

MEMORANDUM OF UNDERSTANDING
BETWEEN
NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY
AND
BATTELLE MEMORIAL INSTITUTE, PACIFIC NORTHWEST DIVISION,
AS MANAGEMENT AND OPERATING CONTRACTOR FOR THE PACIFIC NORTHWEST
NATIONAL LABORATORY
CONCERNING
RESEARCH COOPERATION IN THE AREA OF
RENEWABLE ENERGY STORAGE

I. PARTICIPANTS

This Memorandum of Understanding (MOU) is between the National Institute of Advanced Industrial Science and Technology (AIST) and Battelle Memorial Institute, Pacific Northwest Division (Battelle), in its capacity as the manager and operator of the Pacific Northwest National Laboratory (PNNL) under U.S. Department of Energy Contract No. DE-AC05-76RL01830. AIST and Battelle are collectively referred to as the "Participants" or individually as a "Participant."

II. PURPOSE

The purpose of this MOU is to document the intention of the Participants. This MOU is to explore future cooperation to enhance the ability of the Participants to achieve their respective research missions through sharing of information and the exchange of staff and to enhance the quality of science, technology, education, and industrial development in their respective economies. AIST and Battelle intend to undertake cooperative activities for peaceful purposes.

III. AREAS OF COOPERATION

The Participants intend to cooperate in the areas of renewable energy storage technology including, but not limited to, the following selected topic:

- Catalysis and materials development for energy storage in chemical bonds.

IV. OBJECTIVES

The planned cooperative efforts may include, but are not limited to, the following:

- (1) Exchange of researchers.

- (2) Planning collaborative research opportunities, with any specific future research and development collaboration to be implemented through an appropriate written agreement therefor.
- (3) Holding workshops, joint lectures, and symposia.
- (4) Exchange of publicly available information and materials.

V. NON-BINDING COMMITMENTS

This MOU does not create any legally binding obligations between the Participants. As the need may arise, specific details of support to be furnished by each of the Participants may be developed separately from this MOU in specific agreements or contracts, subject to the availability of funds.

VI. INTELLECTUAL PROPERTY

The Participants do not anticipate the transfer of rights in intellectual property under this MOU. If the Participants decide that a particular activity may lead to the creation of intellectual property, they should consult with each other and make appropriate written arrangements therefor.

VII. PROPRIETARY INFORMATION

In the event that any activities under this MOU would benefit from one Participant's use of another Participant's proprietary information, the Participants have the option to enter into good faith negotiations to produce a mutually agreeable written arrangement regarding the obligations and terms associated with the exchange.

VIII. NO ADDITIONAL COMMITMENTS

This MOU is not intended to directly or indirectly constitute, create, or give effect to or to otherwise imply a joint venture, corporation, partnership, contract, or any form of formal business entity.

IX. DURATION, MODIFICATION AND DISCONTINUATION

Collaboration under this MOU may commence upon signature and may continue for 5 years unless discontinued in accordance with this Section. This MOU may be modified or extended upon mutual written consent of the Participants. The Participants may discontinue this MOU at any time by mutual consent in writing. Alternatively, a Participant that desires to discontinue its

participation in this MOU should endeavor to provide the other Participant at least 30 days advance written notice.

NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY

A handwritten signature in black ink, appearing to read "Ryoji Chubachi", written over a horizontal line.

Dr. Ryoji Chubachi

President

Date 14 Dec. 2017

BATTELLE MEMORIAL INSTITUTE, PACIFIC NORTHWEST DIVISION

A handwritten signature in blue ink, appearing to read "Malin M. Young", written over a horizontal line.

Dr. Malin M. Young

Deputy Director for Science and Technology

Date 11-9-17