

believe *v* — веритьchamber *n* — камераcurrent *n* — электрический токdischarge *n* — разрядjoint *a* — совместныйrarefy *v* — разжижатьring *n* — кольцоsupport *v* — поддерживать

There are two fundamental possibilities of using controlled thermonuclear reaction: magnetic holding plasma and internal holding plasma. At present, the leading place among the systems of the first type is held by the Tokamak which was suggested and practically realized by the group of scientists at the I.V. Kurchatov Institute of Atomic Energy in Moscow.

The Tokamak is a ring-shaped vacuum chamber placed inside a toroidal solenoid. An electrical discharge is produced in the chamber in a rarefied gas. The magnetic field created by the solenoid isolates the plasma of the discharge from the walls of the chamber. The plasma must be heated by the current flowing in it.

It took our experts many years until, in 1968, it became possible to heat the hydrogen plasma to a temperature of ten million degrees on the T-3 Tokamak. The whole world believed in the Tokamak. The national programmes of the USA, Japan, France, the FRG, Britain and several other countries were aimed at the use of Tokamak-type systems. Scientists are still working on T-15, a special characteristic part of which is the superconductive toroidal solenoid, a prototype of the analogous system of a thermonuclear reactor.

The joint efforts of scientists from different countries have made it possible to raise the temperature of plasma to 80 million degrees. Some experience has been achieved in designing and building whole installations and operating their separate systems.

In 1978 the Soviet Union suggested that the International Atomic Energy Agency should link the efforts of countries actively engaged in thermonuclear reactor. This initiative was supported by the Governments of the

USA, Japan and several West European countries. If the research is successful, mankind will receive a source of energy with enormous resources of fuel to be found everywhere, including the water of the whole ocean.