

AIPORE INC.

Developing AI-enabled solid-state nanopore sensor technology that has accurately detected SARS-CoV-2 coronavirus in saliva specimen in 5 minutes

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Japan
<https://aipore.com>

Founded in 2018
Founder & CEO: NAONO Norihiko
No. of employees: 5
Type of Ownership: Private
Primary stock exchange: N/A

January 2023: Enabling analysis of a wide range of biomolecules by measuring single-molecule level via electric current.

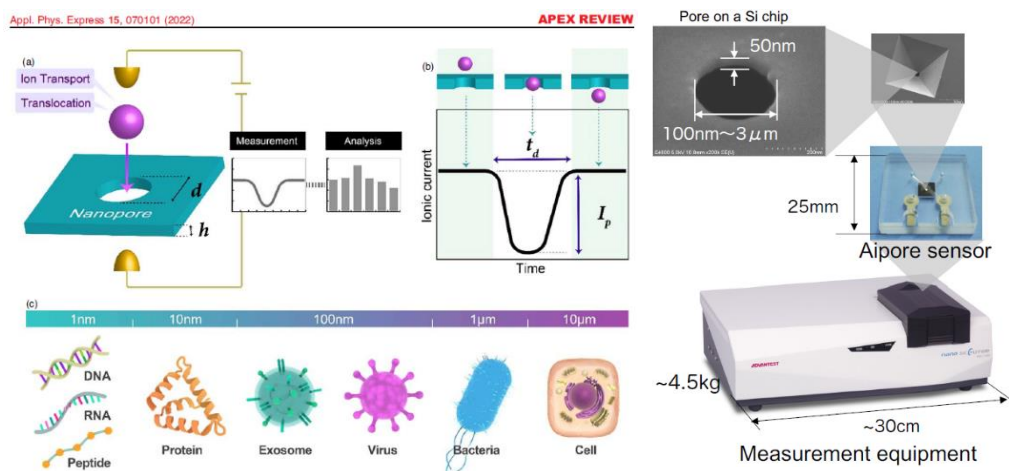


Venture Valuation (VV) interviewed Mr. NAONO Norihiko, Founder & CEO.

VV: Your solid-state nanopore technology system consists of three elements: semiconducting nanopore modules, a portable A4 size microcurrent measuring device, and machine learning software on servers.

Naono: There are biological nanopores and solid-state nanopores. A solid-state nanopore is a nanometer sized hole formed in a synthetic membrane such as silicon nitride. (A nanometer (nm) is one billionth of a meter.)

Our solid-state nanopore system is able to detect and identify bioparticles by passing them through a nanoscale hole sized from a few nm or larger in diameter, which is adjusted according to the size of the target bioparticle. For instance, measuring a virus requires a pore 300 nm in diameter.



When a target goes through a nanopore by electrophoretic force, the ionic current decreases. The ionic current versus time waveform obtained from the nanopore provides data on the volume, structure, and surface charge of the target.

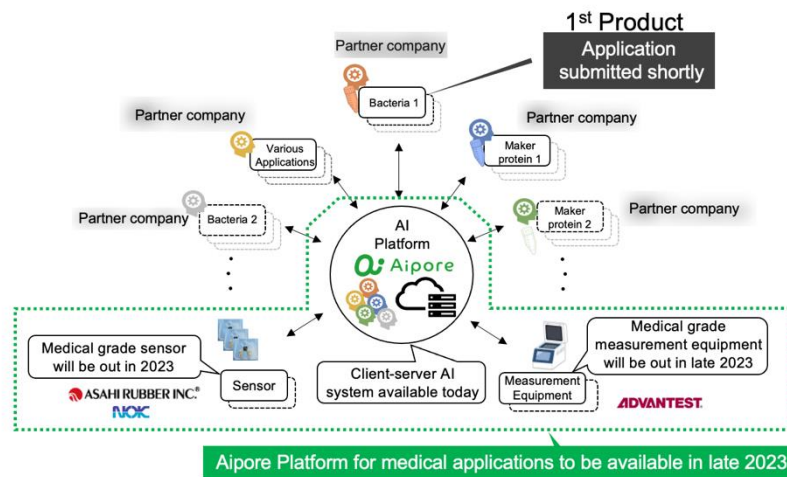
By analyzing the waveform data with our AI machine learning algorithm, many types of viruses, exosomes, bacteria, as well as novel pathogens are detected and identified straight away.

VV: Your business model is to establish partnerships with several companies and support development of various applications. The first application is expected to be submitted shortly.

Naono: It is about rapid, culture-free bacterial detection and identification. The partnership agreement prevents us from disclosing details on the application yet.

Various application projects are in progress. We welcome any inquiries on research/project ideas to employ our AI platform system.

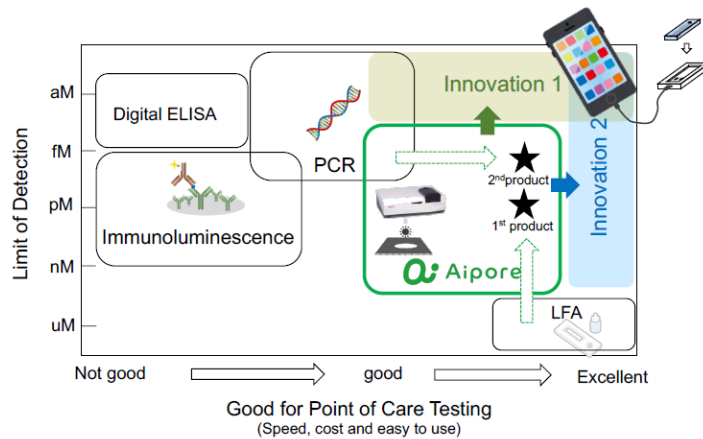
Additionally, by the end of this year, our system is expected to be available for medical institutions such as hospitals and clinics. As well as our current partners in scientific research laboratories, we will have an opportunity to expand our market segment.



VV: You are ultimately aiming to enter first into the point-of-care testing market targeting medical professional use and then eventually for general public use.

Naono: The handheld point-of-care testing device enhances speedy clinical decision-making in the process of diagnosis. Our system will be connected to a smart phone/mobile device for medical professionals, and then for general public.

The figure below shows where our product is currently positioned in comparison with lateral flow assay (LFA), immunoluminescence, digital ELISA, and PCR. In the future, along with technology development of LFA, we believe that our AI-assisted platform will provide a substantially precise, rapid, easy to use, and cost-effective testing tool in the diagnostics industry.



VV Comments after the interview:

The Covid-19 pandemic has had significant impact on the point-of-care testing industry. Medical Device Network reported that¹ there are currently more than 500 Covid-19 point-of-care testing products on the market.

Because of climate change caused by global warming, another pandemic is a serious world-wide concern. The sooner microorganisms are detected the easier it is to identify and/or develop appropriate treatment.

New technology such as Aipore’s may change the conventional centralized laboratory methods into handheld, rapid, accurate, easy to use, and economical diagnostic systems. Also, invention of AI-assisted testing will impact on the growing point-of-care industry. Fortune Business Sight mentions that² the global infectious disease point-of-care diagnostics market is projected to develop from 1.3 billion USD in 2021 to 3.96 billion USD in 2028.

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Venture Valuation specializes in independent assessment and valuation of technology-driven companies in growth industries, such as the Life Sciences (Biotech, Pharma, and Medtech), ICT, Femtech, Nanotech, Cleantech and

¹ <https://www.medicaldevice-network.com/comment/covid-19-point-of-care-testing>

² <https://www.fortunebusinessinsights.com/infectious-disease-point-of-care-poc-diagnostics-market-104307>

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