

SBIR 06.2 PHASE I - AWARD DETAILS	
ORGANIZATION	ARL
TOPIC NUMBER	A06-062
CONTRACT NUMBER	
YEAR OF AWARD	
AWARD START DATE	
AWARD COMPLETION DATE	
PROPOSAL NUMBER	A062-062-0689
TITLE	Man-portable Ultrafast Fiber Laser for Remote Sensing of Chemical, Biological, and Explosive Hazards
PROJECT MANAGER	Fabio Di Teodoro (425) 482-1100 fditeodoro@aculight.com
COMPANY	Aculight Corporation 11805 North Creek Parkway S. Suite 113 Bothell WA 98011 Minority Owned: No Veteran Owned: No Number of Employees: 78
KEYWORDS	Photonic crystal fiber, femtosecond laser, Yb-doped fiber amplifier, all-fiber laser
ABSTRACT	An all-fiber-based femtosecond laser featuring a large-core Yb-doped photonic crystal fiber amplifier is proposed. The laser can generate pulse energies in excess of 0.1 mJ while retaining a compact, modular, rugged architecture amenable to rapid field deployment in Laser-Induced-Breakdown-Spectroscopy (LIBS) sensors.
BENEFITS	Compact and environmentally robust, high-pulse-energy femtosecond lasers can serve many potential military and national-security remote-sensing applications. Moreover, these sources are of interest for industrial applications such as drilling and marking and for medical use (tissue ablation). The simplicity, flexible form factor, and high wall-plug efficiency of the proposed laser is especially attractive from the standpoint of rapid integration in existing systems.