

New Siberian Particle Accelerator Backed By Academy

By [The Moscow Times](#)

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The head of the Russian Academy of Sciences said Tuesday that the country should move ahead with the construction of a new particle accelerator in Siberia to study exotic particles that could unlock secrets of the universe's formation.

"This is a priority project that must be pushed through," Vladimir Fortov told an assembly of scientists at a meeting of the academy's governing body.

He said that funding for the project could come from the recently established Russian Science Fund, which he noted has significantly greater financial capacity than was previously available.

Yevgeny Levichev, one of the scientists who proposed the project, earlier said the facility would cost about \$500 million.

The Super Tau Charm Factory, as the proposed facility is being called, would be built by the Budker Institute of Nuclear Physics in the Siberian science city Akademgorodok.

The accelerator would crash high-speed electrons and their complimentary anti-particles into one another. The resulting explosion of energy is hoped to produce a record number of tauon and charm quark exotic particles — hence the facility's name.

The project would investigate physical phenomena that fall outside the so-called Standard Model, which has remained the most widely accepted theory of particle physics for the past four decades.

In particular, the project aims to study symmetry-breaking in the formation of matter in order to explain the processes during the creation of the universe — when conditions were similar to those in a particle accelerator — that led to the near complete absence of antimatter in the known universe.

According to a 2010 presentation by Levichev posted on the website of the European Organization for Nuclear Research (CERN), the Super Tau Charm Factory would feature a number of novel electromagnetic devices known as Siberian snakes, damping wigglers and crab sextupoles.

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