Synthesis of Nanoparticles with Enhanced Thermal Stability

Advantages

• Shows promising operation over more than 200nm FWHM bandwidth using only 3 parallel SOAs

Invention

The design for a broadband tunable laser source comprised of N paralleled SOA devices coupled into a single mode optical fiber and filtered for consistence and output tuning.

Background

The ability to have an optical source that will generate the widest spread of wavelengths (colors) possible is necessary to many fields including Optical Coherence Tomography (OCT) in medical imaging, spectroscopy, and optical communications. A single dream source that will output light from all wavelengths at equal intensities is just that, a dream. Generally a region of the spectrum is chosen based on application, normally the infrared, and multiple sources are used to piece together a broad band testing capability. Combining multiple narrow band semiconductor optical amplifiers (SOAs) that represent a collection of operational wavelengths, has allowed researchers at UCF to develop a system that may operate with stable output tunable over a very broadband.

Application

Ultra-broadband laser sources are in high demand for basic researchers and product developers in the fields of OCT, spectroscopy, and photonic devices.

Lead Inventor

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