

PMC-EF2a

(20402)

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



RECIPIENT:The University of Illinois at Chicago

STATE: IL

PROJECT TITLE : How Grain Boundaries Affect the Efficiency of Poly-CdTe Solar-Cells: A Fundamental Atomic-Scale Study of Grain Boundary Dislocation Cores Using CdTe Bi-Crystal Thin Films

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000654	DE-EE0005956	GFO-0005956-001	

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:

A9 Information gathering, analysis, and dissemination

Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B3.6 Small-scale research and development, laboratory operations, and pilot projects

Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Illinois at Chicago to conduct research and development activities to advance solar photovoltaic (PV) technologies. DOE funding would be used to research the role of grain boundaries in Cadmium Telluride (CdTe) based solar-cell devices. Activities would include the fabrication of CdTe bi-crystal thin films, the study of atomic and electronic structures of the grain boundary dislocation cores and the examination of transport properties of the CdTe bi-crystals.

All research and development activities would take place at two locations: the University of Illinois at Chicago (UIC) and the University of Texas at Dallas (UTD).

Laboratory work would be completed at UIC, located at 845 West Taylor Street, Chicago, Illinois 60607. UIC has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, and waste disposal. The laboratory complies with standard safety procedures and all processes and procedures are monitored by Environmental, Health and Safety personnel (EHS) and are subject to OSHA standards. No toxic or hazardous waste would be produced and the University has all applicable permits in place to conduct research on campus.

Additional laboratory work would be completed at UTD, located at 800 West Campbell Road, Richardson, Texas 75080. UTD has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, and waste disposal. The laboratory complies with standard safety procedures and all processes and procedures are monitored by EHS and are subject to OSHA standards. The disposal of organic chemicals, heavy metals and toxic waste are handled by EHS personnel and licensed contractors. No additional permits would be required to conduct research on campus.

Based on review of the project information and the above analysis, DOE has determined the research would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusion A9 "information gathering, analysis and dissemination" and B3.6 "small-scale research and development, laboratory operations and pilot projects," and is categorically excluded from further NEPA review.

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 :

Kelly Daigle 11/15/2012

DOE Cost: \$903,044
Total Project Cost: \$903,044

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically Signed By: Lori Gray
NEPA Compliance Officer

Lori Gray

Date: 11/19/2012

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: _____

Field Office Manager

Date: _____