IPC2023

STAM Science and Technology of Advanced Materials

LUNCHEON SEMINAR

Thur. July 20 | 12:30 - 1:10 pm | Room: F (#108)

Lunchbox will be provided

Biomass Upgrading: Toward Sustainable Electrocatalysts for Energy Conversion

Hiroshi Yabu, Tohoku University

Hiroshi Yabu is a professor and a principal investigator of WPI-Advanced Institute for Materials Research (AIMR), Tohoku University. His group is developing biomimetic functional materials and is fabricating polymer nanostructures by self-assembly and self-organization process for optical, electrical and biomedical applications. He also serves as a deputy director of Open Innovation Center of Hydrogen Science for GX, WPI-AIMR, Tohoku University and a chief scientific officer of AZUL Energy, Inc. to develop a new electrocatalysts for energy and chemical conversions.

Abstract

Nowadays, there is increasing demand for high-performance electrocatalysts, which are key materials for fuel cells and water electrolysis systems. Although platinum group metals exhibit high electrocatalytic activity, increasing production costs due to resource constraints, limited countries of production, and geopolitical supply issues are threatening their use.

Here, we report the preparation of trifunctional biomass-derived electrocatalysts for the oxygen reduction reaction (ORR), and oxygen/hydrogen evolution reactions (OER/HER) by the pyrolysis of cellulose nanofibers (CNFs) from sea pineapple shells, dried blood meal, and cyanocobalamin. The synthesized electrocatalyst shows high ORR, OER, and HER performances, which are the key steps for polymer electrolyte fuel cells (PEFCs), rechargeable metal–air batteries, and water electrolyzers.

Registration for STAM Luncheon Seminar at IPC2023 (July 20)

Pre-registration

https://forms.office.com/r/Wv2izKaBMM

- Will be closed once the number of applicants reaches the capacity.
- Valid until 5 minutes before the seminar begins.
- On-site registration will be available if there is a remaining seat/lunchbox.

Register TODAY!

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