



Specialists in Rare Earth Magnets and Magnet Systems

Research Title: High Temperature High Energy Product Magnet Material

NEED & CUSTOMER REQUIREMENT

Need: Higher energy product magnet materials which can operate at high temperatures are needed to further advance engine environment actuators and power generation, lubricant free bearings, electric spacecraft propulsion.

Operational Gap: Present Samarium Cobalt technology can operate to 400°C with performance of 24 MGOe at 25°C and 16.5 MGOe and 6.5 MGOe at 550°C

Customer Specifications: Operation with room temp performance of 30 MGOe at 400°C

Technology Description: Novel nanocomposite material techniques are being developed to advance state of art of rare earth magnet materials

SPONSORSHIP

Agency: Air Force (AFRL)

Partners: University of Delaware

TPOC (COTR): Howard 703-xxx-xxxx



TECHNOLOGY DEVELOPMENT MILESTONES (SBIR)

Milestones	TRL	Measure of Success	TRL Date
material feasibility	3	lab work indicates nanocomposite approach feasibility to improve	5/1/2006
nano coatings	3	critical step of iron nano particles coating larger grains achieved	4/1/2007
lab demo	4	Establish lab techniques for 400°C 30 MGOe magnet material	12/15/2008
Open Contracts: Air Force SBIR Phase II FA9550-07-C-029			

TECHNOLOGY TRANSITION OPPORTUNITIES

The company is looking for transition opportunities and program dollars for the following applications and targeted activities:

TRL	Required Test and Demos	Target Date	\$ Needed
5	Development of production processes	1/1/10	\$300K
5	Testing and graded layer barrier development for air & vacuum at over 400°C	1/1/10	\$500K
6	Application of magnet material in military electromagnetic system	1/1/12	\$700K

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