

SBIR 06.2 PHASE I - AWARD DETAILS	
ORGANIZATION	MRMC
TOPIC NUMBER	A06-157
CONTRACT NUMBER	
YEAR OF AWARD	
AWARD START DATE	
AWARD COMPLETION DATE	
PROPOSAL NUMBER	A062-157-1673
TITLE	Liquid-Fueled Catalytic Heater for Infusion Fluids
PROJECT MANAGER	Clifford Welles (925) 460-3860 cwelles@pacbell.net
COMPANY	Catalytic Devices International LLC 7063 Commerce Circle, Suite E Pleasanton CA 94588 Minority Owned: No Veteran Owned: No Number of Employees: 6
KEYWORDS	portable catalytic heat, infusion fluid warmer, liquid fueled
ABSTRACT	Injuries requiring infused fluid resuscitation often dictate a commensurate need of maintaining fluid temperatures within a narrow range. One method of addressing the issue is with regulated joule heating (i.e., electrical resistance heating). Where access to the power grid is limited or unavailable, regulated heat energy, necessary to achieve acceptable fluid temperatures and infusion rates, is currently achieved with batteries having well known limitations, including relatively low gravimetric and volumetric energy and power densities and often with a restricted shelf life. CDI's expertise and proprietary catalytic heat source technologies overcome past limitations of conventional portable heat technologies precluding the need for joule heating. The challenge addressed in this proposal will be to develop a complete portable catalytic infusion warmer, operating from either alcohol or logistic fuels, having a total dry weight of 1 pound or less, with regulated "on-demand" heat power up to 300 watts, and a liquid fuel shelf life greater than five years, offering turn-key operation and having comparable or lower cost than current solution. Starting with CDI's advanced form of flameless catalytic heat (AFCT), which is inherently well regulated, lightweight and compact, AFCT will be adapted to the special needs of emergency portable medical applications to achieve these substantially improved features.
BENEFITS	The ready availability of a portable, compact, high energy density and well-regulated catalytic heat source to warm infusion fluids, will significantly impact a wide variety of end user communities. The benefits include; simplifying and lowering the cost of supporting logistics by use of a commonly available liquid fuel, extending the shelf life of portable infusion warming units well beyond current battery operated units, and substantially reducing the weight and bulk of current portable infusion warmers. The successful completion of this SBIR will

	demonstrate to potential partners/licensees in the medical supply industry that precisely controlled portable catalytic heat can be an enabling technology in the emergency medical arena.
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