For Immediate Release
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Press Release

NP Photonics offers a high power, wide bandwidth 1-um ASE source

Broadband Light Source Ideal for Optical Coherence Tomography Applications

NP Photonics' Scorpio 1-μm ASE sources offer significant benefits to biomedical applications, especially in the area of optical coherence tomography (OCT). The Scorpio 1-μm ASE is a broadband incoherent light source based on NP's active fiber technology consisting of an energized rare-earth doped single mode optical fiber. It delivers both high power (>25 mW) and wide bandwidth (> 65 nm) centered at 1030 nm wavelength. The ASE output beam emanates from a single mode fiber with 0.14 numerical aperture and exhibits a high quality single mode transverse beam profile suitable for delivery to a high resolution imaging system.

The 1-μm ASE source opens up a new wavelength region for OCT especially in the field of high-resolution ophthalmic and soft tissue imaging. Light at 1-μm wavelengths has relatively low water absorption, penetrates deeper into the retina than 850 nm sources, and is near the zero dispersion point for water. The fiber-based 1-um ASE is dramatically superior in terms of cost, ease of use, stability, and reliability compared to bulky and expensive femtosecond laser systems.

Short coherence length is important for OCT applications. The current 1-μm ASE source has a coherence length of 9-μm in air, and less than 7-μm in tissue. Powered by telecommunication grade pump lasers, the 1-μm ASE source is a very stable, low-noise, and highly reliable source suitable for the most demanding applications. The fiber-based source produces a smooth gaussian-like spectral response – ideally suited for avoiding artifacts in OCT images. NP's Scorpio 1-μm ASE includes optical isolation (> 20 dB) in order to maintain highly stable operation at all output power ASE levels - even in case of strong back reflections. The high output power (> 25 mW) capability is useful to improve overall signal to noise, and for emerging applications in video OCT.

Passive optical components, such as power splitters, isolators, and combiners are readily available in the wavelength region of this source. Standard InGaAs photo-detectors provide high responsivity over the source's entire wavelength range. These components enable convenient integration with existing experimental set-ups. Overall, NP Photonics' 1-μm ASE source offers researchers a fresh window to an exciting variety of new OCT applications.

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Founded in 1998, NP Photonics is the originator of Erbium Micro Fiber (EMF) technology and is dedicated to the design, manufacture and marketing of compact, low-cost, intelligent fiber-based products for the sensing, medical and R & D markets. The company has developed a broad family of products based on its EMF including fiber lasers, ASE Sources and fiber amplifiers.

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