

## *The DOE Webinar will begin shortly . . .*

- **Why is there no sound?**
  - This webinar is broadcast via your computer. You may need to turn your volume on or up as the sound for this webinar comes through your computer speakers.
- **Will DOE provide access to the recorded webinar after the meeting?**
  - Yes, all those who registered will receive a link to the slides and to the recorded webinar soon after the meeting. It will also be available on the DOE SBIR/STTR web site.
- **Where can I find the Topics being discussed today?**
  - This link will take you to the Funding Opportunity Announcement (FOA) page that lists the FY 2019 Phase I Release 2 Topics: <https://go.usa.gov/xUXpQ>
- **What if my question was not answered at today's webinar?**
  - Please contact the point of contact that follows each subtopic in the document listed above for further clarification.
  - If you have a question about the grant application process, please send us an email at: [sbir-sttr@science.doe.gov](mailto:sbir-sttr@science.doe.gov) or call us at (301) 903-5707.





DOE SBIR/STTR  
Phase I Release 2 Topics Webinar

Topics associated with the  
FY 2019 Phase I Release 2  
Funding Opportunity Announcement

**Topics 7-18**

**DOE SBIR/STTR Programs Office**

**November 6, 2018**

# TODAY'S AGENDA

- SBIR/STTR Topics Introduction from Chris O'Gwin
- Topic 7 – 18: Office of Energy Efficiency and Renewable Energy

*Please note, Technology Transfer subtopics 7d, 12a & 12b will not be discussed in these webinars. Please contact the Technology Transfer point of contact directly as listed in the Topics document on the DOE SBIR/STTR website.*



# FY 2019 Phase I Schedule

	Release 1	Release 2
<b>Topics Issued</b>	Monday, July 16, 2018	Monday, October 29, 2018
Webinar(s)	Week of July 30, 2018	Week of November 5, 2018
<b>FOA Issued</b>	Monday, August 17, 2018	Monday, November 26, 2018
Webinar(s)	Friday, August 27, 2018	Friday, November 30, 2018
<b>Letters of Intent (LOI) Due</b>	Tuesday, September 4, 2018	Monday, December 17, 2018
Non-responsive LOI Feedback Provided	Tuesday, September 25, 2018	Monday, January 7, 2019
<b>Applications Due</b>	Monday, October 15, 2018	Monday, February 4, 2019
<b>Award Notification</b>	Monday, January 7, 2019	Monday, April 29, 2019

# Phase I Funding Opportunity Announcements

## Participating DOE Programs (FY 2019)

### Phase I Release 1

- Office of Advanced Scientific Computing Research
- Office of Basic Energy Sciences
- Office of Biological and Environmental Research
- Office of Nuclear Physics
- Office of Science

### Phase I Release 2

- Office of Cybersecurity, Energy Security, and Emergency Response
- Office of Defense Nuclear Nonproliferation
- Office of Electricity Delivery
- Office of Energy Efficiency and Renewable Energy
- Office of Environmental Management
- Office of Fossil Energy
- Office of Fusion Energy Sciences
- Office of High Energy Physics
- Office of Nuclear Energy



# Funding Opportunity Announcement (FOA) Webinar

- FY19 Phase I Release 2 FOA will be issued on **November 26<sup>th</sup>**
- Join our Mailing List – this field is on every DOE SBIR/STTR web page
  - Following the issuance of the FOA, look for an email with a link to the FOA
- Webinar with Q&A for this FOA on **November 30<sup>th</sup>**
  - Overview of the FY 2019 DOE SBIR/STTR Programs
    - Following the issuance of the FOA, look for an email announcing this webinar

**CONTACT INFORMATION**  
**Small Business Innovation Research and Small Business Technology Transfer**  
U.S. Department of Energy  
SC-29/Germantown Building  
1000 Independence Ave., SW  
Washington, DC 20585  
P: (301) 903-5707  
F: (301) 903-5488  
E: [Email Us](#)

---

**Join Mailing List**  
Enter your email address below to subscribe to email updates from the SBIR & STTR Programs:

---

**Provide Feedback**  
Submit suggestions for improving the SBIR & STTR Programs [here](#)

---

[More Information »](#)



# Topic Basics

- Topics are created by DOE program managers and define important technology breakthroughs needed in R&D areas that support the DOE mission
- Topics are organized by DOE Program Office
- DOE program managers are listed with each subtopic
  - Questions to DOE program managers are limited to clarification of the topic and subtopic (including references)
  - Clarification is provided to help **you** determine whether your technology fits within the topic and subtopic
  - You may communicate with these topic managers from the release of topics until the grant application due date
  - The decision to apply is **yours**



# Example Topic

- Topic & Subtopic
  - You must specify the same topic and subtopic in your Letter of Intent and grant application
- Topic Header
  - Lists the maximum award amounts for Phase I & Phase II and the types of application accepted (SBIR and/or STTR)
- Program Manager
  - Each subtopic lists the responsible DOE program manager
- “Other” Subtopic
- References

## 12. INSTRUMENTATION FOR ADVANCED CHEMICAL IMAGING

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

The Department of Energy seeks to advance chemical imaging technologies that facilitate fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels. The Department is particularly interested in forefront advances in imaging techniques that combine molecular-scale spatial resolution and ultrafast temporal resolution to explore energy flow, molecular dynamics, breakage, or formation of chemical bonds, or conformational changes in nanoscale systems.

Grant applications are sought in the following subtopics:

- a. **High Spatial Resolution Ultrafast Spectroscopy**  
Chemical information associated with molecular-scale processes is often available from optical spectroscopies involving interactions with electromagnetic radiation ranging from the infrared spectrum to x-rays. Ultrafast laser technologies can provide temporally resolved chemical information via optical spectroscopy or laser-assisted mass sampling techniques. These approaches provide time resolution ranging from the breakage or formation of chemical bonds to conformational changes in nanoscale systems but generally lack the simultaneous spatial resolution required to analyze individual molecules. Grant applications are sought that make significant advancements in spatial resolution towards the molecular scale for ultrafast spectroscopic imaging instrumentation available to the research scientist. The nature of the advancement may span a range of approaches including sub-diffraction limit illumination or detection, selective sampling, and coherent or holographic signal analysis.

Questions – Contact: James Rustad, [James.Rustad@Science.doe.gov](mailto:James.Rustad@Science.doe.gov)

- b. **Time-Resolved Chemical Information from Hybrid Probe Microscopies**  
Probe microscopy instruments (including AFM and STM) have been developed that offer spatial resolution of molecules and even chemical bonds. While probe-based measurements alone do not typically offer the desired chemical information on molecular timescales, methods that take advantage of electromagnetic interactions or sampling with probe tips have been demonstrated. Grant applications are sought that would make available to scientists new hybrid probe instrumentation with significant advancements in chemical and temporal resolution towards that required for molecular scale chemical interactions. The nature of the advancement may span a range of approaches and probe techniques, from tip-enhanced or plasmonic enhancement of electromagnetic spectroscopies to probe-induced sample interactions that localize spectroscopic methods to the molecular scale.

Questions – Contact: James Rustad, [James.Rustad@Science.doe.gov](mailto:James.Rustad@Science.doe.gov)

- c. **Other**  
In addition to the specific subtopics listed above, the Department invites grant applications in other areas that fall within the scope of the topic description above.

Questions – Contact: James Rustad, [James.Rustad@Science.doe.gov](mailto:James.Rustad@Science.doe.gov)

### References:

1. U.S. Department of Energy, 2006, Office of Science Notice DE-FG01-05ER05-30, Basic Research for Chemical Imaging, BES Chemical Imaging Research Solicitation. (<http://science.energy.gov/~media/grants/pdf/foas/2005/DE-FG01-05ER05-30.pdf>).
2. National Research Council, 2006, Visualizing Chemistry, The Progress and Promise of Advanced Chemical Imaging, National Academies Press. ([http://www.nap.edu/catalog.php?record\\_id=11663](http://www.nap.edu/catalog.php?record_id=11663)).



# Technology Transfer Opportunities (TTO) and Solar Resources

Additional Information on TTO subtopic 7d is available at  
<https://techportal.eere.energy.gov/technology.do/techID=1343>

Additional information on TTO subtopics 12a and 12b and all of topic 12 (Solar) will be available at the Solar-specific webinar on December 5<sup>th</sup> at 2pm ET. Register here: <https://bit.ly/solar-sbir-webinar>

Energy Efficiency and Renewable Energy program-wide questions?

- Contact – Portfolio Manager, Tina Kaarsberg, [tina.kaarsberg@ee.doe.gov](mailto:tina.kaarsberg@ee.doe.gov)



## Topic 07: ADVANCED MANUFACTURING

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

- a. Manufacturing Cybersecurity
- b. Atomic Precision for Gaseous Separations
- c. Covetic Processing of Critical Materials and Strategic Materials
- d. TECHNOLOGY TRANSFER OPPORTUNITY: Electrochemical Recycling  
Electronic Constituents of Value (E-RECOV)

Questions: Subtopic a – Brian Valentine, [Brian.Valentine@ee.doe.gov](mailto:Brian.Valentine@ee.doe.gov)

Questions: Subtopics b & c – David Forrest, [david.forrest@ee.doe.gov](mailto:david.forrest@ee.doe.gov)

Questions: Subtopic d – Jonathan Cook, [jonathan.cook@inl.gov](mailto:jonathan.cook@inl.gov)

and David Hardy, [david.hardy@ee.doe.gov](mailto:david.hardy@ee.doe.gov)

## Topic 08: BIOENERGY

Maximum Phase I Award Amount: \$200,000

Maximum Phase II Award Amount: \$1,100,000

Accepting SBIR Phase I Applications: YES

Accepting STTR Phase I Applications: YES

- a. Cell-Free Biochemical Platforms to Optimize Biomass Carbon Conversion Efficiency
- b. Reshaping Plastic Design and Degradation for the Bioeconomy
- c. Algae Engineering Incubator

Questions: Subtopic a – David Babson, [david.babson@ee.doe.gov](mailto:david.babson@ee.doe.gov)

Questions: Subtopic b – Jay Fitzgerald, [jay.fitzgerald@ee.doe.gov](mailto:jay.fitzgerald@ee.doe.gov)

Questions: Subtopic c – Devinn Lambert, [devinn.lambert@ee.doe.gov](mailto:devinn.lambert@ee.doe.gov)

## Topic 09: BUILDINGS

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

- a. Next Generation Residential Air Handlers
- b. Novel Materials and Processes for Solid-State Lighting
- c. Automated Point Mapping for Commercial Buildings
- d. R&D to Augment Building Energy Modeling
- e. Data Fusion for Building Technology Projects

Questions: Subtopic a – Antonio Bouza, [antonio.bouza@ee.doe.gov](mailto:antonio.bouza@ee.doe.gov)

Questions: Subtopic b – James R. Brodrick, [james.brodrick@ee.doe.gov](mailto:james.brodrick@ee.doe.gov)

Questions: Subtopic c – Marina Sofos, [marina.sofos@ee.doe.gov](mailto:marina.sofos@ee.doe.gov)

Questions: Subtopics d & e – Harry Bergmann, [harry.bergmann@ee.doe.gov](mailto:harry.bergmann@ee.doe.gov)

## Topic 10: FUEL CELLS

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

- a. Fuel Cell Membranes and Ionomers
- b. Nozzles for High-Pressure, Low-Temperature Gas Fills
- c. Active Low Cost Thin Film Hydrogen Sensors
- d. Smart Sensors for Structural Health Monitoring (SHM) of Composite Overwrapped Pressure Vessels (COPVs) of On-board Hydrogen Storage for Fuel Cell Electric Vehicles (FCEVs)
- e. Innovative Concepts for Hydrogen Conversion to Liquid Hydrocarbon Fuels

Questions: Subtopic a – Donna Ho, [Donna.Ho@ee.doe.gov](mailto:Donna.Ho@ee.doe.gov)

Questions: Subtopic b – Neha Rustagi, [Neha.Rustagi@ee.doe.gov](mailto:Neha.Rustagi@ee.doe.gov)

Questions: Subtopic c – Laura Hill, [Laura.hill@ee.doe.gov](mailto:Laura.hill@ee.doe.gov)

Questions: Subtopic d – Bahman Habibzadeh, [bahman.habibzadeh@ee.doe.gov](mailto:bahman.habibzadeh@ee.doe.gov)

Questions: Subtopic e – Eric Miller, [eric.miller@ee.doe.gov](mailto:eric.miller@ee.doe.gov)

# Topic 11: GEOTHERMAL

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

a. Improved Downhole Telemetry for Geothermal Drilling

Questions: Joshua Mengers, [joshua.mengers@ee.doe.gov](mailto:joshua.mengers@ee.doe.gov)

## Topic 12: SOLAR

Maximum Phase I Award Amount: \$200,000

Maximum Phase II Award Amount: \$1,100,000

Accepting SBIR Phase I Applications: YES

Accepting STTR Phase I Applications: YES

- a. TECHNOLOGY TRANSFER OPPORTUNITY: Real-Time Series Resistance Monitoring in Photovoltaic Systems
- b. TECHNOLOGY TRANSFER OPPORTUNITY: PV Module Soiling Spectral Deposition Detector
- c. Storage Technologies to Enable Low-Cost Dispatchable Solar Photovoltaic Generation
- d. Hardened Solar System Design and Operation for Recovery from Extreme Events
- e. Rural Solar
- f. Affordability, Reliability, and Performance of Solar Technologies on the Grid

Questions: [solar.sbir@ee.doe.gov](mailto:solar.sbir@ee.doe.gov)

## Topic 13: VEHICLES

Maximum Phase I Award Amount: \$200,000

Maximum Phase II Award Amount: \$1,100,000

Accepting SBIR Phase I Applications: YES

Accepting STTR Phase I Applications: YES

- a. Electric Drive Vehicle Batteries
- b. SiC Devices Suitable for Electric Vehicle Extreme Fast Chargers
- c. Reduction of Thermal and Friction Losses in Internal Combustion Engines
- d. Co-Optimization of Fuels and Engines
- e. Improving the Performance and Reducing the Weight of Cast Components for Vehicle Applications
- f. Low Cost, Lightweight, and High-Performance Fiber-Reinforced Composites for Vehicle Applications

Questions: Subtopic a – Samm Gillard, [Samuel.Gillard@ee.doe.gov](mailto:Samuel.Gillard@ee.doe.gov)

Questions: Subtopic b – Steven Boyd, [steven.boyd@ee.doe.gov](mailto:steven.boyd@ee.doe.gov)

Questions: Subtopic c – Mike Weismiller, [Michael.Weismiller@ee.doe.gov](mailto:Michael.Weismiller@ee.doe.gov)

Questions: Subtopic d – Kevin Stork, [kevin.stork@ee.doe.gov](mailto:kevin.stork@ee.doe.gov)

Questions: Subtopic e – Jerry Gibbs, [jerry.gibbs@ee.doe.gov](mailto:jerry.gibbs@ee.doe.gov) or Sarah Kleinbaum, [sarah.kleinbaum@ee.doe.gov](mailto:sarah.kleinbaum@ee.doe.gov)

Questions: Subtopic f – Felix Wu, [felix.wu@ee.doe.gov](mailto:felix.wu@ee.doe.gov)

## Topic 14: WATER

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

- a. Microgrid for Improved Resilience in Remote Communities through Utilization of Marine Hydrokinetics and Pumped Storage Hydropower
- b. Ocean Energy Storage Systems
- c. Pumping and Compression using Marine and Hydrokinetic Energy
- d. High Value Critical Mineral Extraction from the Ocean Using Marine Energy

Questions: Rajesh Dham, [rajesh.dham@ee.doe.gov](mailto:rajesh.dham@ee.doe.gov)

## Topic 15: WIND

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

- a. Coordinated and Secure Distributed Wind System Control and Communications Technologies
- b. Remote Diagnostic Technologies to Reduce Offshore Wind Operating, Maintenance, and Repair Costs, and Increase System Reliability
- c. Wind Turbine Blade Recycling

Questions: Michael Derby, [michael.derby@ee.doe.gov](mailto:michael.derby@ee.doe.gov)

## Topic 16: JOINT TOPIC: ADVANCED MANUFACTURING AND SOLAR ENERGY TECHNOLOGIES OFFICES

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

a. Innovation in Solar Module Manufacturing Processes and Technologies

Questions: [solar.sbir@ee.doe.gov](mailto:solar.sbir@ee.doe.gov) and Dickson Ozokwelu,  
[Dickson.Ozokwelu@ee.doe.gov](mailto:Dickson.Ozokwelu@ee.doe.gov)

# Topic 17: JOINT TOPIC: ADVANCED MANUFACTURING AND GEOTHERMAL TECHNOLOGIES OFFICES

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

- a. Geothermal Desalination and Critical Material Recovery Systems
- b. Desalination and Critical Material Recovery Systems from Other Energy Sources

Questions: Subtopic a – Joshua Mengers, [joshua.mengers@ee.doe.gov](mailto:joshua.mengers@ee.doe.gov)

Questions: Subtopic b – Robert Gemmer, [bob.gemmer@ee.doe.gov](mailto:bob.gemmer@ee.doe.gov)

## Topic 18: JOINT TOPIC: ADVANCED MANUFACTURING AND FUEL CELL TECHNOLOGIES OFFICES

Maximum Phase I Award Amount: \$200,000	Maximum Phase II Award Amount: \$1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

- a. Advanced Materials for Detection and Removal of Impurities in Hydrogen

Questions: Neha Rustagi, [neha.rustagi@ee.doe.gov](mailto:neha.rustagi@ee.doe.gov) and David Forrest, [david.forrest@ee.doe.gov](mailto:david.forrest@ee.doe.gov)

# DOE SBIR/STTR Programs Office Contact Information

- SBIR/STTR Web: [www.science.energy.gov/sbir](http://www.science.energy.gov/sbir)
- Email: [sbir-sttr@science.doe.gov](mailto:sbir-sttr@science.doe.gov)
- Phone Assistance Hotline: 301-903-5707
- DOE Phase 0 Assistance Program: <http://www.dawnbreaker.com/doephase0/>
- DOE Application Assistance: [www.doesbirlearning.com](http://www.doesbirlearning.com)

