

PMC-EF2a

(20402)

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



RECIPIENT: University of Delaware

STATE: DE

PROJECT TITLE : Beyond the Lambertian limit -- Novel low-symmetry gratings for ultimate light trapping enhancement in next-generation photovoltaics

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0005327	GFO-0005327-001	0

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).
- A9** Information gathering (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

Rational for determination:

DOE is proposing to provide federal funding to the University of Delaware to conduct research and development activities that develop novel low-symmetry gratings (LSG) light trapping architectures for thin film photovoltaic (PV) cells.

All research, prototype fabrication and testing would occur in a laboratory environment within University facilities including the University of Delaware (451 Wyoming Road, Newark, Delaware 19716) and Clemson University (91 Technology Drive, Anderson, South Carolina 29625). Both facilities have completed an R&D questionnaire addressing the protocols in place regarding laboratory safety, risk management, chemical handling and waste disposal. Both facilities comply with standard laboratory safety procedures and labs are inspected by university staff and safety personnel. The safety protocols are monitored by the University's Environmental Health and Safety Offices.

Both universities have permits in place that are administered by the City's Department of Safety and Health to handle all research conducted on campus. Liquid effluents consisting of solvents, acids, bases, chemical reagents, and other liquid wastes will be disposed of by licensed contractors.

Based on this information, DOE has determined the work outlined is consistent with activities identified in categorical exclusion A9 (information gathering) and B3.6 (indoor bench-scale research and conventional laboratory operation).

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

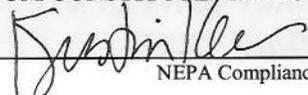
Note to Specialist :

Cristina Tyler 11.02.2011

DOE Funding: \$1,278,110

Total Project Cost: \$1,278,110

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 11/3/2011
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager

Rational for determination
DOE is proposing to provide federal funding to the University of Delaware to conduct research and development activities that develop novel low-symmetry gratings (LSG) light trapping architectures for thin film photovoltaic (PV) cells.

All research, prototype fabrication and testing would occur in a laboratory environment within University facilities including the University of Delaware (481 Wyoming Road, Newark, Delaware 19716) and Clemson University (97 Technology Drive, Anderson, South Carolina 29628). Both facilities have completed an R&D questionnaire addressing the protocols in place regarding laboratory safety, risk management, chemical handling and waste disposal. Both facilities comply with standard laboratory safety procedures and labs are inspected by university staff and safety personnel. The safety protocols are monitored by the University's Environmental Health and Safety Office.

Both universities have permits in place that are administered by the City's Department of Safety and Health to handle all research conducted on campus. Liquid effluents consisting of solvents, acids, bases, chemical reagents, and other liquid wastes will be disposed of by licensed contractors.

Based on this information, DOE has determined the work outlined is consistent with activities identified in categorical exclusion A3 (intrusion gathering) and B3 (indoor facility-scale research and conventional laboratory operation).

NEPA PROVISION
DOE has made a final NEPA determination for this event.

Insert the following language in the event.

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Finalist Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing work beyond that currently approved.

Date to be inserted
Contract Year: 11/02/2011
DOE Funding: \$1,278,110