Interoffice Communication

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As required under the CRADA agreement, AL-C-2007-02, with General Motors Corporation and Arnold Magnetic Technologies and entitled "Advanced Electric Traction System Technology Development", a non-proprietary final report is required. The report below details the results of this work and will serve this purpose:

Agreement Number: AL-C-2007-02

Partner Name(s): General Motors Corporation and Arnold Magnetic Technologies

Title: Advanced Electric Traction System Technology Development

Results

As a subcontractor to General Motors (GM), Ames Laboratory provided the technical expertise and supplied experimental materials needed to assess the technology of high energy bonded permanent magnets that are injection or compression molded for use in the Advanced Electric Traction System motor. This support was a sustained (Phase 1: 6/07 to 3/08) engineering effort that builds on the research achievements of the primary FreedomCAR project at Ames Laboratory on development of high temperature magnet alloy particulate in both flake and spherical powder forms. Ames Lab also provide guidance and direction in selection of magnet materials and supported the fabrication of experimental magnet materials for development of injection molding and magnetization processes by Arnold Magnetics, another project partner. The work with Arnold Magnetics involved a close collaboration on particulate material design and processing to achieve enhanced particulate properties and magnetic performance in the resulting bonded magnets. The overall project direction was provided by GM Program Management and two design reviews were held at GM-ATC in Torrance, CA. Ames Lab utilized current expertise in magnet powder alloy design and processing, along with on-going research advances being achieved under the existing FreedomCAR Program project to help guide and direct work during Phase 1 for the Advanced Electric Traction System Technology Development Program. The technical tasks included review of previous GM and Arnold Magnetics work and identification of improvements to the benchmark magnet material, Magnequench MQP-14-12. Other benchmark characteristics of the desired magnet material include 64% volumetric loading with PPS polymer and a recommended maximum use temperature of 200C. A collaborative relationship was maintained with Arnold Magnetics on the specification and processing of the bonded magnet material required by GM-ATC.

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Other Pertinent Information

All deliverables met on time and no follow-on agreement ensued.

Intellectual Property

No Intellectual Property was developed.

Publications

No Publications resulted from this work.