

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE AMES LABORATORY, OPERATED BY IOWA STATE UNIVERSITY
AND
AMERICAN MANGANESE, INC.

FOR COOPERATION IN THE AREA OF MATERIALS SCIENCE

This Memorandum of Understanding (MOU) is entered into by and between the Ames Laboratory (AMES), a United States Department of Energy national laboratory operated by Iowa State University under contract DE-AC02-07CH11358, with principal offices located at 2408 Pammel Drive, 311 TASF, Iowa State University, Ames, Iowa 50011, and American Manganese, Inc. ("AMY"), with offices located at #2, 17942 55th Avenue, Surrey, British Columbia V3S 6C8 (each of AMES and AMY are referred to individually herein as "Participant" collectively herein as the "Participants"), in recognition of the following:

The Participants share an interest in collaborating in the area of materials science to synergistically augment the scope and expertise of each organization and to enhance the technology development of both organizations;

AMES is home to the Critical Materials Institute Energy Innovation Hub, focused on creating innovative materials, technologies and energy solutions, using its expertise, unique capabilities and interdisciplinary collaborations to solve global problems;

AMY is a diversified specialty and critical metal company focused on low cost production or recovery of electrolytic manganese products throughout the world, and recycling of spent electric vehicle lithium ion rechargeable batteries;

The Participants recognize that the recovery and reclamation of metals and minerals from spent lithium-ion batteries represents a significant source of critical materials; and

The Participants share an interest in collaborating in the exploration of electric vehicle (EV) battery materials recycling options from spent electric vehicle lithium ion batteries having cathode chemistries such as: Lithium-Cobalt, Lithium-Cobalt-Nickel-Manganese, and Lithium-Manganese.

The Participants state their understanding as follows:

I. SCOPE OF PLANNED COOPERATION

I.1. AMES and AMY intend to cooperate in the area of materials science, including but not limited to:

- Exploring joint research activities as outlined by Section 1.2;
- Exchanges of students and academic staff for information exchange;

- Participation in seminars and academic meetings;
- Exchange of publications, academic materials, and other information;
- Other activities as agreed upon by the Participants and believed by both Participants to be of mutual benefit.

1.2. It is understood that any collaborative research and development between the Participants can only be conducted under an appropriate written agreement.

1.3 AMES and AMY intend to exchange publicly available information. The Participants do not anticipate the exchange of non-public or proprietary data or the creation of intellectual property. If the Participants determine that a particular activity may lead to the exchange of non-public or proprietary data or the creation of intellectual property, they should consult with each other and enter into an appropriate written agreement therefor.

2. GENERAL CONSIDERATIONS

- 2.1. The conduct of cooperative activities contemplated by this MOU is subject to the availability of funding, personnel, and other resources.
- 2.2. Each Participant should conduct the cooperation under this MOU in accordance with applicable laws and regulations to which it is subject, and international agreements to which its Government is a party.
- 2.3. Each Participant is responsible for the costs it incurs in participating in cooperative activities under this MOU.
- 2.4. This MOU does not create any legally binding obligations.


3. COMMENCEMENT, MODIFICATION, AND DISCONTINUATION

- 3.1. Cooperative activities under this MOU may commence upon signature by the Participants, and continue until 02/28/2019, unless sooner discontinued in accordance with paragraph 3.3.
- 3.2. This MOU may be modified by the Participants' mutual consent in writing.
- 3.3. The Participants may discontinue this MOU at any time by mutual consent in writing. Alternatively, a Participant that wishes to discontinue its participation in this MOU should endeavor to provide at least 30 days prior written notice to the other Participant.

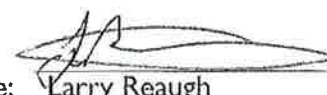
[Signatures Appear on Next Page]

Signed in duplicate.

FOR AMES Laboratory

By: 
Name: Dr. Adam J. Schwartz
Title: AMES Laboratory Director
Date: 2/20/17
Place: Ames, Iowa

FOR American Manganese, Inc.

By: 
Name: Larry Reaugh
Title: President & CEO, Director
Date: Feb 17, 2017
Place: SURREY, B.C.

