PMC-EF2a
(2.04.02)

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

RECIPIENT: University of Oregon **STATE:** OR

PROJECT TITLE : Vapor Transport Deposition for Thin Film III-V Photovoltaics

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000654	DE-EE0005957	GFO-0005957-001	

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 Oregon to conduct research and development activities that advance solar photovoltaic (PV) technology. DOE funding would be used to develop low-cost vapor transport (VT) technologies for multi-junction solar cell architectures using inexpensive and safe solid sources as an alternative to metal organic chemical vapor deposition.

Budget Period 1 would include development methods to control doping, characterizing and eliminating remaining defects and fabricating solid-state p-n junctions. Budget Period 2 would include the development of VT deposition routes to Gallium Arsenide Phosphide (GaAsP) and the development of techniques to grow Gallium Arsenide (GaAs) on silicon wafers.

The majority of research and development work would be completed at Department of Chemistry at the University of Oregon (UO), located at 1253 University of Oregon, Eugene, Oregon 97403. UO has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. UO complies with standard laboratory safety procedures and labs are inspected by staff and safety personnel. UO safety compliance is monitored internally by Environmental Health and Safety (EHS) personnel. UO has all applicable permits in place to conduct research. All handling and disposal of gases, chemicals and liquid effluents would be executed by EHS personnel who comply with appropriate regulations of OSHA.

This project would involve the handling of small quantities of GaAs, which contains Arsenic. All manipulations of GaAs that can produce dust would be performed in a fume hood or with approved respirators to mitigate dust inhalation hazards. Chemical solvents and hazardous waste are stored in approved fire-proof flammable storage cabinets, and handled and used in vented chemical fume hoods. Chemical and hazardous waste are separated by reactivity and stored in local, satellite, collection sites before routine pickup by EHS for movement to the University's 90 day storage facility and subsequent off-site disposal by a licensed contractor in compliance with local, state, and federal regulations.

In addition to work completed at UO, work involving the characterization of materials would be completed at the Molecular Foundry, a DOE funded user facility at the Lawrence Berkeley National Laboratory (LBNL), located at 67 Cyclotron Road, Berkeley, California 94720. LBNL has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. The laboratory would comply with standard safety procedures and all processes and procedures are monitored by EHS. All handling and disposal of

gases, liquid effluent, toxic waste and chemicals would be executed by EHS who comply with appropriate regulations of OSHA. Permits for air, water, and waste are in place and no additional permits would be required.

Based on the review of the project information and the above analysis, DOE has determined the research and development activities 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 11/8/2012

DOE Share: $450,000
Cost Share: $45,000
Total Project Cost: $495,000

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Lori Gray / Lori Gray Date: 11/9/2012
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