18. The optical sensing system of claim 17,

wherein the first resonator and the second resonator each comprises a closed loop.

19. The optical sensing system of claim 18,

wherein the closed loops are ring-shaped.

20. The optical sensing system of any one of claims 1 to 19, further comprising:

a light source configured to provide light.

21. The optical sensing system of claim 20,

wherein the light source comprises a broadband light source.

~~22. A method of determining a change in an effective refractive index of a resonator~~ of an optical sensing system, the method comprising:

determining if an output light intensity measured by a detector of the optical sensing system is at a predefined value;

if the measured output light intensity is not at the predefined value, adjusting a current or voltage applied to a further resonator of the optical sensing system to align an optical resonant frequency of the further resonator with an optical resonant frequency of the resonator until the measured output light intensity is at the predefined value;

determining the change in the effective refractive index of the resonator based on the change in the current or voltage applied to the further resonator.

23. The method of claim 22,

wherein the change in the effective refractive index of the resonator and the change in the current applied to the further resonator has a relationship of:

$$\Delta n_{eff} = 2ARI\Delta I\frac{n_g}{\lambda_0}$$

wherein Δn_{eff} is the change in the effective refractive index of the resonator, A is thermal efficient (nm/W), R is the resistance of a thermal heater, I is the current applied to the further resonator, ΔI is the change in the current applied to the further resonator, n_g is a group refractive index of the resonator, and λ_0 is the center wavelength of the resonator.