

INTRODUCTION

*M*an has been curious about life. From his childhood to adulthood to his old age, various questions keep striking his mind – what are all these? What is this world? Why is this world? Why am I here? What is the purpose of life? What is after this life? Is there any meaning to all these? How to get satisfaction of heart? What is knowledge? What is the correct process to learn about anything? For most of us, these questions fade away in face of everyday necessities, though they always surface again and again whenever situations ignite our inner space.

For those who endeavour to get answers to these questions, one major path is modern science and its great thinkers. Reality is all that we can see and experiment; seeing is believing; these popular believes are taught from the very beginning! Molecules and object are real. Life originally came from combination of atoms, and hence ultimately there is nothing, to say non-physical – Mind, Soul, Happiness, and God. All our emotions are reducible to so-called ‘the secret of life’, DNA. This as a whole is termed as materialism, to put simply in one word.

In the words of Scientist-Saint Dr. T. D. Singh, the Founder Director of the Bhaktivedanta Institute, “The Austrian physicist Erwin Schrödinger, although not a biologist, wrote a classic monograph – What is Life? In

1944. In the last few decades, there has been a rapid advancement in various areas of science which has provided us some additional insights into the questions of life. Scientists have unravelled many mysteries behind various life processes. However, the answers to the questions of life remains unreachable.”

Thus, while the scientific and rational arguments do provide a lot of food for thought but are inadequate to fill one's inner vacuum and provide answers to life deeper questions. Is there really nothing hidden behind this Carbon based body? We do meet and hear from the mystics about the religious teachings – they teach about an immortal soul and consciousness behind every living being. There is a purpose of life - to evolve our consciousness and be better human beings, providing a meaning to our seemingly purpose-less life. The Supreme Being called God is our well wisher and friend and is the final cause behind all these. Thus life has meaning, purpose, love, happiness, unlimited varieties of emotions, experiences and deeper realities beneath.

In the words of Dr. Singh, “A sincere attempt to have a clear understanding of life either scientifically, philosophically and religiously is of foundational importance and it will have important impact on our life and our world view.”

What thus we can say about these two major views of reality – one side is materialism and meaninglessness and other side is higher purpose and deeper realities. Which is correct? Or could these two aspects be brought together to get a bigger picture of life? This is where comes the development in a very small branch of

Physics, called Quantum Physics. This small but profound discipline brought a total change and rather a revolution in our structure of science and our way of thinking about this world. Is it really so? What is so serious in this quantum physics? What it teaches us about the reality and about the above questions we started with? Can electron and atoms also teach us about meaning of life? What is so special with the quantum mechanics that even after a century today it is still shaking some of deepest thinkers on our planet. It is said that all its founding fathers were stunned about the implications this physics brought us. What are those? Our little brother, electron shocked each one of us, which we hardly expected. Exploring these is precisely the aim and objective of the present conference on Quantum Physics and Consciousness, which was desired and initiated by the Scientist-Saint, Dr. T. D. Singh. Dr. Singh, a scientist of repute from the University of California, Irvine, who succumbed to spiritual wisdom and Vedantic teachings after his devoted science career in the early seventies. Searching for answers to these questions, he saw strong hints and insights to precious age-old spiritual teachings in the quantum physics and its paradoxes. Therefore, He launched first ever International Conference on Study of Consciousness within Science in one of the hearts of intelligentsia, the Bay Area, and brought together best minds for 2-day conference in San Francisco. The conference kick started the field of consciousness within science and within no time, many scholars started journals and in-depth articles. Dr. Singh desired that these insights which quantum mechanics has given us should be known and

shared with all - to provide helpful insights for resolving life's basic conceptions.

The present volume, being brought out as a 80th Birth Anniversary Commemorative volume in honor of Dr Singh, presents this invaluable wisdom for all of us. Starting from the thoughts of the founding fathers of quantum physics in their own words, in the first section, where one will find unheard-before conclusions drawn, by these renowned thinkers of all times, from the mysteries arising in quantum physics; one will delve deeper and further deeper through wisdom presented in later articles by reputed scholars from all over the world.

What Planck's quantum has to do with consciousness? Why Planck was pondering over the question of causation and free will? How did quantum phenomenon make Heisenberg to have many sleepless nights? Why did his discovered uncertainty principle bother him so much? Why did it force Niels Bohr to rethink the very meaning of the word 'understanding'? How did it enforce Schrödinger to think more and more about the incomprehensible wave function ψ proposed by him? Why did he start questioning about life itself? Why did Pauli penetrate from Physics to Psychology being guided by quantum puzzles? These are some of the interesting thoughts which will be revealed in the first section of this volume by these founders of quantum physics, which are collected from their own writings. This is a sample only to provide a glimpse into their profound wisdom – one can go through their books mentioned therein for diving further into their thoughts and conclusions.

The second section brings forth conclusions drawn by some of the contemporary renowned scholars of our times. Starting from Wigner's emphatic article on consciousness in modern physics, the section takes one to various paradigm shifts coming in science by Amit Goswami, analyzing state-of-art in various experiments attempted for quantum mechanics in recent times by Nobel Laureate in Physics A J Leggett, and the central role of observer and free will in physics by Zurich physicist Antoine Suarez. The third section focuses on possible connections between quantum physics and life; between physics and psychology, as Pauli and Wigner desired long ago. Containing wisdom from some of best brains in life sciences and psychology, it highlights the inevitable and irreducible role of mind and consciousness in our life. Section four traverses one more step into possible connection of quantum physics with spiritual wisdom and its theistic interpretations. As would be evident here, the renowned thinkers dig out the deeper 'meaning' and philosophical and spiritual implications out of quantum mechanics, which got buried in its mathematical formulation.

Quantum mechanics has certainly challenged our concepts of reality, "it is in quantum theory that the most fundamental changes with respect to the concept of reality have taken place" in the words of Heisenberg. We cut out our personality, our whole world of personal life while doing our science and it has come back again. How do we proceed from here now? How to sketch our new science of consciousness? The last section tries to collect wisdom with this aim. It seems that the world of consciousness is much bigger, and we need many more

elements to talk about it. It would require wisdom from many other fields beyond laboratory experiments, such as music, arts, philosophy, psychology, and of course our age-old spiritual traditions. Planck and Heisenberg already approved it.

— Editors