

Support for Startup Ecosystem Formation

Adoption year: FY 2022 Principal Investigator: Tokyo Institute of Technology / Associate Professor / Sachiko Matsushita (As of Aug. 2022)

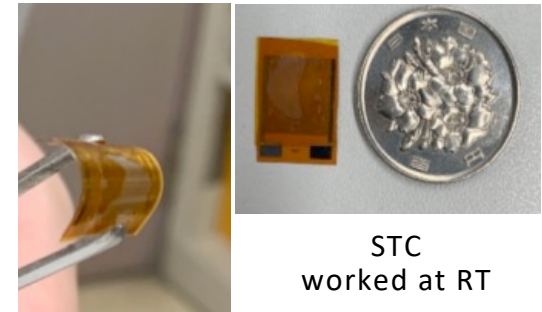
Subject of Research

Semiconductor-Sensitized Thermal Cell (STC)

Overview

Semiconductor-sensitized thermal cell (STC) is a new technology that converts heat above room temperature into electricity. The discharge ends when chemical equilibrium is reached at the installation temperature, but when switched off, the heat energy can be absorbed and re-discharged.

(Mater. Horiz., 2017, 4, 649–656.; J. Mater. Chem. A, 2019, 7, 18249.)



Business Models(when applying)

The mission of this startup is to break through the energy bottleneck that is spreading around the world, and it will ultimately develop the following two businesses:

[I] Replacing lithium-ion batteries, [II] Complementary thermal power generation systems to compensate for the decline in power generation by solar cells.

Activity Planning(when applying)

Last year, we rented STC cells fabricated in our laboratory (for 80 °C power generation, 10-day endurance) to those who wished to use them through our MTA contract. We rent 27 cells and gathered user data. In this GTIE, we will develop the 2nd-generation rental cell that addresses some of the issues obtained through the previous cell rentals, and a lean start-up cycle will be developed again.

At the same time, preparations will be made to launch a business that will provide consulting and analysis of STCs.