on the substrate, and a waveguide on the substrate coupled to the resonator for guiding the electromagnetic radiation to the resonator, the resonator being resonant at a predetermined wavelength of electromagnetic radiation and the low refractive index region having a lower refractive index than a material of the resonator,

wherein the low refractive index region comprises an air gap between the resonator and the substrate and has a width corresponding to a width of the region in which the electromagnetic radiation is concentrated, and

wherein the device further comprises a support layer on the substrate, supporting the resonator and laterally adjacent to the air gap.