Novel Fiber Lasers in the Visible, SWIR, and MWIR (invited)

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This presentation will provide an overview of novel fiber laser sources in the visible, short-wave infrared (SWIR), and midwave infrared (MWIR) portions of the optical spectrum. Additionally, recent work in the long-wave infrared (LWIR) will be presented.

OCIS Codes: (060.2280) Fiber design and fabrication; (060.2390) Fiber optics, infrared; (060.2410) Fibers, erbium; (060.4370) Nonlinear optics, fiber; (060.5295) Photonic crystal fibers; (060.7140) Ultrafast processes in fiber; (140.3510) Lasers, fiber; (140.3560) Lasers, ring; (140.3615) Lasers, ytterbium; (140.4050) Mode-locked lasers; (140.4480) Optical amplifiers; and (140.7090) Ultrafast lasers.

SUMMARY

This presentation will provide an overview of new and novel fiber laser sources in the visible, short-wave infrared (SWIR), mid-wave infrared (MWIR). Additionally, recent work in the long-wave infrared (LWIR) will be presented. The types of fiber lasers that will be covered will include continuous wave (CW), modelocked, frequency combs, and Q-switched in the various wave-bands. The utility of photonic crystal and multi-structured fibers to produce supercontinuum (SC) sources and nonlinear conversion in fiber will be reviewed. Additionally, a small sample of crystal fiber technology will be discussed as this may lay the groundwork for future fiber laser technologies. Particular attention will be made in discussing power-scaling of these technologies as they have wide-spread interest for applications.