YIGANG SHEN

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EDUCATION BACKGROUND

PhD Graduate School of Frontier Biosciences**,** Osaka University; Student trainee, RIKEN 12/2018-- In progress
Research field: **MEMS**, **microfluidics**, **cell sorting**, **single cell analyzes**, **droplet control, particle manipulation**

MSc Marine Engineering, Dalian Maritime University, China 09/2014--03/2017
Research field: Oil analyses, metal particles detecting, microfluidics

BSc Marine Engineering, Dalian Maritime University, China 09/2010--07/2014

PUBLICATIONS AND PATENTS

- **Shen Y**, Tanaka N, Yamazoe H, Furutani S, Nagai H, Kawai T, et al. Flow analysis on microcasting with degassed polydimethylsiloxane micro-channels for cell patterning with cross-linked albumin. PLoS One.15: e0232518 2020.
- Aishan Y, Yalikun Y, Funano SI, **Shen Y**, Tanaka Y. Accurate rotation of ultra-Thin glass chamber for single-cell multidirectional observation. Appl Phys Express.13: 26502 2020.
- Aishan Y, Yalikun Y, Amaya S, **Shen Y**, Tanaka Y. Thin glass micro-dome structure based microlens fabricated by accurate thermal expansion of microcavities. Appl Phys Lett. 115 2020.
- 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. Micromachines, 8,6, 172 2017.

RESEARCH EXPERIENCE

- Project: **Development of real-time detection and analysis system for metal particles in lubricating oil using glass microfluidic devices**
  (*Sasakawa Scientific Research Grant)* Responsible for the whole grogram 2019-2020

- Project: **Biosensing and power generation robots using the anhydrobiotic chironomid for space exploring**
  (*Japan Society for the Promotion Science)* 2018-2019
  Design and build the capacitance sensor system for detecting the movement of chironomid

- Project: **Cell Patterning on the micro-cast structure of cross-linked albumin**
  (*Japanese company)* 2018-2019

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

- Project: **Single Cell Sorting and Genome Sequencing of Lung Cancer Based on Microfluidic Chip Technology (*National High Technology Research and Development Program 863*)** 2015-2016
  Design the structure of the chip and master the COMSOL simulation software.

- Project: **Research on Key Issues of the Marine Power Plant Oil Detecting on a Microfluidic Lab-on-Chip Device (*National Science Foundation of China*)** 2014-2017
  Study on the separation and counting of microfluidic abrasive grains with multi-physics coupling.

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.

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.

AWARDS

Hot Article Award Analytical Science	2019
Foundation grant: 800,000-yen (Grant No: 2019-2031)	2019
Future Young Researchers Support Project Osaka University	2019
Japanese Government Scholarship (MEXT)	2018—present
Challenge Cup National College Student Business Plan Competition (National Bronzed Prize)	2016
Class NK (Japanese) Education Trust Scholarship	2016&2015
"Youth" National University Entrepreneurship Competition National, Bronze Award	2016
Northeast Mathematical Modeling League postgraduate group provincial, first prize	2016
American College Students Mathematical Modeling Contest, Second Prize	2013
College Special Scholarship	2011-2012