

Yigang Shen

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"Things will work out the way they are meant to."

Summary

Ph.D. candidate at Osaka University. Trainee at the laboratory for integrated biodevice, RIKEN. 3+ years experience specializing in microfluidics system and MEMS fabrication. Enjoys open-source software and project. Interested in interface phenomenon, micro-controller equipment, 3D printer.

Education Background

Osaka University

PH.D. IN FRONTIER BIOSCIENCES

Osaka, Japan

Dec. 2018 - In progress

- Research field: MEMS, microfluidics, cell sorting, single cell analyses, droplet control, particle manipulation.

Dalian Maritime University

M.S. IN MARINE ENGINEERING

Dalian, China

Step. 2014 - Mar. 2017

- Research field: Oil analyses, metal particles detecting, microfluidics.

Dalian Maritime University

B.S. IN MARINE MANAGEMENT

Dalian, China

Step. 2010 - Mar. 2014

Publication

- **Y. Shen**, N. Tanaka, H. Yamazoe, S. Furutani, H. Nagai, T. Kawai, Y. Tanaka, Flow analysis on microcasting with degassed polydimethylsiloxane micro-channels for cell patterning with cross-linked albumin, PLoS One. 15 (2020) e0232518.
- Y. Aishan, Y. Yalikun, S.I. Funano, **Y. Shen**, Y. Tanaka, Accurate rotation of ultra-Thin glass chamber for single-cell multidirectional observation, Appl. Phys. Express. 13 (2020) 26502.
- Y. Aishan, Y. Yalikun, S. Amaya, **Y. Shen**, Y. Tanaka, Thin glass micro-dome structure based microlens fabricated by accurate thermal expansion of microcavities, Appl. Phys. Lett. 115 (2019). doi:10.1063/1.5123186.
- N. Ota, G. Kanda, H. Moriguchi, Y. Aishan, **Y. Shen**, R. Yamada, H. Ueda, Y. Tanaka A Microfluidic Platform Based on Robust Gas and Liquid Exchange for Long-term Culturing of Explanted Tissues. Analytical Sciences 35.10, 1141-1147 2019.
- N. Ota, Y. Yalikun, N. Tanaka, **Y. Shen**, Y. Aishan, Y. Nagahama, M. Oikawa, Y. Tanaka. Simple Isolation of Single Cell: Thin Glass Microfluidic Device for Observation of Isolated Single Euglena gracilis Cells. Anal. Sci., 18, 568-590 2019
- Y. Yalikun, K. Uesugi, M. Hiroki, **Y. Shen**, Y. Tanaka, Y. Akiyama, K. Morishima. Insect Muscular Tissue-Powered Swimming Robot. Actuators, 8, 30-44 2019.
- **Y. Shen**, Y. Yalikun, Y. Tanaka, Recent advances in microfluidic cell sorting systems. Sensors Actuators B Chem. 282, 268-281 2018.
- **Y. Shen**, Z. Song, Y. Yan, Y. Song. Automatic and selective single cell manipulation in a pressure-driven microfluidic lab-on-chip device. Micro-machines, 8, 6, 172 2017.

Conference Presentation

- **Y. Shen**, Y. Yalikun, Y. Tanaka, "A portable droplet sorting platform with integrated thermocapillary sorting and capacitance detecting", International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2019), W118.d, Basel, Switzerland, October 2019..
- Y. Tanaka, S. Amaya, D. Ma, **Y. Shen**, O. Gusev "Biosensing and power generation robots using anhydrobiosis of chironomid for space exploring", International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2019), T001.a, Basel, Switzerland, October 2019.
- Y. Aishan, Y. Yaxiaer, S. Amaya, **Y. Shen**, Y. Tanaka "Ultra-thin glass micro dome structure (GMDS) for multidirectional cell observation", International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2019), W145.e, Basel, Switzerland, October 2019
- **Y. Shen**, Q. Ji, X. Pan. On-line wear debris detection in lubricating oil with counting and separation technologies ICMFLOC Dalian, China, July 2016.

Honors & Awards

2019	Hot Article Award , Analytical Science	Japan
2019	Foundation grant , The Japan Science Society	Japan
2019	Foundation grant , Future Young Researchers Support Project Osaka University	Japan
2018	Scholarship , Japanese Government Scholarship, MEXT	Japan
2016	Bronzed Prize , Challenge Cup National College Student Business Plan Competition	China
2016	Scholarship , Class NK (Japanese) Education Trust Scholarship	China
2016	Bronze Award , "Youth" National University Entrepreneurship Competition	China
2016	First prize , Northeast Mathematical Modeling League postgraduate group	China
2013	Second Prize , American College Students Mathematical Modeling	China
2011	Scholarship , College Special Scholarship of Dalian University	China

Patents

- **Shen Yigang**, Song yongxing, Pan Xinxiang, Single cell automatic control sorting device based on microfluidic chip, Public No. CN206721175U, 2017
- **Shen Yigang**, Pan Xinxiang, Ji Qiang, Particle on-line detection device based on microfluidic chip', Public No.CN205562348U, 2016.
- Ji Qiang, **Shen Yigang**, Pan Xinxiang, Droplet generation device based on microfluidic chip and piezoelectric ceramic element, Public No.CN205580993U, 2016

Research Experience

Biosensing and power generation robots using the anhydrobiotic chironomid for space exploring

JAPAN SOCIETY FOR THE PROMOTION SCIENCE

Japan

2019 - 2020

- Design and build the capacitance sensor system for detecting the movement of chironomid.

Cell Patterning on the micro-cast structure of cross-linked albumin

JAPANESE COMPANY

Japan

2019 - 2020

- Analysis the flow rate feature in the degassed PDMS end channel and carry on the process of cell culture.

Development of real-time detection and analysis system for metal particles in lubricating oil using glass microfluidic devices

THE JAPAN SCIENCE SOCIETY

Japan

2018 - 2019

- Responsible for the whole program.

Single Cell Sorting and Genome Sequencing of Lung Cancer Based on Microfluidic Chip Technology

NATIONAL HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT PROGRAM 863

China

2015 - 2016

- Design the structure of the chip and master the COMSOL simulation software.

Research on Key Issues of the Marine Power Plant Oil Detecting on a Microfluidic Lab-on-Chip Device

NATIONAL SCIENCE FOUNDATION OF CHINA

China

2014 - 2017

- Study on the separation and counting of microfluidic abrasive grains with multi-physics coupling.