

## God Particle

TV is full of news about the possible discovery of the so-called “God Particle”. What does this mean in lay man terms? Have we discovered “God”? Is this the meeting point of science and religion?

Let us first understand what is this so-called “God particle”. Ever since scientific experiments began centuries ago, there has always been a curiosity about

- What makes up “matter”?
- How have the universe and life evolved?
- Can we find an “elementary particle” that is a “building block” that makes up the matter that makes the entire universe starting with micro-organisms through life and through macro things like the universe and galaxies?

Dalton’s Atomic theory came first and it said “atom” is the fundamental building block and the atom is indivisible. Then scientists found out that there are electrons, neutrons and protons. So, these became the building blocks and particles that could not be split any further. Protons and neutrons have “masses” that make matter physically weigh in the presence of gravity. Very soon, people found out that protons themselves are made up of more fundamental particles called “quarks”. In fact there are several types of quarks, so it is not as if there is ONE particle that acts as a building block for the entire universe.

In 1960s, British physicist Prof Higgs proposed a theory that there is a particle called “Higgs Boson” which is the fundamental building block of the entire universe. The Higgs Theory explained how particles combined together to form stars, planets and even life. Without the Higgs particle, the other particles would have remained separate and the universe would have been like soup.

In its quest for such a particle, CERN in Switzerland set up a \$10 Billion “particle accelerator”. It is a 17 mile tunnel underground that is used by physicists to study fundamental building blocks of the universe. Today the scientists believe they have found this “Higgs Boson” particle. While it is not confirmed, the scientists believe this is a great step in the quest for the building block of life.



Just before we conclude, two other interesting points:

Why is it called “God Particle”? It is just a code name derived from [Leon Lederman's popular science book on particle physics, \*The God Particle: If the Universe Is the Answer, What Is the Question?\*](#) May be this is what has derived the media interest! Be very clear, there is absolutely nothing godly about the particle!

Why the name “Higgs Boson? Higgs because of Prof Higgs proposed this theory. “Boson” because Indian scientist Satyendra Nath Bose proposed a particle which has come to be called “Boson”. So, like in the discoveries and inventions of centuries ago, here also India has a hand in the latest development.