Principal Investigator

The University of Tokyo **Wei-Lun Hsu**

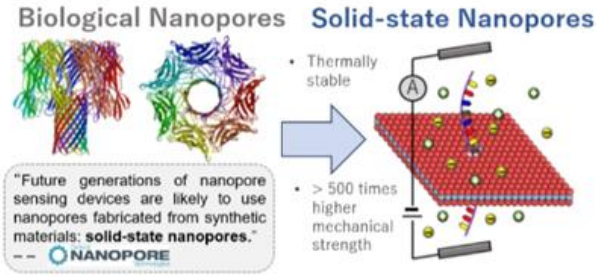
Adopted Theme

Solid-state nanopore molecule sequencers

Subject of Research

Solid-state nanopore molecule sequencers

Overview



In the last decade, nanopore molecular sequencers have been utilized for DNA sequencing and other molecules. These biological nanopores are protein molecules, possessing low mechanical strength and thermal stability. In this regard, we aim to launch a startup to commercialize inorganic solid-state nanopore sequencers for prolonged lifetime of the nanopore membranes and thus reduced costs. Our clients include research institutions such as universities as well as hospitals for medical diagnostics. This project will establish required technology toward mass production of solid-state nanopores for the global market.

Business Models (when applying)

Starting with DNA sequencing, nanopore sensing has the potential for many applications in medical diagnostics. We aim to generate profits by commercializing two-dimensional materials based solid-state nanopore membranes and solid-state nanopore biomolecule sequencing devices.

Activity Planning (when applying)

The main activity plans for this project are:
1. The business plan involves the development of overseas customers for the two-dimensional material nanopore membranes and solid nanopore sequencing devices. Additionally, partnerships with companies will be established for the fabrication of the nanopore sequencers.
2. The technical goal is to develop a fabrication method for free-standing monolayer molybdenum disulfide with nanopore arrays based on lithography methods to improve the sensing throughput.