

PMC-ND

(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY**  
**OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY**  
**NEPA DETERMINATION**

**RECIPIENT:** Illinois Institute of Technology**STATE:** IL

**PROJECT TITLE**  
 : Corrosion-resistant non-carbon electrocatalyst supports for PEFCs

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001224	DE-EE0007272	GFO-0007272-001	GO7272

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.

**Rationale for determination:**

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Illinois Institute of Technology (IIT) to develop high-surface-area, corrosion-resistant, non-carbon, non-platinum-group-metal electrocatalyst supports, and platinized electrocatalysts, for use in proton exchange membrane (PEM) fuel cells.

The proposed project activities include the computer modeling, synthesis and characterization of materials, in-lab testing of catalysts, and fabrication and in-lab testing of membrane electrode assemblies. Computer modeling, synthesis and characterization of materials would take place at the University of New Mexico in Albuquerque, NM and IIT in Chicago, IL. In-lab testing of catalysts would occur at the Nissan Technical Center in Farmington Hills, MI. Fabrication and in-lab testing of membrane electrode assemblies would be completed by IIT. All research, development and testing activities would take place in existing facilities designed for this type of research; therefore, no new construction, modifications or new permits, additional licenses and/or authorizations would be necessary.

The proposed project would require the use of small quantities of transition metal precursors, acids, bases, organic solvents, and industrial gases. Handling of these materials would occur in well-equipped laboratories, by workers trained in safety procedures and outfitted with all the required personal protection equipment. The proposed project would also involve the development of and experimentation with nano-sized metal oxides and nano-sized platinum materials. All experiments would be performed under well ventilated conditions, and the researchers would employ the appropriate personal protective equipment.

Hazardous waste materials would be stored temporarily in labeled containers in a dedicated storage facility following the safety regulations in place at each laboratory involved in the project. These hazardous waste chemicals would be disposed of in accordance with local, state and federal regulations. Non-hazardous wastes such as dilute acids and bases, wash water, broken glassware and refuse including paper, packing material, and spent gloves would be disposed of through normal waste streams using established procedures in accordance with federal, state and university regulations. No siting, construction or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.



Based on review of the project information and the above analysis, DOE has determined that the activities associated with the proposed project 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 exclusions 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 :

Fuel Cell Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Rebecca McCord, 11/12/2015

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: \_\_\_\_\_

Electronically  
Signed By: Kristin Kerwin

NEPA Compliance Officer

Date: 11/13/2015

**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