**Abstract**

In this work, dependence of energy confinement time on plasma internal inductance has been studied by using the solution of Grad–Shafranov equation (GSE) for circular cross-section HT-7 tokamak. For this, the Shafranov parameter (asymmetry factor) and poloidal beta were obtained from solution of GSE. Then we can find the dependence of energy confinement time, on plasma internal inductance. It is observed that the maximum energy confinement time is related to the low values of internal inductance (0.7<li<0.9)(0.7<li<0.9).