

11

- ability of an induced emission of Nd³⁺ at about a 1.3 μm wavelength band;
 - (b) a light source for generating excitation light for exciting Nd³⁺; and
 - (c) optical means for directing said excitation light from said light source to said optical fiber; and
 - (2) resonator means for feeding light at or near said 1.3-μm wavelength band from said optical waveguide device back to said optical waveguide device.
13. A fiber amplifier comprising:
- (1) an optically active apparatus comprising:
 - (a) an optical fiber comprising: a core consisting of an optical functioning glass containing Nd³⁺ as an active ion doped in a host glass, wherein an uranium ion is doped in said core or a portion surrounding said core, wherein said optical fiber transmits light at or near a 1.3 μm wavelength band;
 - (b) a light source for generating excitation light for exciting Nd³⁺; and

12

- (c) optical means for directing said excitation light from said light source to said optical fiber; and
 - (2) coupling means for coupling signal light at or near said 1.3 μm wavelength band to said optical fiber.
14. A waveguide amplifier comprising:
- (1) an optically active apparatus comprising:
 - (a) an optical waveguide device comprising: a core consisting of an optical functioning glass containing Nd³⁺ as an active ion doped in a host glass, wherein an uranium ion is doped in said core or a portion surrounding said core, wherein said optical waveguide device transmits light at or near a 1.3 μm wavelength band;
 - (b) a light source for generating excitation light for exciting Nd³⁺; and
 - (c) optical means for directing said excitation light from said light source to said optical waveguide device; and
 - (2) coupling means for coupling signal light at or near said 1.3 μm wavelength band to said optical waveguide device.
- * * * * *

25

30

35

40

45

50

55

60

65