DOE SBIR and STTR
FISCAL YEAR 2010 PHASE II GRANT AWARDS
BY STATE

(Back to SBIR Awards Page)

AL CA CO CT DE GA IL MA MD MI MN MT
NC NJ NM NY OH OR PA TN TX VA WA

ALABAMA

Company
Streamline Automation, LLC 3100 Fresh Way SW Huntsville, AL 35805
Topic
Production of Biofuels from Biomass
Title
High-Efficiency Microalgae Biofuel Harvest and Extraction Using Ionic Liquids
Summary
This project will develop a new biomass processing technology that can lower the price of renewable transportation fuels 10- times or more without any drawbacks. This key breakthrough will directly help the US reach energy independence and curb greenhouse gas emissions.

CALIFORNIA

Company
RadiaBeam Technologies LLC 1717 Stewart Street Santa Monica, CA 90404-4021
Topic
Technology to Support BES User Facilities
Title
A High-Resolution Transverse Diagnostic Based on Fiber Optics
Summary
This project will develop a diagnostic for advanced accelerator facilities that will profile electron beam distributions with extremely high-resolutions.

Company	Topic
XIA, LLC 31057 Genstar Road Hayward, CA 94544-7831	Instrumentation for Materials Research Using Synchrotron Radiation
Title	
Electronics for Large Superconducting Tunnel Junction Detector Arrays for Synchrotron Soft X-ray Research	
Summary	
This project will develop low cost digital electronics to support large arrays of cryogenic detectors used to detect and measure the energy of very low energy x-rays. These detectors will be used at the nation's synchrotron x-ray facilities to support research in materials science, biology, geology and environmental science.	

Company	Topic
XIA, LLC 31057 Genstar Road Hayward, CA 94544-7831	Instrumentation for Materials Research Using Synchrotron Radiation
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Company	Topic
Membrane Technology and Research, Inc. 1360 Willow Road, #103 Menlo Park, CA 94025-1524	Energy Efficient Membranes
Title	
Acetic Acid Recovery Using Membranes	
Summary	
This project will develop a membrane technology that will lower the energy costs of acetic acid recovery by at least 50%.	

Company	Topic
Allopartis Biotechnologies 1700 4th St, 219 Byers Hall, UCSF MC2522 San Francisco, CA 94158	Catalysis
Title	
Pre-Production Optimization of Cellulolytic Enzymes	
Summary	
This project will develop a revolutionary, capital efficient approach to boost the activity of the enzymes that are used to convert biomass into fermentable sugars. This will lower the cost of sustainable, domestically produced cellulosic biofuels.	

STTR Project	
Company	**Topic**
InnoSense LLC 2531 W. 237th Street Suite 127 Torrance, CA 90505-5245	Catalysis
Title	
Direct Conversion of Carbon Dioxide to Methanol	
Summary	
This project will develop and demonstrate the viability of producing methanol using inexpensive photoelectrodes powered by solar energy to: (1) sequester carbon dioxide, (2) provide an alternative fuel source, and (3) reduce our nation’s dependency on foreign oil. Although carbon dioxide is a greenhouse gas, it is a versatile industrial gas, and can be used in numerous processes and applications.	

Company	Topic
Farasis Energy, Inc. 23575 Cabot Blvd.,Suite 206 Hayward, CA 94545-1657	Technologies Related to Energy Storage for Hybrid and Plug-In Hybrid Electric Vehicles
Title	
Novel High Performance Li-ion Cells	
Summary	
This project will develop a novel approach to increasing the performance and capacity of Li-ion cells. Use of the technology could accelerate the adoption of efficient distributed power systems and EVs by greatly increasing the life of the battery systems.	

Company	Topic
Los Gatos Research 67 East Evelyn Avenue , Suite 3 Mountain View, CA 94041-1529	Energy Savings Technologies for Commodity Manufacturing Industries

Title
Real-Time Industrial Sensors for Process Control
Summary
This project will develop an optical sensor that will enable glass furnace and other industrial natural gas burners to automatically adjust and optimize their flames. The smart burner technology promises to make gas-fired industrial furnaces cleaner and more fuel efficient.

Company	Topic
Redwood Systems, Inc. 3839 Spinnaker Court Fremont, CA 94538-6537	Increasing Efficiency in Traditional Lighting Technologies
Title	
Networked Lighting Power and Control Platform for Solid State Lighting in Commercial Office Applications	
Summary	
This Project will develop a new, energy efficient LED lighting system that revolutionizes how lighting is powered and controlled. Borrowing technologies from the Internet, a lighting network will be created that is intelligent, automated, scalable, and can potentially save 50% to 75% of the energy used to light a commercial office space.	

Company	Topic
Ebert Composites Corporation 651 Anita St., STE B8 Chula Vista, CA 91911	Wind Energy Technology Development
Title	
Tapered Composite Wind Turbine Tower Utilizing CNC-Machined Pultruded Lineals	
Summary	
This project will develop a hybrid composite wind turbine tower that meets industry needs, and will outperform traditional steel, improving weight and corrosion resistance. These towers will offer a support for very large off-shore installations.	

Company	Topic
Physical Optics Corporation 20600 Gramercy Place, Bldg. 100 Torrance, CA 90501-1821	Geothermal Technologies
Title	
Fiber Optic High Temperature Seismic Sensor	
Summary	
This project will develop an innovative seismic sensor based on fiber optics to monitor geothermal wells, making them safer and easier to locate. This sensor will outperform all conventional devices in terms of temperature endurance and fast response.	

Company	Topic
SVV Technology Innovations, Inc. 1832 Tribute Rd, Ste C Sacramento, CA 95815-4309	Solar Energy
Title	
Concentrator PV Receiver Based on Crystalline Si Cells	
Summary	
This project will develop and demonstrate a new approach for making inexpensive modular systems for generating electricity from sunlight. It will make viable the large-scale, distributed energy production from renewables and help meet the national goals of energy independence, reduction of carbon emissions and fostering the job growth and economic progress.	

Company	Topic
EVOGH, Inc. 1876 Braeburn RD Altadena, CA 91001	High Energy Physics Computer Technology
Title	
EVO-HD: A Globally Scalable Standards-based Full-HD Environment for Immersive Collaboration	
Summary	
This project will develop EVO-HD, a low cost, extensible, globally scalable High Definition (HD) standards-based multimedia collaboration system to work over existing and future generation networks, which will be packaged for widespread corporate, research, and in-home use.	

Company	Topic
FAR-TECH, Inc. 3550 General Atomics Ct, Building 15 Suite 155 San Diego, CA 92121-1122	Nuclear Physics Accelerator Technology
Title	
An Energy-Efficient RF Power Source for the Jefferson Laboratory CEBAF Linac	
Summary	
This project will build and test a more modern and energy-efficient amplifier to replace the aging klystron technology used to power an accelerator complex.	

Company	Topic
Telescent Inc. 2118 Wilshire Blvd. #1001 Santa Monica, CA 90403-5784	High Performance Networks
Title	
Physical Layer Network Management Tools Based on Automated Fiber Optic Patch-Panels	
Summary	
This project will develop an advanced fiber optic switching technology that automates the provisioning and testing of fiber optic communications networks. This technology automatically reconfigures, monitors, and maps all physical interconnections through network management software, reducing operating costs while improving network efficiency, agility, and reliability.	

Company	Topic
Telescent Inc. 2118 Wilshire Blvd. #1001 Santa Monica, CA 90403-5784	High Performance Networks
Title	
RFID Overlay Network for Automated Discovery at the Physical Network Layer	
Summary	
This project will develop an RFID overlay network that automates the discovery of the physical network layer forming the foundation of all communication networks. Using resonant energy transfer, fiber optic connections are automatically monitored and mapped through software, reducing the operating cost and downtime, while accelerating service provisioning and improving security and disaster recovery.	

Company	Topic
Calabazas Creek Research, Inc. 690 Port Drive San Mateo, CA 94404-1010	Fusion Science and Technology
Title	
Development of a 2 MW CW Waterload for Electron Cyclotron Heating Systems	
Summary	
This project will develop the high power waterload necessary to meet the U.S. obligation to the ITER program for fusion energy research. It will also provide a waterload for other fusion facilities around the world.	

Company	Topic
Space Computer Corporation 12121 Wilshire Boulevard, Suite 910 Los Angeles, CA 90025-1123	Remote Sensing
Title	
Spectrally-Assisted Tracking of Moving Vehicles	
Summary	
This project will combine hyperspectral color signature matching techniques with existing spatial trackers into a generalized spatial-spectral tracking prototype framework, thereby eliminating the challenges associated with the long-term surveillance and tracking of target vehicles in urban environments.	

STTR Project	
Company	**Topic**
Opto-Knowledge Systems, Inc. (OKSI) 19805 Hamilton Ave. Torrance, CA 90502-1341	Remote Sensing
Title	
Single Mode Long-Wave Infrared (LWIR) Waveguides	
Summary	
This project will develop a new line of fiber optics that can improve the utility and effectiveness of laser systems used to detect specific chemical compounds and molecules. Such improvements are important in efforts to prevent the proliferation of weapons of mass destruction.	

Company	Topic
RadiaBeam Technologies LLC 1717 Stewart Street Santa Monica, CA 90404-4021	Alternative Radiological Sources
Title	
Compact, Electronic Blood Irradiator	
Summary	
This project will develop a safe, compact, electronic blood irradiator to effectively replace the Cs-137 blood irradiators in the US, as recommended by the National Research Council.	

COLORADO

Company	
Boulder Precision Electro-Optics 5733 Central Ave Boulder, CO 80301-2848	
Topic	
Ancillary Technologies for Accelerator Facilities	
Title	
A Laser Power-Build-Up System for H Atom Ionization	
Summary	
This project will build a prototype cavity, and lock a high-power pulsed laser to the cavity to attain MW peak pulse powers. This will quantify the mode distortion from absorbed power, and examine the performance of different mirror coatings. Attention to the materials used and the design will allow ultra-high vacuum cleaning techniques to be used to avoid mirror contamination issues.	

Company	Topic
Eltron Research & Development Inc. 4600 Nautilus Court South Boulder, CO 80301-3241	Coal Gasification Technologies
Title	
Molecular Separations Using Micro-Defect Free Ultra Thin Films	

Summary
This project will develop a thin film molecular sieve technology that will make the separation of CO2 and other kinds of molecules much cheaper. This will be of great use to pharmaceutical and chemical industries, in addition to energy industries.

Company	Topic
Eltron Research & Development Inc. 4600 Nautilus Court South Boulder, CO 80301-3241	Oil and Gas Technologies
Title	
Unconventional High Temperature Nanofiltration for Produced Water Treatment	
Summary	
This project will develop a proprietary high temperature nanofiltration technology that will remove salt and other dissolved solids from produced water originating from domestic oil and gas production. Treated water can be re-used in the extraction process without cooling/re-heating costs or can be recycled as an acceptable supply of source water.	

Company	Topic
Kapteyn-Murnane Laboratories, Inc. 1855 South 57th Court Boulder, CO 80301	Ancillary Technologies for Accelerator Facilities
Title	
Development of High Efficiency High Average Power Picosecond (10-50ps) Laser for High Repetition Frequency Electron Guns.	
Summary	
This project will develop a prototype 2 MHz picosecond amplified laser to meet the needs of FEL photocathodes. This requires a state-of-the-art cryogenically cooled, amplified laser system to meet the goals of the photoinjector laser.	

Company	Topic
TDA Research, Inc. 12345 W. 52nd Ave. Wheat Ridge, CO 80033-1916	Catalysis
Title	
Novel Catalytic Alkane Oxidation Process	
Summary	
This project will develop a new catalytic process that produces ethanol more cheaply than current synthetic processes and can be used in existing petrochemical plants. Ethanol, primarily made from corn, is a versatile chemical that is used as a chemical solvent, a sterilizer, an antifreeze, a chemical intermediate, and an oxygenate in fuels.	

Company	Topic
TDA Research, Inc. 12345 W. 52nd Ave. Wheat Ridge, CO 80033-1916	Solar Energy
Title	
A New Three-Part Architecture for Efficient and Stable Bulk Heterojunction OPV Devices	
Summary	
This project will develop a new combination of materials that will simultaneously increase the efficiency and the stability of organic solar cells so that they become suitable for commercialization.	

Company	Topic
Tech-X Corporation 5621 Arapahoe Ave Boulder, CO 80303-1379	Ancillary Technologies for Accelerator Facilities

Title
High Fidelity Simulation of Low-Energy Ion Beam Chopping for the Spallation Neutron Source
Summary
This project will develop enhanced software which will be used to reduce risk and cost for planned experiments at Oak Ridge National Laboratory as part of the upgrade to the Spallation Neutron Source.

Company	Topic
Tech-X Corporation 5621 Arapahoe Ave Boulder, CO 80303-1379	High Energy Physics Computer Technology
Title	
QuAI - A Quality Assurance Infrastructure for Data-Centric Applications	
Summary	
This project will develop develop a customizable and secure infrastructure that provides quality assurance in distributed data processing for large HEP and NP experiments and NASA missions.	

Company	Topic
Tech-X Corporation 5621 Arapahoe Ave Boulder, CO 80303-1379	Nuclear Physics Accelerator Technology
Title	
High-Fidelity Modulator Simulations of Coherent Electron Cooling Systems	
Summary	
This project will develop high-performance software for the Electron Ion Collider to assist DOE scientists in the design of an electron cooling section that will enable such a facility to meet performance requirements.	

Company	Topic
Tech-X Corporation 5621 Arapahoe Ave Boulder, CO 80303-1379	Software Libraries and Applications Maintenance and Scaling to Petascale
Title	
Extending Chombo with PETSc	
Summary	
This project will interface an existing highly scalable and efficient library (Chombo) to a library of solvers (PETSc) for improved numerical robustness.	

Company	Topic
Tech-X Corporation 5621 Arapahoe Ave Boulder, CO 80303-1379	Fusion Science and Technology
Title	
Parallel Validation Tools for Fusion Simulations	
Summary	
This project will develop software that will facilitate the testing of codes against experiments, which will lead to improved forecasting of fusion experiments. Better forecasting of fusion experiments gives greater confidence that ITER will succeed, and enable improved fusion performance.	

Company	Topic
Tech-X Corporation 5621 Arapahoe Ave Boulder, CO 80303-1379	High Energy Density Laboratory Plasma (HEDLP)
Title	
Plasma Jet Modeling for MIF	

Summary
This project will explore (through computer models) an emerging fusion concept while improving plasma modeling tools. This is one step toward realizing the potential of nuclear fusion to produce clean, inexpensive energy for the United States.

CONNECTICUT

Company
Omega-P, Inc. 258 Bradley St., 2nd fl. New Haven, CT 06510-1106
Topic
Accelerator Technology for the International Linear Collider
Title
Electron Gun and Beam Collector for a FOR A 10-MW, 1.3-GHz, Low-Voltage, Multi-Beam Klystron
Summary
This project will develop high-power, multi-beam klystrons that should lower cost and complexity for a future electron-positron collider, and also open up commercial applications with improved clinical accelerators and industrial processors. The ability for future machines to operate at higher energies than can be reached at present will allow for progress in elementary particle high-energy physics.

Company	Topic
Omega-P, Inc. 258 Bradley St., 2nd fl. New Haven, CT 06510-1106	Accelerator Technology for the International Linear Collider
Title	
RF Cavity Chain and Magnetic Circuit for a 10-MW, 1.3-GHz, Low-Voltage, Multi-Beam Klystron	
Summary	
This project will develop high-power, multi-beam klystrons that lower cost and complexity for a future electron-positron collider, and that also open up commercial applications with improved clinical accelerators and industrial processors.	

STTR Project	
Company	**Topic**
Omega-P, Inc. 258 Bradley St., 2nd fl. New Haven, CT 06510-1106	Radio Frequency Accelerator Technology for High Energy Accelerators and Colliders
Title	
Anti-Breakdown Coatings for High-Gradient Accelerator Structures	
Summary	
This project will develop high-gradient cavities that allow structures to sustain higher electric fields without breakdown, thus enabling operation at higher energy. This technology will advance progress in elementary particle high-energy physics, as well as open up commercial applications with improved clinical accelerators.	

Company	Topic
Proton Energy Systems 10 Technology Drive Wallingford, CT 06492-1955	Hydrogen, Fuel Cells, and Infrastructure Technologies
Title	
Hydrogen by Wire Home Fueling System	
Summary	
This project will develop a high pressure hydrogen system that eliminates major noise pollution and frequent maintenance requirements. It is also an attractive option for backup power when integrated with a PEM fuel cell and has advantages over batteries in factors such as available life and safety.	

Company	Topic
R&D Dynamics Corporation 49 West Dudley Town Road Bloomfield, CT 06002-1421	Advanced Materials and Technologies for Cooling and Waste Heat Recovery
Title	
High Efficiency R744 Centrifugal Chiller	
Summary	
This project will develop a high efficiency carbon dioxide centrifugal chiller cycle that will replace the current cycles that use strong greenhouse chemical refrigerants. The new chiller cycle will use 73% less power then current carbon dioxide cycles in the case of 150 ton capacity chillers.	

Company	Topic
SupraMagnetics, Inc. 214 Canal Street Plantsville, CT 06479-1742	High-Field Superconductor and Superconducting Magnet Technologies for High Energy Particle Colliders
Title	
A Novel Quaternary Low-Cost PIT Nb3Sn Conductor for HEP Magnet Applications above 12 Tesla	
Summary	
This project will develop a new economical Nb3Sn superconductor with advanced performance for high field magnets utilized in high energy physics research, fusion machines, and MRI and NMR instruments.	

Company	Topic
SupraMagnetics, Inc. 214 Canal Street Plantsville, CT 06479-1742	Advanced Sources for Accelerator Facilities
Title	
Extrudable NbTi Superconductor with Ferromagnetic Pins for Undulator Magnets	
Summary	
This project will develop a new, economical, NbTi superconductor with advanced performance. This superconductor will be used for undulator magnets, as well as MRI and NMR instruments.	

DELAWARE

Company
Compact Membrane Systems, Inc. 335 Water Street Newport, DE 19804-2410
Topic
Energy Efficient Membranes
Title
Novel Ethanol Dehydration Membranes
Summary
This project will develop a low-cost and energy-saving membrane based process to remove water from ethanol for fuel grade applications.

Company	Topic
Compact Membrane Systems, Inc. 335 Water Street Newport, DE 19804-2410	Energy Efficient Membranes
Title	
Novel Membranes for Enhancing Value of Bio-Oil	
Summary	
This project will develop a highly economical membrane separation to remove undesirable compounds from bio-oil to improve its quality and stability. Bio-oil is a renewable fuel, but quality and stability of raw bio-oil has to be improved in order to use it as a fuel in engines, gas turbines and boilers, and as a refinery feedstock to produce transport fuel.	

GEORGIA

STTR Project
COMPANY
Polymer Aging Concepts, Inc. 372 River Drive Dahlonega, GA 30533-5248
Topic
Advanced Technologies for Nuclear Energy
Title
Nanotechnology-Based Condition Monitoring Sensors for Generation IV Electrical Insulation Systems
Summary
This project will develop advanced nanotechnology materials which will improve the performance and durability of a new class of sensors that detect degradation of electric cable and motor insulation in harsh environments such as nuclear power plants, allowing replacement before failure. This sensor technology has applications in new automotive, aerospace and green technologies

ILLINOIS

Company
MicroLink Devices, Inc. 6457 West Howard St Niles, IL 60714-3301
Topic
Solar Energy
Title
Backside Contact Multijunction Solar Cells for High Concentration Applications
Summary
This project will develop a novel method for producing solar cells in which all electrodes are formed on the backside of the cell. This will increase the efficiency of solar cells used for power generation.

STTR Project	
Company	**Topic**
Muons, Inc. 552 N. Batavia Ave Batavia, IL 60510	Advanced Sources for Accelerator Facilities
Title	
H-Ion Sources for High Intensity Proton Drivers	
Summary	
This project will develop a device to produce H- ions in order to enable higher intensity beams with better reliability and improved efficiency for many powerful particle accelerators used in science, industry, and homeland defense.	

Company	**Topic**
Muons, Inc. 552 N. Batavia Ave Batavia, IL 60510	Ancillary Technologies for Accelerator Facilities
Title	
Beam Pipe HOM Absorber for 750 MHz RF Cavity Systems	
Summary	
This project will construct low cost, reliable, ferrite microwave absorber assemblies. These assemblies will be used in vacuum systems in the presence of charged particle beams.	

STTR Project	
Company	**Topic**
Muons, Inc. 552 N. Batavia Ave Batavia, IL 60510	Ancillary Technologies for Accelerator Facilities

Title
High Power Co-Axial SRF Coupler
Summary
This project will improve co-axial window technology by using new materials and techniques. This improved technology will transfer RF power from sources to RF cavities at very high levels, and therefore meet the demands of intense light sources used for science and industry.

Company	Topic
Muons, Inc. 552 N. Batavia Ave Batavia, IL 60510	Advanced Concepts and Technology for High Energy Accelerators
Title	
Quasi-Isochronous Muon Collection Channels	
Summary	
This project will develop new ways to collect large numbers of muons and to form them rapidly into bright beams, thereby overcoming the disadvantage of their short lifetime and allowing many commercial and scientific uses, including applications such as muon colliders.	

STTR Project	
Company	**Topic**
Muons, Inc. 552 N. Batavia Ave Batavia, IL 60510	Nuclear Physics Accelerator Technology
Title	
Phase and Frequency Locked Magnetrons for SRF Sources	
Summary	
This project will develop magnetrons with much improved phase stability and frequency characteristics.	

MASSACHUSETTS

Company	
Aerodyne Research, Inc. 45 Manning Road Billerica, MA 01821-3976	
Topic	
Carbon Cycle Measurements of the Atmosphere and the Biosphere	
Title	
High Precision C0S Monitor to Constrain the Partitioning of C02 Fluxes	
Summary	
This project will develop a novel instrument for carbonyl sulfide which can be used to assess global budgets for CO2 uptake by plants. Measuring global carbon dioxide uptake by vegetation will allow for better understanding of global climate change.	

Company	Topic
Aerodyne Research, Inc. 45 Manning Road Billerica, MA 01821-3976	Atmospheric Measurement Technology
Title	
Development and Characterization of a Compact Aerosol Chemical Speciation Monitor (ACSM)	
Summary	
This project will develop an instrument with unique capabilities for identifying and measuring the organic precursors of aerosol particles, leading to a better understanding of the sources, transformations, and fates of atmospheric particulate matter which can adversely impact global climate, human health, and visibility.	

Company	Topic
Aerodyne Research, Inc. 45 Manning Road Billerica, MA 01821-3976	Atmospheric Measurement Technology
Title	
Volatility Resolved Measurements of Total Gas-Phase Organic (TGO) Compounds by High Resolution Electron Impact Mass Spectrometry	
Summary	
This project will develop an instrument with unique capabilities for identifying and measuring the organic precursors of aerosol particles, leading to a better understanding of the sources, transformations, and fates of atmospheric particulate matter which can adversely impact global climate, human health, and visibility.	

STTR Project	
Company	**Topic**
Aerodyne Research, Inc. 45 Manning Road Billerica, MA 01821-3976	Carbon Cycle Measurements of the Atmosphere and the Biosphere
Title	
An Absolute C02 Monitor with Extremely High Accuracy	
Summary	
This project will design a novel, commercial monitor with unsurpassed accuracy and unique capability to be deployed worldwide. This monitor will accurately measure carbon dioxide across the globe, which will assist the understanding of global climate change.	

STTR Project	
Company	**Topic**
Concepts NREC 39 Olympia Avenue Woburn, MA 01801-2073	Advanced Water Power Technology Development
Title	
Development of a Self-Adaptive Air Turbine for Wave Energy Conversion using an Oscillaating Water Column (OWC) Air System	
Summary	
This project will develop a Turbine Shutter Valve and OWC Height control, which will make the utilization of the world’s oceans as a renewable energy resource more economical.	

Company	Topic
EIC Laboratories, Inc. 111 Downey Street Norwood, MA 02062-2612	Improved Characterization of Waste in Tanks and Ancillary Piping
Title	
Development of a Compact Fiber Optically Coupled Raman Telescope for the In Situ Standoff Characterization of Residual Wastes	
Summary	
This project will develop a fiber optically coupled Raman probe telescope that will be able to detect and identify chemicals at a standoff distance. The telescope Raman probe will be used as a characterization tool for residual wastes in nuclear waste storage tanks.	

STTR Project	
Company	**Topic**
EIC Laboratories, Inc. 111 Downey Street Norwood, MA 02062-2612	Improved Characterization of Waste in Tanks and Ancillary Piping
Title	
An Integrated In Situ Raman and Turbidity Sensor for High Level Waste Tanks	

Summary
This project will develop a sensor that can be placed in high level nuclear waste storage tanks to continuously monitor the chemical composition to ensure safe and environmentally compliant operation. This technology will also eliminate the need for expensive, time consuming, and hazardous sampling and laboratory analysis.

Company	Topic
FloDesign Inc. 380 Main Street Wilbraham, MA 01095	Advanced Water Power Technology Development
Title	
MECT, The Next Generation Hydrokinetic Turbine	
Summary	
This project will develop a new, novel water turbine technology through extensive laboratory and open water testing. Its performance and structural breakthroughs will assure the economic viability of hydrokinetic water turbines for application in rivers/streams, tidal currents, and ocean currents, thereby helping transform and accelerate this energy sector toward becoming a significant contributor of electricity in the US renewable energy portfolio.	

Company	Topic
Giner Electrochemical Systems, LLC 89 Rumford Avenue Newton, MA 02466-1311	Hydrogen, Fuel Cells, and Infrastructure Technologies
Title	
Unitized Design for Home Refueling Appliance for Hydrogen Generation to 5000 psi	
Summary	
This project will develop a “unitized” electrolyzer design that can be used as a home refueling appliance and will result in a safe, high efficiency, low capital cost system that will provide competitively-priced hydrogen for fuel-cell vehicles.	

Company	Topic
MagiQ Technologies 11 Ward Street Somerville, MA 02143	Geothermal Technologies
Title	
Seismic Sensor	
Summary	
This project will use ultra-sensitive optical measurement techniques to develop a technique intended to help geologists map the micro-scale tremors of rocks in order to harness geothermal energy.	

STTR Project	
Company	**Topic**
NEMOmetrics Corp. 3 Tremont St, Suite 202 Charlestown, MA 02129-3108	Increasing Efficiency in Traditional Lighting Technologies
Title	
Lighting with No Watt Left Behind	
Summary	
This project will develop inexpensive, easy to install technology that will use lights themselves to detect occupancy, turn off lights, and substantially reduce wastage, eliminating the large amounts of energy consumed and wasted by lighting unoccupied or under-occupied buildings.	

Company	Topic
Physical Sciences Inc. 20 New England Business Center Andover, MA 01810-1077	Carbon Cycle Measurements of the Atmosphere and the Biosphere

Title
Highly Compact CO2 Sensor for Balloon Deployment
Summary
This program will develop a sensor for routine monitoring of CO2 from balloons and small aircraft. The increase in the accuracy of measurements of various trace species in the atmosphere will allow for better models of global climate change, which in turn could affect policy decisions relating to energy utilization.

STTR Project	
Company	**Topic**
Physical Sciences Inc. 20 New England Business Center Andover, MA 01810-1077	Carbon Cycle Measurements of the Atmosphere and the Biosphere
Title	
Development of a Fieldable Soil Carbon Monitor	
Summary	
This project will develop a small, rugged, fieldable monitor for soil carbon. The overall goal of the program is to establish feasibility of a detector that will help assess management strategies for the sequestration of carbon dioxide in soil.	

STTR Project	
Company	**Topic**
Physical Sciences Inc. 20 New England Business Center Andover, MA 01810-1077	Climate Control Technology for Fossil Energy Application
Title	
Networked Sensors for Sequestration MVA	
Summary	
This project will develop, test, install, and evaluate laser-based sensors for use as tools to monitor the integrity of carbon dioxide sequestration sites and pipelines. These tools will reduce the cost of site operation and verify that sequestration performs the intended function of reducing greenhouse gas emissions.	

Company	**Topic**
RadiaBeam Technologies LLC 1717 Stewart Street Santa Monica, CA 90404-4021	Advanced Concepts and Technology for High Energy Accelerators
Title	
An Inexpensive High Brightness Photoinjector using Solid Free Form Fabrication (SFF)	
Summary	
This program will develop a high average power, high brightness electron gun manufactured with innovative, cost cutting techniques. This promises to be a key enabling technology for imaging and analysis applications of interest to homeland security as well as industrial and academic programs.	

Company	**Topic**
Radiation Monitoring Devices, Inc. 44 Hunt Street Watertown, MA 02472-4699	Technology to Support BES User Facilities
Title	
Bright Quantum Dot Scintillator for High Frame Rate Imaging	
Summary	
This project will develop a scintillator that will enable advanced research, improved homeland protection, and the rapid, cost-effective development of novel drugs.	

Company	Topic
Radiation Monitoring Devices, Inc. 44 Hunt Street Watertown, MA 02472-4699	Instrumentation for Electron Microscopy and Scanning Probe Microscopy
Title	
High Bandwidth Optical Detector for Scanning Probe Microscopy	
Summary	
This project will develop a unique instrument that can be used to help characterize and manipulate nanoscale materials. This instrument will be used in areas of scientific study such as renewable energy, cancer detection, and environmental clean-up.	

Company	Topic
Radiation Monitoring Devices, Inc. 44 Hunt Street Watertown, MA 02472-4699	Instrumentation for Materials Research Using Synchrotron Radiation
Title	
Fast, Photon Counting Detector Arrays with Internal Gain	
Summary	
This project will investigate a new x-ray radiation detector design that will advance scientific studies, as well as have commercial applications.	

Company	Topic
Radiation Monitoring Devices, Inc. 44 Hunt Street Watertown, MA 02472-4699	Instrumentation for Materials Research Using Synchrotron Radiation
Title	
Low Cost, High Speed, High Sensitivity Detector for Material Science Studies	
Summary	
This project will develop a detector that can allow further utilization of advanced photon sources. In addition to unveiling basic functions of biological systems, this development will have a direct impact on important applications, such as baggage scanning and homeland security.	

Company	Topic
Radiation Monitoring Devices, Inc. 44 Hunt Street Watertown, MA 02472-4699	Imaging, Radiochemistry, and Artifical Retina
Title	
Dual Modality Small Animal Imaging	
Summary	
This project will develop a promising detector technology which will have a major impact in scientific studies, health care, homeland defense, and oil exploration, as well as have industrial applications.	

Company	Topic
Radiation Monitoring Devices, Inc. 44 Hunt Street Watertown, MA 02472-4699	Imaging, Radiochemistry, and Artifical Retina
Title	
New Detectors for Small Animal SPECT	
Summary	
This project will investigate a promising nuclear detector material which will have major impact in scientific studies, medical imaging, homeland defense, and oil exploration, as well as in industrial applications.	

Company	Topic
Radiation Monitoring Devices, Inc. 44 Hunt Street Watertown, MA 02472-4699	Imaging, Radiochemistry, and Artifical Retina
Title	
Next Generation SPECT Detectors	
Summary	
This project will continue to develop detector technology for Single Photon Emission Computed Tomography (SPECT), a powerful, noninvasive medical imaging modality that mathematically reconstructs the three dimensional distribution of a radionuclide throughout the body of a human patient or research animal.	

Company	Topic
Spectral Sciences, Inc. 4 Fourth Avenue Burlington, MA 01803-3304	Energy Savings Technologies for Commodity Manufacturing Industries
Title	
Structured Emission Thermometry Sensor for Burner Control	
Summary	
This project will develop an optical sensor that will enable glass furnace and other industrial natural gas burners to automatically adjust and optimize their flames. The smart burner technology promises to make gas-fired industrial furnaces cleaner and more fuel efficient.	

Company	Topic
Supercon, Inc. 830 Boston Turnpike Shrewsbury, MA 01545-3301	High-Field Superconductor and Superconducting Magnet Technologies for High Energy Particle Colliders
Title	
A Modified Internal Tin Tube Nb3Sn Conductor for Higher Non-Copper Critical Current Density	
Summary	
This project will increase the performance of Nb3Sn conductors in order to attain the required high magnetic fields utilizing a novel materials approach.	

Company	Topic
Tiax, LLC. 35 Hartwell Avenue Lexington, MA 02140	Technologies Related to Energy Storage for Hybrid and Plug-In Hybrid Electric Vehicles
Title	
Implantation, Activation, Characterization and Prevention/Mitigation of Internal Short Circuits in Lithium-Ion Cells	
Summary	
This project will develop technology to improve the safety of lithium-ion batteries for PHEVs and HEVs, making these vehicle technologies more commercially viable, and thus increasing the likelihood that they will yield their potential environmental, economic and political benefits.	

Company	Topic
Weston Geophysical Corp. 181 Bedford St., Suite 1 Lexington, MA 02420-4430	Seismic Signal Analysis
Title	
A Software Toolbox for Systematic Evaluation of Seismometer-Digitizer System Responses	
Summary	
This project will develop and test Graphical User Interfaces (GUIs) that provide seismologists with easy access to software and databases in a system response recovery toolbox that can recover the sensor/digitizer response function from raw seismic data. It can then be easily used by seismologists to monitor the data quality recorded on worldwide seismic networks.	

Company	Topic
Yankee Environmental Systems, Inc. 101 Industrial Boulevard Turners Falls, MA 01376-1611	Atmospheric Measurement Technology
Title	
Oxygen A-Band Spectrometer	
Summary	
This project will develop a High Resolution Oxygen A-Band Spectrometer which will provide measurements that both validate atmospheric models and calibrate orbiting remote sensors for cloud and aerosol effects. This will reduce the scientific challenge of understanding long-term climate change by being able to precisely measure the scattering properties of clouds and aerosols in our atmosphere.	

MARYLAND

Company
Acadia Optronics, LLC 1395 Piccard Drive Suite 210 Rockville, MD 20850-4348
Topic
High Performance Networks
Title
FPGA-Based End-Station Security for High-Performance Networking
Summary
This project will develop and deploy a high-performance cyber-security platform designed to significantly enhance the security of next-generation networked computing.

STTR Project	
Company	**Topic**
Ionova Technologies, Inc. 182 Thomas Johnson Drive, Suite 204L Frederick, MD 21702	Technologies Related to Energy Storage for Hybrid and Plug-In Hybrid Electric Vehicles
Title	
3-D Nanofilm Asymmetric Ultracapacitor	
Summary	
This project will apply advances in nanotechnology to create a new ultracapacitor capable of storing significantly more energy, of scaling to the voltage needs of important new applications and of providing improvements in safety, cost, and environmental impact. This will eliminate the issues of low energy density, cost, and safety concerns that plague current generation ultracapacitors.	

Company	Topic
LightSpin Technologies, Inc. 4407 Elm Street Chevy Chase, MD 20815	High Energy Physics Detectors
Title	
Radiation Hard GaAs Photomultiplier Chip(TM)	
Summary	
This project will develop the world's most sensitive camera, able to withstand bombardment by the world's highest energy particle. This camera will help physicists probe the composition of matter, doctors peer into the body to find cancer early, and security experts to find illicit radioactive materials.	

Company	Topic
WebLib, LLC 5101 River Road, Apt. 1918 Bethesda, MD 20816-1574	Search, Discovery, and Communication of Scientific and Technical Knowledge in Distributed Systems
Title	
A Scalable Distributed Client Based Meta Search and Discovery Infrastructure	

Summary
This project will implement highly scalable and affordable next generation search and discovery capabilities to run inside the web browsers of individual users. This will allow the cost-effective implementation of many desirable Web search applications, such as tapping into the high quality educational content in DOE, NASA, NIH and other government scientific and technical databases for tens of millions of students and teachers in U.S. classrooms without the need for prohibitively costly server farms and network bandwidth.

MICHIGAN

Company
Niowave, Inc. 1012 North Walnut Street Lansing, MI 48906-5061
Topic
Nuclear Physics Accelerator Technology
Title
Development of a Tunable 28 MHz Superconducting RF Cavity for RHIC
Summary
This project will develop a new accelerating system for the Relativistic Heavy Ion Collider at Brookhaven National Lab, using the high fields possible in superconducting RF cavities. This will break new ground for low-frequency, tunable, superconducting RF structures.

STTR Project	
Company	**Topic**
Niowave, Inc. 1012 North Walnut Street Lansing, MI 48906-5061	Radio Frequency Accelerator Technology for High Energy Accelerators and Colliders
Title	
Development of a 400 MHz Superconducting RF Crabbing Cavity	
Summary	
This project will develop a new type of the superconducting deflecting cavity. This accelerator technology can be successfully used for broad applications in both circular as well as linear accelerators of charged particle beams.	

Company	Topic
OG Technologies, Inc. 4300 Varsity Drive, Suite C Ann Arbor, MI 48108	Energy Savings Technologies for Commodity Manufacturing Industries
Title	
SICS: A Sensor-Based In-Line Control System for the Surfaces of Continuously Cast Slabs	
Summary	
This project will develop a new product to improve current continuous casting practices with innovations in the areas of in-line inspection and advanced process control. The expected benefits include energy savings, improved yields, simplified processes, and reduced carbon dioxide release in the steel industry.	

MINNESOTA

Company
SVT Associates, Inc. 7620 Executive Drive Eden Prairie, MN 55344-3677
Topic
Advanced Concepts and Technology for High Energy Accelerators
Title
Robust GaN-Based Photocathodes for High-Current RF Electron Injectors

Summary
This project will develop high-efficiency and robust photocathodes based on gallium-nitride (GaN) semiconductors. In addition to their importance as high-brightness electron sources for research programs, these devices can be used as highsensitivity ultra-violet and visible detectors and imaging arrays, and have potential for successful commercialization of both high-performance electron emitters and sensitive photodetectors.

MONTANA

Company
Resodyn Corporation 130 North Main, Suite 600 Butte, MT 59701-1394
Topic
Wind Energy Technology Development
Title
An Advanced Vibrothermography Approach for Wind Turbine Applications
Summary
This project will develop a reliable, portable instrumentation deployment system to be utilized during wind turbine composite members manufacturing, delivery, and development. This method has the potential to reduce the yearly wind turbine maintenance costs dramatically making power to the consumer cost less per kWh.

NORTH CAROLINA

Company
3TEX, Inc. 109 MacKenan Drive Cary, NC 27511
Topic
Wind Energy Technology Development
Title
Improved Wind Blade Joints Based on 3D Fiber Architecture
Summary
This project will develop 3D fiber architecture joining elements for wind blades that will eliminate the most common failure area of the blades. This new architecture will provide up to two-fold increases in joint strength and will reduce the labor involved in wind blade manufacture.

NEW JERSEY

Company
Exelus, Inc. 110 Dorsa Ave Livingston, NJ 07039-1003
Topic
Catalysis
Title
Catalytic Processing of Biomass to Ethylene & Propylene
Summary
This project will develop a new, cost-effective, economically viable method for converting non-food biomass into large commodity petrochemicals such as ethylene and propylene.

Company	Topic
Exelus, Inc. 110 Dorsa Ave Livingston, NJ 07039-1003	Use of Algae for Fuels Production
Title	
Jet Fuels from Algae	

Summary
This project will develop a new, cost-effective method for converting algae into aviation fuel. It uses new chemistry and catalysts to produce clean, renewable jet fuel of identical quality to conventional fuels.

Company	Topic
Princeton Power Systems, Inc. 201 Washington Road, Building #2 Princeton, NJ 08540-6642	Advanced Water Power Technology Development
Title	
High-Voltage, Highly-Efficient, Power-Dense Electronic Converter Using Silicon Carbide and AC-link	
Summary	
This project will develop an advanced hydro and ocean power electronic conversion system that will significantly reduce the cost of these generation sources and make them more efficient and more compatible with the existing electric grid. This will displace polluting, fossil fuel-burning power generators with a clean, renewable energy source.	

Company	Topic
Structured Materials Industries, Inc. 201 Circle Drive North Unit 102 Piscataway, NJ 08854-3723	Advanced Materials and Technologies for Cooling and Waste Heat Recovery
Title	
NanoEngineered High ZT Solid State Nanocomposite Thermoelectric (ssnTE) Manufacturing for Multiple Energy Generation Applications	
Summary	
This project will apply new nano-enabled techniques to Thermoelectrics, a technology for the direct conversion of heat into electrical energy, which will produce dramatically improved operational efficiencies, thus realizing cost savings and improved energy utilization.	

Company	Topic
Universal Display Corporation 375 Phillips Blvd. Ewing, NJ 08618-1428	Solid State Lighting
Title	
Ultra High Efficiency 100 lm/W Phosphorescent White OLED Lighting Panel	
Summary	
This project will increase the efficacy of highly efficient solid state lighting based on phosphorescent organiclight-emitting devices, and thereby enable replacement of inefficient incandescent bulbs, which consume over 8% of the electricity produced in the United States. This will enable the development of high-efficiency, environment-friendly, solid-state, white-lighting sources.	

NEW MEXICO

Company	
Deep Web Technologies, LLC 301 N. Guadalupe, Suite 201 Santa Fe, NM 87501-5501	
Topic	
Search, Discovery, and Communication of Scientific and Technical Knowledge in Distributed Systems	
Title	
An Analysis of the Performance Bottlenecks in the Federated Search Information Flow	
Summary	
This project will develop performance improvements on the Phase I project, in which a number of potential bottlenecks in federated search technologies that hinder research in the public and private sectors were assessed.	

Company	Topic

Southwest Sciences, Inc. 1570 Pacheco Street, Suite E-11 Santa Fe, NM 87505-3993	Advanced Coal Research
Title	
NDE of Gas Turbine Thermal Barrier Coatings	
Summary	
This project will develop a technology that allows for non-destructive inspection of the thermal barrier coatings applied to power plant and aircraft engine turbine parts. This new technology will provide cost savings and improved operations to the gas turbine industry.	

NEVADA

Company	
Multi-Phase Technologies, LLC 310 Rebecca Dr. Sparks, NV 89441-7923	
Topic	
Climate Control Technology for Fossil Energy Application	
Title	
Wireless Electrical Resistivity Tomography System for CO2 Sequestration Monitoring	
Summary	
This project will develop a cost-effective method of monitoring CO2 sequestration reservoirs for potential leakage pathways and for reservoir integrity using Electrical Resistivity Tomography. This method will reduce the likelihood of local environmental impacts.	

NEW YORK

Company	
Dimension Technologies, Inc. 315 Mount Read Boulevard Rochester, NY 14611-1982	
Topic	
Scientific Visualization and Data Understanding	
Title	
2D Switchable/Multiview Autostereoscopic 3D Display	
Summary	
This project will develop a prototype desktop and large screen displays that produce high resolution 3D images which can be viewed without 3D glasses by scientists viewing complex multi-dimensional data sets or simulations. These displays could also be used in conference rooms and eventually home TV.	

Company	**Topic**
H2 Pump, LLC 11 Northway Lane North Albany, NY 12110	Hydrogen, Fuel Cells, and Infrastructure Technologies
Title	
Process Intensification of Hydrogen Unit Operations Using an Electrochemical Device	
Summary	
This project will develop a technology that is a simplified, multi-functional device which pumps, purifies, and pressurized hydrogen in a single, low cost, efficient, non-mechanical process.	

Company	**Topic**
MesoScribe Technologies, Inc. 7 Flowerfield Suite 28 Saint James, NY 11780-1514	Sensors and Controls for Fossil Energy Power Generation Systems
Title	
Development of Packaging and Integration of Sensors for On-Line Use in Harsh Environments	

Summary
This project will develop improved sensor packaging techniques for use in advanced power systems. The technology will enable steam turbines, boilers, and other critical components to be monitored and operated efficiently to prevent unforced shutdowns, reduce maintenance costs, and reduce emissions.

Company	Topic
Simmetrix, Inc. 10 Executive Park Drive Clifton Park, NY 12065-5630	Software Libraries and Applications Maintenance and Scaling to Petascale
Title	
Interoperable Components to Support Unstructured Mesh Simulations on Massively Parallel Computers	
Summary	
This project will support the reliable automatic generation and control of the computer representations used by software to perform complex physical simulations. Theses tools will execute automatically in seconds to minutes of computer time thus eliminating the hours to months of time of experts currently spend on such processes.	

Company	Topic
Underground Systems, Inc. 84 Business Park Drive, Suite 109 Armonk, NY 10504	Advanced Technologies for Electricity Systems
Title	
Adaptive Predictive Algorithms and Real-Time Decision Support Tools for Renewables Integration	
Summary	
This project will develop and implement software and visualization decision support tools to allow utilities to incorporate DLR in their operations. Advanced technologies are necessary to optimize the efficiency of the electric transmission grid for better renewables integration, and a Dynamic Line Rating (DLR) system could be used for this purpose.	

OHIO

Company
Energy Focus, Inc. 32000 Aurora Road Solon, OH 44139-2814
Topic
Increasing Efficiency in Traditional Lighting Technologies
Title
Arc Tube Coating System for Metal Halide Color Consistency
Summary
This project will develop an automated color modification system for metal halide lamps in a unique system to reduce their color variations to equal that of incandescent lamp.

Company	Topic
Euclid TechLabs, LLC 5900 Harper Rd. #102 Solon, OH 44139-1866	Accelerator Technology for the International Linear Collider
Title	
A New Quarter-Wave Coaxial Coupler For1.3 GHZ Superconducting Cavity	
Summary	
This project will develop new and more efficient techniques for providing energy to a superconducting accelerator.	

Company	Topic
Global Research and Development, Inc 539 Industrial Mile Road Columbus, OH 43212-1155	High-Field Superconductor and Superconducting Magnet Technologies for High Energy Particle Colliders

Title
High Count Restacks Nb3Sn using Subelements with over 3000 A/mm2 non-Cu Jc at 12T and 4.2K
Summary
This project will develop a much improved Nb3Sn superconductor wire for next generation High Energy Physics accelerator magnets. This will be accomplished by developing an improved Nb3Sn superconductor strand with a higher number of sub-elements in the restack billet.

Company	Topic
Hyper Tech Research, Inc. 539 Industrial Mile Road Columbus, OH 43228-2412	High-Field Superconductor and Superconducting Magnet Technologies for High Energy Particle Colliders
Title	
Development of MgB2 Current Distribution Systems for High Energy Particle Colliders	
Summary	
This project will develop an affordable, high-quality magnesium diboride superconductor for next generation High Energy Physics accelerator magnets and components.	

Company	Topic
Hyper Tech Research, Inc. 539 Industrial Mile Road Columbus, OH 43228-2412	Advanced Technologies and Materials for Fusion Energy Systems
Title	
High Jc, Low AC Loss Nb3Sn Superconductor for 14-20T Fusion Application	
Summary	
This project will develop a much improved, lower cost Nb3Sn superconductor wire for the DOE advanced Fusion Program will be developed concurrently.	

Company	Topic
MesoCoat, Inc. 24112 Rockwell Dr. Euclid, OH 44117-1252	Nanotechnology
Title	
Fused Nanocomposite Claddings for Oil and Energy Applications	
Summary	
This project will develop novel materials and processes capable of operating at elevated temperatures in high wear and corrosive environments, thereby eliminating the high temperature wear and corrosion that currently bar the ability to reach energy reserves.	

Company	Topic
NexTech Materials, Ltd. 404 Enterprise Drive Lewis Center, OH 43035-9423	Solid Oxide Fuel Cell Technology for Coal-Based Power Plants
Title	
Manufacturing Analysis of SOFC Interconnect Coating Processes	
Summary	
This project will develop new manufacturing techniques for coating metals in order to lower the cost and improve the durability of Solid Oxide Fuel Cells. These fuel cells will allow for more efficient use of fossil fuels, bio-fuels, and biomass, with less pollution compared to combustion approaches.	

Company	Topic
RNET Technologies, Inc. 240 West Elmwood Drive, Suite 2010 Dayton, OH 45459-4248	High Performance Networks

Title
Enhancement of GridFTP Performance Through GMPLS Integration and Hardware Offloading
Summary
This project will develop an application that improves file-transfer performance crucial to research projects. This project will implement several improvements, including hardware acceleration and integration of scheduling services to better utilize emerging networks.

OREGON

Company	
Galois, Inc. 421 SW Sixth Avenue, Suite 300 Portland, OR 97204-1629	
Topic	
Scalable Middleware and Grid Technologies	
Title	
Grid 2.0: Collaboration and Sharing on the Grid	
Summary	
This project will develop efficient online tools for scientists collaborating on the nation's grid computing infrastructure. This will allow support for users collaborating on grid computing systems. This project addresses the need to bring efficient, online tools to scientists collaborating on the nation's grid computing infrastructure.	

Company	Topic
Voxtel, Inc. 15985 NW Schendel Avenue, Suite 200 Beaverton, OR 97006-6703	Instrumentation for Materials Research Using Synchrotron Radiation
Title	
High-Dynamic-Range, Rad-Hard, Time-Resolved, Correlated X-Ray Photon Detector	
Summary	
This project will allow users of the X-ray beamline to conduct experiments faster, while also greatly improving the X-ray detectors' performance. This will reduce the time demand on the X-ray beamline, which is very expensive, as well as reduce pressure on existing infrastructure.	

PENNSYLVANIA

Company	
Advanced Cooling Technologies, Inc. 1046 New Holland Ave. Lancaster, PA 17601-5606	
Topic	
Advanced Materials and Technologies for Cooling and Waste Heat Recovery	
Title	
Nanofluids Enhanced Twisted Tape Heat Exchanger	
Summary	
This project will develop a high thermal performance heat exchanger that will be smaller, lighter, and require less energy to be provided to the accompanying pump than conventional heat exchangers. The commercialization of this technology will further create technical jobs and enable expansion into new markets.	

STTR Project	
Company	**Topic**
Advanced Cooling Technologies, Inc. 1046 New Holland Ave. Lancaster, PA 17601-5606	Advanced Materials and Technologies for Cooling and Waste Heat Recovery
Title	
Stabilization of Nanofluids Using Self Assembled Monolayers	

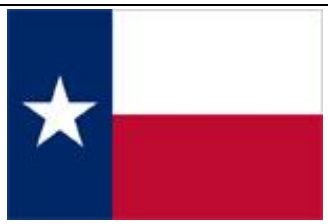
Summary
This project will develop nanofluids that have the capability of increasing heat transfer efficiency in many current heat exchangers by improving the heat transfer properties inherent to current coolants. Heat transfer is an important part of many energy intensive processes, and more efficient heat transfer leads to more efficient use of fuel.

TENNESSEE

Company	
Analysis and Measurement Services Co AMS Technology Center 9119 Cross Park Drive Knoxville, TN 37923-4510	
Topic	
Advanced Technologies for Nuclear Energy	
Title	
Advanced Techniques for On-Line Condition Monitoring and Diagnostics of Digital Rod Position Indication Systems for Existing and Next Generation Nuclear Power Plants	
Summary	
This project will enhance the digital rod position indication systems of existing and new nuclear reactors with diagnostic capabilities to provide better rod position information, component health, and automated rod drop time measurements. This can help reduce unplanned reactor trips and shorten refueling outage times.	

Company	Topic
PHDs Co. 777 Emory Valley Road, Suite B Oak Ridge, TN 37830-7048	Nuclear Physics Instrumentation, Detection Systems and Techniques
Title	
Segmented Rectifying and Blocking Contacts on Germanium Planar Detectors	
Summary	
This project will develop detector fabrication techniques that will provide the basis for more sensitive, reliable, and cost effective instruments for the detection of gamma rays in Nuclear Physics experiments.	

TEXAS

Company	
Applied Nanotech, Inc. 3006 Longhorn Blvd. Suite 107 Austin, TX 78758-7631	
Topic	
Nuclear Physics Instrumentation, Detection Systems and Techniques	
Title	
Carbon Stripper Foil for the Next Generation Rare Isotope Beam Facility	
Summary	
This project will continue to develop recent advances in carbon nanomaterials and low-cost manufacturing techniques to generate carbon foils that can be used current and future accelerators.	

Company	Topic
Blue Sky Electronics, LLC 401 Studewood, Ste 203 Houston, TX 77007-2733	Nuclear Physics Electronics Design and Fabrication
Title	
Electronics for Fast Vertex Position Measurement	
Summary	
This project will develop new electronics to quickly measure, process and distribute extremely fast timing measurements. It will increase the efficiency of particle collider experiments and provide an important building block for advanced instruments used in the life sciences, medical imaging, manufacturing, and environmental monitoring.	

Company	Topic
Saxet Surface Science 3913 Todd Lane, Suite 303 Austin, TX 78744-1057	Nuclear Physics Accelerator Technology
Title	
Improved Ion Resistance for III-V Photocathodes in High Current Guns	
Summary	
This project will test the limits of a chemically stabilized surface layer to withstand charged particle induced deterioration and to withstand electron stimulated recovery to act as a substitute for cesium dosing.	

VIRGINIA

Company	
David Wojick 391 Flickertail Lane Star Tannery, VA 22654-1908	
Topic	
Search, Discovery, and Communication of Scientific and Technical Knowledge in Distributed Systems	
Title	
Deployable Concepts for Discovery of Web Based STEM Education Content and Resources	
Summary	
This project will develop a toolkit that can be used to find federally funded science education content, as well as to create it.	

Company	Topic
Electrical Distribution Design, Inc. 311 Cherokee Drive Blacksburg, VA 24060	Advanced Technologies for Electricity Systems
Title	
Model-Based Renewable Resource Risk Assessment Analysis and Simulation	
Summary	
This project will combine leading model-based analysis capability and web-based renewable resource monitoring for development of a new operations management risk analysis, mitigation and visualization system. The new approach will be tested using full scale utility system models and data. The new system will be usable by itself at utilities with limited monitoring resources and as part of a fully integrated smart grid solution.	

Company	Topic
FM Technologies, Inc. 4431-H Brookfield Corporate Dr Chantilly, VA 20151-1691	Nuclear Physics Accelerator Technology
Title	
Chemical Free Surface Processing for High Gradient Superconducting RF Cavities	
Summary	
This project will develop a new process that will enhance quality of the superconducing radio-frequency cavities and allow acceleration of charged particles to much higher energies. The process also will improve the cavity manufacturing and result in substantial cost reduction of superconducting radio-frequency high-energy particle accelerators.	

Company	Topic
Mikro Systems, Inc. 1180 Seminole Trail, Suite 220 Charlottesville, VA 22901-5713	Advanced Turbine Technology for IGCC Power Plants
Title	
Advanced Cooling for IGCC Turbine Blades	
Summary	
This project will develop a Tomo Lithographic Molding process to enable improved cooling of turbine engines used	

in power generation and in aircraft. This will allow turbine to operate at higher temperatures and will result in improved performance and fuel efficiency.

Company	Topic
NBE Technologies, LLC 2200 Kraft Drive, Suite 1425 Blacksburg, VA 24060	Improved Motor Designs and Power Electronics Advancements for Hybrid and Plug-In Electric Vehicles
Title	
High-temperature Packaging of Planar Power Modules by Low-Temperature Sintering of Nanoscale Silver Paste	
Summary	
This project will develop a nanomaterial technology that will lower the cost of electrical vehicles, strengthen their market position, and reduce carbon emissions and reliance on petroleum imports.	

Company	Topic
Virginia Diodes, Inc. 979 Second Street SE Charlottesville, VA 22902-6172	Fusion Science and Technology
Title	
Multi-Band Power Source for ITER Reflectometry	
Summary	
This project will develop new technologies that are critical for the US contribution to the international ITER experiment, which will show that fusion can be used to generate useful electrical power. A unique millimeter-wave and terahertz technology will be extended to supply the high frequency power and frequency agility that is required for the ITER diagnostic instruments that are critical to understanding and controlling the burning plasma.	

WASHINGTON

Company	
Eagle Harbor Technologies, Inc. 321 High School Rd. NE, Suite D3, #179 Bainbridge Island, WA 98110-1619	
Topic	
Fusion Science and Technology	
Title	
A Robust Modular IGBT Power Supply for Innovative Confinement Concepts	
Summary	
This project will develop a robust, cost effective, configurable, solid state power supply that will provide a significant increase in capabilities over currently available power supplies used in DOE supported research and industry.	

Company	Topic
Forest Concepts, LLC 3320 West Valley Highway N, Suite D110 Auburn, WA 98001	Production of Biofuels from Biomass
Title	
Optimization and Low Energy Production of Woody Biomass Particles	
Summary	
This project will reduce the cost and energy for comminution of biomass and is likely to increase the conversion efficiency for second generation biofuels producers.	