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UPDATED: 10:52, January 21, 2006

China to build world's first "artificial sun" experimental device



A full superconducting experimental Tokamak fusion device, which aims to generate infinite, clean nuclear-fusion-based energy, will be built in March or April in Hefei, capital city of east China's [Anhui](#) Province.

Experiments with the advanced new device will start in July or August. If the experiments prove successful, China will become the first country in the world to build a full superconducting experimental Tokamak fusion device, nicknamed "artificial sun", experts here said.

The project, dubbed EAST (experimental advanced superconducting Tokamak), is being undertaken by the Hefei-based Institute of Plasma Physics under the [Chinese Academy of Sciences](#). It will require a total investment of nearly 300 million yuan (37 million U.S. dollars), only one fifteenth to one twentieth the cost of similar devices being developed in the other parts of the world.

The new device will be an upgrade of China's first superconducting Tokamak device, dubbed HT-7, which was also built by the plasma physics institute, in partnership with [Russia](#), in the early 1990s. HT-7 made China the fourth country in the world, after [Russia](#), [France](#) and [Japan](#), to have such a device.

"The EAST project research results will be significant for the International Thermonuclear Experiment Reactor, or ITER, in terms of basic research both in engineering technology and physics," said Wan Yuanxi, who is in charge of the project.

Wan said ITER will also be a full superconducting experimental Tokamak fusion device with an advanced configuration, but much larger than EAST.

The program, still in its initial stages, involves [Russia](#), [Japan](#), the [United States](#), the [European Union](#), [China](#) and the [Republic of Korea](#).

Controlled nuclear fusion is seen as an efficient way for people to generate infinite, clean energy to offset the dearth of fossil fuels such as oil and coal.

Scientists believe that deuterium can be extracted from the sea and an enormous amount of energy can be obtained from a deuterium-tritium fusion reaction under huge temperatures of 100 million degrees Celsius. After nuclear fusion, the deuterium extracted from one liter of sea water will produce energy equivalent to 300 liters of gasoline.

If a device is developed that can withstand temperatures as high as 100 million Celsius degrees and control a deuterium-tritium reaction, it will be as though an "artificial sun" had been created able to supply infinite, clean energy for human beings.

Source: *Xinhua*

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