

MUREP Small Business Technology Transfer (M-STTR) Planning Grants

Title: Advanced Materials for Thermal Control Devices via Additive Manufacturing

Institution: University of Arizona

City/State: Tucson, AZ

PI: Dr. Andrew Wessman

SUMMARY: The University of Arizona, partnering with Nano Materials International Corporation, proposes to explore the possible benefits of using aluminum-diamond composite materials for the construction of thermal management devices such as heat pipes used in small spacecraft. The improved strength and thermal conductivity of aluminum-diamond materials would allow or the construction of more compact, lighter weight heat pipes while providing the same heat transfer capabilities. To take maximum advantage of this material, the University of Arizona will develop the technology needed to additively manufacture (3D print) heat transfer devices with complex geometries for further improved performance. This planning grant will enable the partnership to develop the research plan, seek partners for the production of raw materials, and develop a viable commercialization strategy for bringing the material to market.