

**Report Information**

| Award Type | Award Number      | Prime DUNS | Calendar Yr/Qtr | Final Report |
|------------|-------------------|------------|-----------------|--------------|
| Grant      | DE-FG02-00ER54610 | 066470972  | 2011 / 4        | No           |

**Award Recipient Information**

|   |   |
|---|---|
| <b>Recipient DUNS Number</b> 066470972        | <b>Recipient Address 1</b> 107 SAMFORD HALL |
| <b>Recipient Account Number</b> 219060        | <b>Recipient Address 2</b>                  |
| <b>Recipient Congressional District</b> 02    | <b>Recipient City</b> AUBURN                |
| <b>Parent DUNS Number</b> 066470972           | <b>Recipient State</b> AL                   |
| <b>Recipient Type</b> 2U.G6.M8.OH.VW          | <b>Recipient ZIP Code + 4</b> 368490001     |
| <b>Recipient Legal Name</b> AUBURN UNIVERSITY | <b>Recipient Country</b> USA                |
| <b>Recipient DBA Name</b>                     |   |

**Project / Award Information**

|   |  |
|---|--|
| <b>Funding Agency Code</b> 8925   | <b>Total Number of Sub Awards less than \$25,000/award</b> 0                 |
| <b>Awarding Agency Code</b> 8925  | <b>Total Amount Sub Awards less than \$25,000/award</b> 0.00                 |
| <b>Program Source (TAS) Code</b> 89-0227  | <b>Total Number of Sub Awards to Individuals</b> 0                           |
| <b>Sub Account Number for Program Source</b>  | <b>Total Amount of Sub Awards to Individuals</b> 0.00                        |
| <b>CFDA Number</b> 81.049   | <b>Total Number of Payments to Vendors less than \$25,000/award</b> 19       |
| <b>Amount of Award</b> 250000.00  | <b>Total Amount of Payments to Vendors less than \$25,000/award</b> 57212.00 |
| <b>Award Date</b> 06/23/2010  |  |
| <b>Award Description</b> The project funds an extension of the Auburn fusion research lab's capability to heat plasmas (hot ionized gases) with microwaves. When complete, the the project will more than triple the microwave heating power of the existing Compact Toroidal Hybrid fusion energy experiment. This will result in hotter plasmas more characteristic of the conditions needed to achieve controlled nuclear fusion ultimately for the production of electric power. Research on the Compact toroidal hybrid experiment will be far more applicable to fusion science research as a consequence of this ARRA project. |  |

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| Project Information  |   |
|--|---|
| <p><b>Project Name or Project/ Program Title</b></p> <p><b>Quarterly Activities/ Project Description</b></p> | <p>TAS Recovery Act - MHD Equilibrium and Stability Studies of Current-Carrying Plasmas in the Compact Toroidal Hybrid</p> <p>At Auburn, the PI requested his university's Facilities Division to carry out the requisite upgrades of electrical service, cooling water availability, and fire protection to the room the university made available to the PI in Nov. 2010. Facilities division cleaned out the room and installed cooling water lines. Between June and Sept. 2011, Facilities completed the installation of electric power lines to the room. Since that time they have enlarged the doorway to the room to allow the high voltage power supplies to be brought in. During the same time, Dr. Timothy Bigelow, employee of Oak Ridge National Laboratory and expert in high power microwave heating physics and technology (consultant on project), prepared and delivered to Auburn the magnet power supplies and high pressure pump to circulate cooling water to the gyrotron as well as other system components. He is making good progress on preparing and testing the 100 kilovolt high voltage power supply, and believes it will be ready to be brought to Auburn from Oak Ridge, TN in mid-January 2012. A capable technician will assemble and test the delivered HV equipment under the PI's and consultant's supervision.</p> <p>We are presently designing the waveguide system that will transmit the high power microwave output from the</p> |
|  | <p><b>Activity Codes (NAICS or NTEE-NPC) (up to 10)</b></p> <p><b>Activity Code 1</b> B43 - NTEE</p> <p><b>Activity Code 2</b> Z - NTEE</p> <p><b>Activity Code 3</b></p> <p><b>Activity Code 4</b></p> <p><b>Activity Code 5</b></p> <p><b>Activity Code 6</b></p> <p><b>Activity Code 7</b></p> <p><b>Activity Code 8</b></p> <p><b>Activity Code 9</b></p> <p><b>Activity Code 10</b></p>  |

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gyrotron to the CTH experiment. Fortuitously, an experimental group at the University of Wisconsin has just volunteered to donate to us a previously-used transmission line that should suit many of our technical requirements and enable us to bring this system into operation somewhat faster. Dr. Bigelow is assisting us in designing and fabricating the specialized waveguide parts that are needed to complete the transmission system.

**Project Status** Less than 50% completed

**Total Federal Amount ARRA Funds Received/ Invoiced** 102063.45

**Number of Jobs** 0.00

**Description of Jobs Created** No jobs to report this quarter

**Total Federal Amount of ARRA Expenditure** 102383.58

**Total Federal ARRA Infrastructure Expenditure** 73559.06

**Infrastructure Purpose and Rationale** Auburn University has assigned laboratory space for installation of a Microwave Heating System. This includes replacing a large DC power supply critical to the operation of the proposed experiment, and upgrading electrical, water, and fire protection services to support the system.

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|                   |                     |                   |                        |                     |
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| Grant             | DE-FG02-00ER54610   | 066470972         | 2011 / 4               | No                  |

**Infrastructure Contact**

|              |                      |                         |                   |
|--------------|----------------------|-------------------------|-------------------|
| <b>Name</b>  | Lester "Gene" Taylor | <b>Street Address 1</b> | 301 Samford Hall  |
| <b>Email</b> | taylomm@auburn.edu   | <b>Street Address 2</b> | College Street    |
| <b>Phone</b> | (334) 844-5956       | <b>Street Address 3</b> |                   |
| <b>Ext</b>   |                      | <b>City</b>             | Auburn University |
|              |                      | <b>State</b>            | AL                |
|              |                      | <b>ZIP Code + 4</b>     | 36849 - 0001      |

**Primary Place of Performance**

**Address 1** Department of Mathematics  
and Statistics  
**Address 2** 221 Parker Hall  
**City** Auburn University  
**Country Code** US  
**State** AL  
**ZIP Code + 4** 36849 - 0001  
**Congressional District** 02

**Recipient Highly Compensated Officers**

|  |    |                               |  |
|--|----|-------------------------------|--|
| <b>Prime Recipient Indication<br/>of Reporting Applicability</b> | No | <b>Officer 3 Name</b>         |  |
| <b>Officer 1 Name</b>  |    | <b>Officer 3 Compensation</b> |  |
| <b>Officer 1 Compensation</b>                                    |    | <b>Officer 4 Name</b>         |  |
| <b>Officer 2 Name</b>  |    | <b>Officer 4 Compensation</b> |  |
| <b>Officer 2 Compensation</b>                                    |    | <b>Officer 5 Name</b>         |  |
|  |    | <b>Officer 5 Compensation</b> |  |

**Report Audit Trail**

**Created By** Cindy Selman  
**Date Created** 01/03/2012 04:55 PM  
**Last Updated By** Cindy Selman  
**Last Updated On** 01/06/2012 03:52 PM