

## Radio wave generation using dark and bright soliton

### Abstract

In this study we propose a new system for radio wave using a soliton pulse within a micro waveguide and nano-waveguide. The system consists of two micro ring resonators and a nano ring resonator that can be integrated into a single system. The input soliton power, coupling coefficients, and ring radii, are used to control the short-wave and millimeter-wave output signals being generated and filtered in a single system. The large bandwidth signal is generated using a soliton pulse within a Kerr-type nonlinear medium. The signals with broad bandwidth or wavelength can then be generated. Results obtained have shown the potential of using this system for a broad light spectra generation.