Cooperation in Green Car Technology R&D

Final CRADA Report

Energy Systems Division
About Argonne National Laboratory

Argonne is a U.S. Department of Energy laboratory managed by UChicago Argonne, LLC under contract DE-AC02-06CH11357. The Laboratory’s main facility is outside Chicago, at 9700 South Cass Avenue, Argonne, Illinois 60439. For information about Argonne and its pioneering science and technology programs, see www.anl.gov.

DOCUMENT AVAILABILITY

Online Access: U.S. Department of Energy (DOE) reports produced after 1991 and a growing number of pre-1991 documents are available free via DOE’s SciTech Connect (http://www.osti.gov/scitech/)

Reports not in digital format may be purchased by the public from the National Technical Information Service (NTIS):

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Rd
Alexandria, VA 22312
www.ntis.gov
Phone: (800) 553-NTIS (6847) or (703) 605-6000
Email: orders@ntis.gov

Reports not in digital format are available to DOE and DOE contractors from the Office of Scientific and Technical Information (OSTI):

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
www.osti.gov
Phone: (865) 576-8401
Fax: (865) 576-5728
Email: reports@osti.gov

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor UChicago Argonne, LLC, nor any of their employees or officers, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of document authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof, Argonne National Laboratory, or UChicago Argonne, LLC.
Cooperation in Green Car Technology R&D

Final CRADA Report

prepared by
Hee Je Seong
Energy Systems Division, Argonne National Laboratory

Participants: Korea Automotive Technology Institute (KATECH)

11/16/2016
Non Proprietary
Final CRADA Report

Date: 11/16/2016

CRADA Number: ANL/ES-C1000301

CRADA Title: Cooperation in Green Car Technology R&D

CRADA Start/End Date: 5/1/2010 to 12/31/2014

Argonne Dollars: $740,000

Participant Dollars: $1,100,000

Argonne PI: Hee Je Seong

Participant(s):

KATECH $1,100,000

Name

74 Yongjung-Ri, Pungse-Myun, Dongnam-Gu, Chonan-city, Chungnam 330-912, South Korea

Complete Address

Name $ Participant Dollars

Complete Address

Name $ Participant Dollars

Complete Address

DOE Program Manager: Ken Howden

Summary of Major Accomplishments:
- Argonne developed a methodology in accurately measuring detailed pore structures of DPF substrates by using X-ray micro-tomography. Surface pores in terms of area and volume and others can be evaluated using this technology, which offers how to advance filter substrates for better performance.
- A bench-scale urea-SCR system has been built at Argonne. Urea conversion rates by mixers and NH3 adsorption on the catalyst performance have been examined.
- Detailed particulate morphology and crystalline analyses have been provided for soot from the KATECH soot generator. The results confirms that the KATECH device can simulate different soot
Summary of Major Accomplishments:
particles, comparable to engine soot in detailed characteristics such size, nanostructure and fractal geometry.
-Various plug-in vehicles from domestic and foreign manufactures have been tested to characterize fuel and electrical energy consumption according to SAE standards. Argonne and KATECH exchanged testing results to help Korea develop test procedure development.
-Argonne provided reviews of the vehicle pathways in the GREET model and phone/web consultation on the improvement of the GREET model optimized for Korea industry.

Summary of Technology Transfer Benefits to Industry:
CRADA results were shared with KATECH, so they helped Korean companies/institute to advance/optimize technologies required in DPF manufacture, plug-in vehicle test procedure and the GREET model for Korea industry.

Other Information/Results: (Papers, Inventions, Software, etc.)
Proceedings/Workshops:

Journal Articles:
This page intentionally left blank
Energy Systems Division
Argonne National Laboratory
9700 South Cass Avenue, Bldg. 362
Argonne, IL 60439

www.anl.gov