Problems of development of fiber sources with improved output power stability and photonic crystal fibers measuring systems

© S.O. Leonov, V.A. Lazarev, D.A. Dvoretsky,
S.N. Boyarskaya, S.G. Sazonkin

Bauman Moscow State Technical University, Moscow, 105005, Russia

The paper deals with the development of the advanced fiber sources with high output power stability and photonic crystal fibers measuring systems. A technique for improving the output power stability by means of using broad absorption lines of active fiber is developed. The results of the Tm^{3+} doped active fibers absorption lines studies is presented. Mathematical modeling of the dispersion characteristics of different PCF types is made. The experimental results of dispersion measuring are considered, and the results verification is carried out.

Leonov S.O. (b. 1986), junior researcher at the Research Educational Center for Photonics and IR-Technology at Bauman Moscow State Technical University. Author of 10 publications in the field of optical-and-electronic and laser devices. e-mail: Leonov-St@yandex.ru

Lazarev V.A. (b. 1986), junior researcher at the Research Educational Center for Photonics and IR-Technology at Bauman Moscow State Technical University. Author of 12 papers and 2 patents for inventions in the field of fiber optics and laser physics. e-mail: sintetaza@mail.ru

Dvoretsky D.A. (b. 1986), junior researcher at the Research Educational Center for Photonics and IR-Technology at Bauman Moscow State Technical University. Author of 10 papers in the field of fiber optics and laser physics. e-mail: ddvoretskiy@gmail.com

Boyarskaya S.N. (b. 1990), engineer at the Research Educational Center for Photonics and IR-Technology at Bauman Moscow State Technical University. e-mail: snboyarskaya@gmail.com

Sazonkin S.G. (b. 1990), at the Research Educational Center for Photonics and IR-Technology at Bauman Moscow State Technical University. e-mail: sazstas@gmail.com