

## 《Chinese scientists enjoy major discovery in physics》

A major discovery in theoretical physics has been revealed in Shanghai 's Jiaotong University. It proves beyond reasonable doubt the existence of the particle, Majorana fermions.

Nearly eighty years ago, a great physicist named Ettore Majorana talked about the existence of a very peculiar particle, which would be considered highly significant in theoretical physics.

Scientists have been searching for it ever since. But, now, for the first time, spin properties of majorana particles have been observed by a group of Chinese scientists.

Professor Jia Jinfeng and other Chinese scientists lifted the veil of the mysterious Majorana fermions, and published the renowned Physical Review Letters.

"Theoretically Majorana can appear at the interface between topological insulators and superconductors. Like a sandwich, now we developed a structure to make topological insulator on top of the superconductor. We use thin films to grow on the superconductors. In the future we have many things to do for example to increase the temperature to realise the Majorana fermions. Second is to find a way to control the particle," said Professor Jia Jinfeng from Shanghai Jiaotong University.

The hunt for the Majorana fermions transfixed physicists worldwide for years. The discovery in China now provides a straightforward way to observe the elusive particles.

"The Majorana fermions has several properties. Like zero energy, spin property and special distribution. In our case, we observed all the features of Majorana fermions. So we are more confident," said Professor Jia.

The observation has also been recognised by other academicians.

"It is significant from two aspects. One from the fundamental physics standpoint. Due to its peculiar character, it is considered a potential candidate for dark matter to help us to know more about the universe. And because of their minimal interaction with the rest of the world, they could also help scientists to build quantum computers," said Zhang Ze, academician of Chinese Academy of Sciences.

As commented by a referee of the PRL, the results from the experiment are clear and convincing, and they also provide a direct approach for observing the mysterious Majorana fermions.