

# **A Review on our Latest Amplifier and Laser Demonstrations by Bi-doped Fibers**

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## **Abstract**

Bismuth (Bi)-doped fibers paved the way to develop amplifiers and lasers in 1150-1800nm wavelength range owing to its host dependent luminescence characteristics. Bi-doped aluminosilicate (BAS), phosphosilicate (BPS) and germanosilicate (BGS) fibers have shown luminescence around 1150nm, 1300nm and 1450nm, respectively. Here, we present the fabrication of Bi-doped fibers with aluminosilicate and phosphosilicate hosts by the MCVD-solution doping technique. These fibers were characterised for absorption and unsaturable loss (UL). The obtained results were used to select an appropriate pump wavelength for amplifier and laser development. Bi-doped aluminosilicate and phosphosilicate fiber amplifiers have been demonstrated in different wavelength bands. In addition, an 110mW Bi-doped phosphosilicate fiber laser operating at 1360nm has been reported.