Shoichi Nishitani

492 Stanley Hall, University of California, Berkeley
(510)664-7602 snishitani@berkeley.edu

EDUCATION

Ph.D. in Materials Engineering Sept. 2020
The University of Tokyo, Japan
Dissertation title: "Design and development of the nanofilter biointerface for potentiometric small-biomolecule recognition"
Advisor: Prof. Toshiya Sakata
The University of Cambridge, United Kingdom March 2020
Advisor: Prof. George Malliaras
B.S. in Materials Engineering Sept. 2017
The University of Tokyo, Japan
High school 2004 – 2009
Anglo American School of Moscow, Russia

WORK EXPERIENCE

Postdoctoral research fellow Oct. 2020 – May 2021
The University of Tokyo, Japan
Postdoctoral research fellow June 2021 – PRESENT
University of California, Berkeley

PUBLICATIONS

[1] Himori, S.; **Nishitani, S.**; Sakata, T. Aptamer-based nanofilter interface for small-biomarker detection with potentiometric biosensor. *Electrochimica Acta* **2021**, *368*, 137631.

[2] **Nishitani, S.**; Sakata, T. Enhancement of signal-to-noise ratio for serotonin detection with well-designed nanofilter-coated potentiometric electrochemical biosensor. *ACS Appl. Mater. Interfaces* **2020**, *12* (13), 14761-14769.

[3] **Nishitani, S.**; Sakata, T. Polymeric nanofilter biointerface for potentiometric small-biomolecule recognition. *ACS Appl. Mater. Interfaces* **2019**, *11* (5), 5561-5569.

[4] Himori, S.; **Nishitani, S.**; Sakata, T. Control of potential response to small biomolecules with electrochemically grafted aryl-based monolayer in field-effect transistor-based sensors. *Langmuir* **2019**, *35* (10), 3701-3709.

[5] **Nishitani, S.**; Maekawa, Y.; Sakata, T. Understanding the molecular structure of the sialic acid-phenylboronic acid complex by using a combined NMR spectroscopy and DFT study: toward sialic acid detection at cell membranes. *Chemistryopen* **2018**, *7* (7), 513-519.

[6] **Nishitani, S.**; Sakata, T. Potentiometric adsorption isotherm analysis of a molecularly imprinted polymer interface for small-biomolecule recognition. *ACS Omega* **2018**, *3* (5), 5382-5389.

[7] **Nishitani, S.**; Kajisa, T.; Sakata, T. Development of molecularly imprinted polymer-based field effect transistor for sugar chain sensing. *Jpn. J. Appl. Phys.* **2017** *56* (4S), 04CM02.

SELECTED CONFERENCE PRESENTATIONS (ORAL)

- **Nishitani, S.**; Sakata, T. Polymeric nanofilter biointerface for potentiometric small-biomolecule recognition. *ACS Fall 2019 National Meeting and Exposition*, ANYL477, **August 2019**, San Diego, CA.
- **Nishitani, S.**; Sakata, T. Three-dimensional polymeric biointerface for ultra-sensitive and selective detection of low-molecular-weight biomarker using semiconductor-based biosensor. *233rd ECS Meeting*, H03-1484, **May 2018**, Seatle, WA.
- **Nishitani, S.**; Kajisa, T.; Sakata, T. Development of sugar chain-targeted molecularly imprinted polymer-based semiconductor biosensor for cancer cell detection. *The* 11^{th} *SPSJ International Polymer Conference*, 15G03, **December 2016**, Fukuoka, Japan.

- **Nishitani, S.**; Kajisa, T.; Sakata, T. Development of lactate sensor using field-effect transistor combined with molecularly imprinted polymer interface. *2015 MRS Fall Meeting and Exhibit*, D3.01, **December 2015**, Boston, MA.

SELECTED CONFERENCE PRESENTATIONS (POSTER)

- **Nishitani, S.**; Sakata, T. *2019 MRS Fall Meeting and Exhibit*, **December 2019**, Boston, MA.
- **Nishitani, S.**; Sakata, T. *IEEE BioMedical Circuits and Systems Conference*, **October 2016**, Shanghai, China.
- **Nishitani, S.**; Sakata, T. *Biosensors 2016*, P2.197, **May 2016**, Gothenburg, Sweden.

OTHER PUBLICATIONS

[1] Sakata, T; Nishitani, S; Kajisa, T. Molecularly imprinted polymer-based bioelectrical interfaces with intrinsic molecular charges. *RSC Adv.* **2020**, *10* (29), 16999-17013.

[2] Fukuma, T; **Nishitani, S.**; Sakata, T. Functionalization of polymeric nanofilter biointerface for small biomarker sensing. *ECS Trans.* **2020**, *97* (6), 9-14.

[3] Himori, S.; **Nishitani, S.**; Sakata, T. Effect of electrochemically grafted aryl-based monolayer on nonspecific electrical signal of field-effect-transistor-based biosensor. *ECS Trans.* **2019**, *89* (6), 17-24.

[4] Yang, H.; **Nishitani, S.**; Sakata, T. Potentiometric Langmuir isotherm analysis of histmaine-selective molecularly imprinted polymer-based field-effect transistor. *ECS J. Solid State Sci. Technol.* **2018**, *7* (7), Q3079-Q3082.

[5] **Nishitani, S.**; Sakata, T. Three-dimensional polymeric biointerface for ultra-sensitive and selective detection of low-molecular-weight biomaker using semiconductor-based biosensor. *ECS Trans.* **2018** *85* (9), 9-14.

[6] **Nishitani, S.**; Sakata, T. Molecularly imprinted polymer-based FET biosensor for oligosaccharides sensing to target cancer cells. *In Proceedings - 2016 IEEE Biomedical Circuits and Systems Conference, BioCAS 2016* **2017**, 30-33.

FELLOWSHIPS AND AWARDS

- JSPS Overseas Research Fellowships, Japan 2021 - 2023
- JSPS Research Fellowship DC1, Japan 2018 - 2021
- JSPS Overseas Challenge Program for Young Researchers March 2020 - July 2020
- Research Assistant SEUT-RA Type A, Japan 2017 - 2018
- Young Researchers Award, *2016 International Conference on Solid State Devices and Materials*, **2016**, Tsukuba, Japan.
- Science and Technology for Advanced Materials (STAM) Young Researchers Award, **2018**, Japan.

LEADERSHIP EXPERIENCES

- Student leader, Seoul National University-Tsinghua University-University of Tokyo workshop, **2018**, Beijing, China.
- Team captain, Men's ice hockey team, The University of Tokyo 2013 - 2014
- Sports player, Men's ice hockey team, The University of Tokyo 2010 - 2014