1125-65-1649   **Mikheil Tutberidze*** (`mikheil.tutberidze@iliauni.edu.ge`), 3/5 Kakutsa Cholokashvili ave., 0162 Tbilisi, Rep of Georgia, and **Akaki Gvalia** (`akaki.gvalia@gmail.com`), 59a David Aghmashenebeli str., 2000 Zestafoni, Rep of Georgia. *On the Numerical Integration of Initial-Boundary Value Problem to One Nonlinear Parabolic Equation.*

In the present work the difference scheme for initial-boundary value problem to following nonlinear parabolic equation

$$\frac{\partial U}{\partial t} = \frac{\partial}{\partial x}\left(k\left(x,\, t,\, U,\, \frac{\partial U}{\partial x} \right) \frac{\partial U}{\partial x} \right) + f\left(x, t, U \right)$$

is considered. For the mentioned difference scheme the convergence of its solution to the solution of the source problem is proved when certain conditions hold. For the same difference scheme the comparison theorems and the existence and uniqueness of its solution is proved for the same conditions. The iteration process for finding difference scheme solution is constructed and its convergence is proved. (Received September 18, 2016)

1