Annotation of degree work “Modeling of Raman Lasers based on phosphorus-doped silica fiber” of student Yakovlenko Natalia.

Mathematical modeling of two two-cascaded Raman fiber lasers (1.061\1.235\1.478 mkm and 1.061\1.235\1.306 mkm) on phosphorus-doped silica fiber was developed in this work. This modeling was made by solving the system of differential equations for pump power and power of stocks components with the necessary boundary conditions.

The first laser (1.478 mkm) is interesting for pumping of erbium fiber amplifier, the second (1.306 mkm) is for research of some nonlinear effects in optical fiber on the quartz glass.

For numerical solution the standard method of MathLab was used, which is based on formula of Lobatto.

The results of this work show that these lasers are enough effective what allow to expect of further practical use.