

**A new concept of white light generation using a nano-waveguide for the solar radiation collection use**

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**Abstract:** We propose a novel system of a nano-waveguide that can be used to generate the continuous optical spectrum, i.e. white light. A system consists of two micro-ring resonators and a nano-ring resonator that can be integrated into a single system. The large bandwidth signal is generated using a soliton pulse propagating within a Kerr-type nonlinear medium, whereas the continuous bandwidth or wavelength of light signal can be performed. Results obtained have shown the potential of using such a system for white light source generation and amplification, which is discussed. The amplified pulse can be stored within a nano-waveguide, which is allowed to form the continuous spectrum after amplification. Alternatively, the low-level solar radiation can be amplified, and the bandwidth signals can also be enlarged. (C) 2009 Published by Elsevier GmbH.

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