

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2007/0104421 A1 Henriksson et al.

(43) **Pub. Date:** May 10, 2007

(54) WAVELENGTH SELECTIVE DEVICE

(75) Inventors: Anders Henriksson, Hasselby (SE); Fredrik Jonsson, Stockholm (SE); Staffan Karlsson, Uppsala (SE); Ulf Olin, Enskede (SE)

Correspondence Address:

BIRCH STEWART KOLASCH & BIRCH **PO BOX 747 FALLS CHURCH, VA 22040-0747 (US)**

(73) Assignee: PROXIMION FIBER SYSTEMS AB, Kista (SE)

(21) Appl. No.: 10/581,252

(22) PCT Filed: Nov. 30, 2004

(86) PCT No.: PCT/SE04/01774

§ 371(c)(1),

(2), (4) Date: Oct. 19, 2006

Related U.S. Application Data

(60) Provisional application No. 60/481,726, filed on Dec. 1, 2003.

(30)Foreign Application Priority Data

Dec. 1, 2003

Publication Classification

(51) Int. Cl. G02B 6/28 (2006.01)G02B 6/34 (2006.01)

U.S. Cl.

ABSTRACT (57)

The present invention relates to a device, method, array and use of the device for optical coupling. The device comprises first and second optical waveguides (13, 23) extending longitudinally with cores (14, 24) adapted to guide optical radiation (15), first resonator means, laterally surrounding the first waveguide, comprising first and second resonator members (18, 19), and second resonator means, laterally surrounding the second waveguide, comprising third and fourth resonator members (28, 29). The invention is characterised in that first and second deflector means (16, 26) are adapted to couple radiation propagating in the respective first and second waveguides with common radiation modes (30), which modes are defined by adjustable geometrical and material properties of the device, so as to obtain wavelength selective coupling of radiation guided by the first and second waveguides, provided the resonator means are tuned to the same resonance wavelength.

