulence. After tracing the origin of time, space, force (dynamics) and their relations with solids and liquids and gases, I began to measure the acting force caused by the gravity of the freely falling liquid particles by equivalently changing gravity acceleration with centi-seconds as basic unites. I established a three-dimensional coordinate to observe the fluid particles changing with the variation of parameters of time when they are gravitated in the space. Based on this observation and the breakthrough in the calculation of turbulence, I gained a sudden insight that keeping spurt as our research object helps to trace the cause of turbulence so as to more profoundly understand the property of gravity.

## **2.An Analysis of the Cause of Rotational Flow and Questions on Modern Dynamics**

I think it is necessary to dwell on the rotational flow as follows. Suppose there is a fluid particle  $m$  on a cone-shaped sprinkler engaging in a flat trajectory motion under the drive of the inertial force  $N$  with a velocity of  $V$  and bumping onto the inner walls under the action of the gravity  $g=9.8\text{m/s}^2=0.098\text{cm}/(\text{cs})^2$  at the time  $at$ .(see the figure). As the aclinic section plane is round, in the horizontal direction , when driven by the inertial force the fluid particle moves inertially along the inner tangent line at the speed of  $V$ ; while in the vertical direction, the linear momentum caused by the bump of the particle  $P=atg$  is decomposed into the component force  $P_1=PSina$  which is parallel to the slope (this component force changes the particle's direction of movement) and the component force  $P_2=PCos\alpha$  which is perpendicular

to the slope and which can be further decomposed into  $P' = P_2 \cos \alpha$  which enables the fluid particle to produce a force which moves perpendicularly downwards and the pressure  $P'' = P_2 \sin \alpha$  in the horizontal direction. At this moment, if the wall (object) remains static,  $P''$  is transformed into a counterforce (namely the centrifugal force) equal but reverse to  $P''$ , which enables the particle  $m$  to perform centrifugal movement that is composed with  $V$  motion to form a bias on the horizontal plane. At the same time, the particle moves downward under the action of  $g$ . As the geometrical shape of the sprinkler is cone-shaped, the fluid particle incessantly collides with the wall and constantly changes directions when it is falling, which causes new displacement in both horizontal and vertical directions and the motion contrail of the fluid particle is gyroidal. Understanding this helps modern dynamics overcome the plight in integrally <sup>(4)</sup> resolving the issues concerning rotational flow. To solve the problem, we also need to have multi-particle (or quanta) as our research object so as to make it clear that there is space existing in the sprinkler which is quickly concaved owing to the free falling of the fluid particle which is slowed down due to their collision with the wall and other subsequent falling particles, which accumulates composed force. With the effect of accumulation stronger downwards the flow becomes spurting, which proved that rotational flow is caused by the composition of gravity, the counterforce produced while objects collide with each other and the mutual action of the fluid particle. Spurting is the resultant effect of force composition and it can be extensively applied to many fields.

After I solved this basic problem between 1998 and 1999, I further made a breakthrough in viewing the problem of rotational flow in a way that the modern dynamics can not solve it from the perspective of the Twisting Theory, viz. rotational flow is an eternal motion, which is associated with but different from solid dynamics. We need to trace the origin of the principles of dynamics and make some supplement to Newton's Third Principle so as to work out the relations among force, motion and their reference frame. This also enabled me to have meditated on the questions that have not been discovered in current world of science. However, solving the problems in rotational flow is a systematic project which also involves such problems as how to equably admeasure and collocate water. The problems could be solved through a mathematical model which involves complicated mathematical calculation concerning that of composition and decomposition of

forces and parameters in non-linear dynamics. Therefore the gravitational acceleration has to be precisely surveyed to avoid confusion in resolving the issues related to rotational flow. After analyzing different course books and academic journals on dynamics, I have found that the numerical value  $g$  is not measured in accordance with the experimental formula of falling body, viz.  $g = \frac{2H}{t^2}$  and their origins are omnifarious (representing it respectively with  $g = \frac{GMc}{Rc^2}$  <sup>(5)</sup>  $= \frac{V}{(V \sin x)}$  <sup>(6)</sup>  $= \frac{\pi^2 l}{t^2}$  <sup>(7)</sup>), which makes me doubt whether there is a scientific criterion in exploring this gravitational parameter. My further analysis suggests that although modern science has miraculously propelled social progress by applying the scientific achievements in the field of particles, it has achieved little in the field of dynamics as it fails to integrate facts and lacks the mutual complements and inoculations of east-west cultures, as a result of which, it is not nearly surpass Galileo's and Newton's conceptions in resolving those basic issues in science, and regards modern dynamics as classical, which makes the modern dynamics difficult to propose sustainable development from the perspective of dynamics.

### 3. Reflections on the Theoretical Basis of the Modern Science

A careful review on modern dynamics shows that Galileo's research on falling objects was more enlightened than Aristotle and the former initiated the modern dynamics in a mathematical method. However Galileo thought that science only needs mathematical description against physical explanation, and that tracing the origin of falling movements is unnecessary, which caused the loss of opportunity to find the existence of the nature of the earth and brought drawbacks to the modern dynamics. Newton discovered the law of universal gravitation through observing a falling apple and propelled the development of modern dynamics. However, being limited to the materialistic perception of the western philosophy, Newton failed to resolve the question whether gravitation existence is physical or nonphysical and was puzzled by the super-distance effect of gravitation. He united the research on the motion of heavenly body and that of the objects on the surface of the earth, <sup>(11)</sup> which made him fail to discover the demerit of Galileo's ideas on dynamics. what is more, being limited to his times, Newton's perception on time was also confusing, <sup>(12)</sup> which led to many problems in Newtonian dynamics. Although Newton's tug

experiment had touched the issues on vortex, it could not reveal the relationship between the gravity and fluid flow owing to not drilling a hole at the bottom of the tug, which led to more confusions when he had motion as the basic concept to explore the relations among the force, motion and reference frame. <sup>(13)</sup> All the puzzlements need to be solved by tracing the origin of principles of dynamics. However, when Mach ordered Newtonian dynamics in the 19<sup>th</sup> century, he did not tread the problems existing in modern dynamics but argued against Newton's abstract methodology. Mach tried to discover the flow of fluid in the tug by rotating the heavenly body but did not find the shortcoming of Newton's tug experiment, and he thought it was caused by something faraway in the universe and criticized Newton's tug experiment. This amounts to denying the existence of gravity, which can not be accepted by the science world. Inconceivably, this accidentally became the guidance for Einstein to foretell the motion of photic particles <sup>(19)</sup>. It was also because light rays decline toward the sun, which is not contradictory against the fact that the sun attracts photic particles, that scientists all over the world thought it to be the revision of Newton's theory of universal gravitation <sup>(20)</sup>. In consequence, the modern science regards Einstein's assumption as the theoretical basis without exploring the motional principle of photic particles and recognizing the origin of time-space force <sup>(21)</sup>. As a result, modern dynamics retrogressed due the problem of whether special gravitation exists and what are its relations to the motion of objects. What is more, modern science has followed Einstein to regard the "bent time-space" as the basis issue of science. Therefore, it has failed to explore the relations between the nature of the earth and human life to direct social development. This has an unfavorable effect on the development of modern science, so we must treat modern dynamics in scientific ways. What should be pointed out here is that when the motion of light particles was mysterious to the scientific world in the 20<sup>th</sup> century, it is no long difficult to disclose the motion principle of light particles: the velocity of light remains constant because the earth has no attraction to it, which can be proved by the fact that the coefficient of the electrostatic force is  $2.27 \times 10^{39}$  times as great as that of the gravitation of the earth; light beams deflect toward the sun because the gravitation of the sun attracts them, which can be explained with Newton's law of universal gravitation----this also demonstrates that both the sun and the earth have gravitations although they are different in force which Newton expressed with

mathematic formula which requires revising. However this should not be regard as the evidence of Einstein's bent space theory. Most scientists thought Einstein's relative theory had Rolenze's mathematical inference as the proof. However, Rolenze equivalently counterchanged the dynamic axis X' and the static axis X <sup>(23)</sup> and violated the principle that mathematic vector and scalar quantity are unequal, and finally transformed concepts such as time expansion <sup>(24)</sup> and so on. This was actually to enshroud the errors in Einstein's relative theory. A profound analysis of the development of dynamics suggests that due to the underdevelopment of science and technology and the lack of communication between oriental and occidental civilizations, the scientific giants in the history were impercipient about dynamics. Modern scientists are required to improve it so as to base our research of natural science on a solid theoretical basis. However, as modern dynamics has the materialism in the western philosophy as its epistemic standard, it can hardly improve itself. The development of modern dynamics has also been misled by Einstein's relative theory and shifted to the gravitation of objects far away from the earth, which has impractically confused the research directions of science and thus lost the capacity of scientifically discovering and resolving the questions and resultantly failed to discover the existence of the special gravitation. Therefore, in order to accord with the sustainable development of natural science, the scientific world should first of all reflect on the epistemic standard of modern science.

#### **4.The Significance of Exploring the Basic Theories of the Natural Science**

Does the whole nature exist in the form of material? This is a question undeterminable by the human mind. Probing into the fundamental scientific question, I find that the materialism only applies to the material field, which enables modern science to make great progress in the field of particle, but it does not make sense to the formless time-space gravity. The fact that magnetic fields exist everywhere on the earth may lead us to draw the conclusion that the western view of materialism violates the "practice is the sole criterion for testing truth" principle. Consequently, scientists fail to completely understand the space gravity. Noticeably, early 2000 years ago Laozi <sup>(20)</sup> in China already said that the existence of the nature is somewhat formless, which may shed some light to modern society. Therefore, the combination of the eastern and western civilizations may offer a possible solution to the basic scientific question. In fact, the gravity is formless and unmanageable. The existence



of space tells us why objects can fall down on the earth. On the other hand, objects may keep floating in the space without gravity. Since the height of the object is determinable and the time of falling down on the ground can be measured, we can have a Galileo formula about the acceleration like this:  $g = \frac{2H}{t^2}$ . This is a parameter between the gravity and the moving of the object. Basing on the gravity to explain the Galileo formula, we can see the mistake within Einstein's relativism. That is because the gravity is formless so the quality of the earth is irrelevant to the size of the object. Therefore,  $g = \frac{2H}{t^2}$  is more applicable than  $F = \frac{GMm}{r^2}$  to illustrate the relationship between the existing way of the gravity and the moving of the object. To question the latter's applicability is to further understand Einstein's relativism, and by further understanding the space gravity, I think that the mainstream of the scientific research to the nature is mistakenly based on Einstein's relativism<sup>(26) (27) (28) (29)</sup>. If we analyze the experiment of the freely falling object by combing the theory and the practice, we can easily distinguish the right and the wrong of mechanics. Only by doing so can we avoid the anxiety<sup>(30)</sup> the scientists have about the experiment and we may come to another conclusion that it is negligible that the gravity of the earth and the moon affect the acceleration<sup>(31)</sup>. So we can just neglect the effect of the moon gravity when designing experiments. If we have done the freely falling object experiments at different heights, then we can test out the applicability of Newton's gravity about space distance "1/r<sup>2</sup>" to the earth gravity, and can figure out the diminishing coefficient of the gravity acceleration to revise Newton's formula. In doing so, mechanics will be more succinct and deep-going and easy to understand. I have analyzed the relationships among time, space, gravity and the object in the experiment about freely falling object done in 2005. What it needs to improve is to exactly work out the technology used to make the systematic apparatus about time and synchronousness. So, I stop doing the same experiment when I learned that the data about "g" is the information of freely falling object experiment in Jan. 1<sup>st</sup>, 2007. But I think it is abnormal that modern science does not further probe into the actual meaning of the falling object experiment. I do hope that this experiment will advance in order that the basic scientific question can be resolved and modern science will have a clearer orientation. I always hold the view that only when scientifically understand the law of the nature can we see the significance of the space gravity and can we discuss the sustained developmental relationship between science and society. People may find that gravity is an ideal way to provide human beings with cheap, infinite resources. The problem before us now is how to make extensively use of it. However, science has not completely known the close relations between space gravity and human life, which reveals the serious problem within mechanics. It should be emphasized that gravity is a natural power from the earth which is transformable but not unified with electric power and which can be realized only by

the medium of waterflow. Unfortunately, Einstein denied that the existence of gravity, which is against the natural law. What our scientists need to do now is to consolidate together to return the fact to the nature and science. A scientific research needs to be speculated when it does not yield good results so as to get motivations for the development of science. After exploring the basic scientific question, I combine the function of the gravity and the principles of city planning to design sustained construction area for human beings' living. On an area of 100 km<sup>2</sup>, I can use 20% of it to construct 100 skyscrapers and the rest is used to accommodate 3 to 10 million people and build a versatile traffic system. Hopefully, this plan can resolve the over-populated problem and over-crowded traffic situations. At present, this plan is considering the design of the holders for the skyscrapers by taking safety, economy, multi-functions and easy construction into account. I am quite sure that this plan will enable people to enjoy a more suitable and comfortable living environment without depriving animals and plants' living areas. Therefore, I do hope that we could redefine the philosophy, religion and science in order to jump out of the confinement of present understanding in scientific circle. Because modern science is restricted by materialism and Einstein's relativism and consequently fails to find the significance of gravity. There are so many elites in the scientific circle, but why they all fail to uncover the question within science itself?

## **5. An Analysis on the Trends of Development in Modern Science**

When meditating the basic science question, I find that failing to discover the close relationship between particle and time-space gravity results from overemphasizing the achievements in particle fields but neglecting to solve the basic science question. Unfortunately, taking particle as the research object will never unravel the essence of space gravity. On the other hand, even though the space gravity theory is mistaken, it won't affect the particle field. But the reality is that modern science sticks to the mistakes within Einstein's relativism and Galileo's object-falling simultaneously<sup>(32)</sup>, paying little attention to the problems within Newton's bucket experiment and the unsolved problems about rapids. That is why modern science fails to make a breakthrough. For example, guiding by the mistakes within Einstein's relativism, modern science spent \$0.292 billion<sup>(33)</sup> in exploring the existence of gravity particles without first solving whether gravity exists in the form of field or wave. American scientists spent several decades and about \$0.7 billion in exploring the existence of bent space without first the essence of the gravity<sup>(34) (35)</sup>. Besides, modern science spent \$3.25 billion in exploring the magnet fields and atmosphere in Saturn without first understanding the relationship between magnet and gravity on the earth and the relationship between atmosphere and human life<sup>(36)</sup>.

The list goes on. So many examples show that modern science has mixed up the basic scientific research object at great expense. Therefore, only when focus on gravity research can we falsify Einstein's bent space hypothesis, improve the research on the nature and solve the ecological problems threatening human beings' sustained development. Unfortunately, many scientists stop uncover Einstein's mistakes due his great reputation. We need more people to consolidate to reconsider the basic scientific problems. Actually, many great men have made some mistakes. For example, David Gross who once achieved the Nobel Prize in the particle field, but he failed to understand the relationship between particle and time-space gravity<sup>(37)</sup>. Also, he tried to use string theory to solve the space problem without making sure the existence of it, and he tried to mix up the relationship between gravity and movement. Besides, he did not know the gravity problem could be solved on the earth but tried to solve it in the black hole<sup>(38)</sup>. All these show that it is difficult to explore the future of physics without first solving the basic scientific question<sup>(39)</sup>. So, I do hope David Gross himself could argue with me after seeing my paper in order to shed some light to the basic scientific problem and improve the scientific development. At that time, we may know that many traditional ideas need to be reconsidered and changed. I can provide another example. Mr. Ding Zhaozhong, also the Nobel Prize winner, emphasized the research on the basic scientific problem<sup>(40)</sup>, but he took anti-material as the object and consequently, he did not know anything about the future of physics and he consists that the motivations of scientific research come from curiosity<sup>(41)</sup>, which showed that modern science always tries to maintain the current situations. It should be stressed that only when the object of scientific research is right can we resolve it, and only when people take the natural existence and the falling object experiment as research object can we make it clear that what is the basic scientific problem. By doing so, we can make greater progress in scientific research. When we further understand the existence of space gravity of the earth, we will find that the formless characteristic of the nature is fundamental to human beings' sustained development. And then we would further uncover the relations of all existents on the earth so as to put forward a scientific development pattern which can boost the interaction of environment and economy. We can also adopt a market economy mode to substitute the fruitless conferences held by the UN<sup>(42)</sup> since it can stimulate people's initiative in a competitive way to promote the sustained development between human beings and the nature. Time will testify that only when we completely understand the existence of the nature can we change the increasingly devastating environment on the earth. Therefore, how to deal with the gravity problem is more than an academic dispute for it involves the further development of the society. As we all know, many material resources on the earth are being used up, a lot of rivers are being polluted and the deserts are expanding and threatening

people's living areas. What we need to do now is to jump out of the traditional horizon, and make every effort to explore new ways to improve human life and to reform the mechanisms of modern science. I think modern science research should be encouraging but not discouraging for new ideas so that more and more people will find out the mistakes in the previous so-called great theories like Einstein's relativism. Scientific research is difficult but we can make it once we consolidate together to take the right object and tackle the basic problem.

## 7. The Prospective Scientific World

Human beings will ultimately benefit from scientifically understanding the nature since the space gravitation is so closely related to our life. After speculating the basic scientific problem, I would like to draw a conclusion that the electro-magnetic theory is in line with the natural law while the mechanics has failed to tackle many natural problems on the earth and made lots of mistakes. I, therefore, attempt to propose that modern science make good use of the space gravity to get sustained development. Unfortunately, modern science always takes modern mechanics as classical and considers Einstein's relativism to be the greatest achievement ever made in history, which has hampered the developments of the society and science. Since 2000, I have published 8 papers to explore the basic scientific problem from different perspectives, and in this paper, I've just summarized my view to emphasize the importance of the rethinking about the basic problem. I do hope that more people will question my opinions in this paper so that we can further make the basic problem clear through heated discussions.

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