

February 19, 2018  
Sysmex Corporation

## FY2017 Nakatani Award and Research Grant Recipients Announced

The Tokyo-based Nakatani Foundation for Advancement of Measuring Technologies in Biomedical Engineering announced 2 recipients of The Nakatani Award, 38 recipients of its Technology Development Research Grants and 2 recipients of its Investigative Research Grants for fiscal 2017. Sysmex Corporation (HQ: Kobe; Chairman and CEO: Hisashi Ietsugu) has been a financial supporter of the Foundation for many years.

---

The Foundation was established in April 1984 as The Nakatani Foundation of Electronic Measuring Technology Advancement, endowed principally by Sysmex and its founder and first president, the late Taro Nakatani, with the goal of "promoting advances in electronic measuring technology as a foundation for industrial technology, in order to contribute to the development of Japanese society and its economy as well as the betterment of national life." On April 1, 2012, the foundation was renamed The Nakatani Foundation for Advancement of Measuring Technologies in Biomedical Engineering. The foundation's activities include the provision of awards for biomedical engineering measurement and related technologies, as well as technology developmental research grants, investigative research grants and technology exchange grants.

### 1. Recipients and research themes

Please see "Recipients of FY2017 Awards"

### 2. Total amount of grant (Technology Development Research Grants and Investigative Research Grants)

¥554,910,000-

### 3. About the foundation

Name: Nakatani Foundation for Advancement of Measuring Technologies in Biomedical Engineering

Location: 1-2-2 Osaki, Shinagawa-ku, Tokyo

URL: <https://www.nakatani-foundation.jp/>

Recipients of FY2017 Awards  
Nakatani Foundation  
for Advancement of Measuring Technologies in Biomedical Engineering

**Nakatani Award**

**Grand Prize**

(Yen)

Recipient	Position and Affiliation	Prize Theme	Amount
Tsuyoshi Shiina	Graduate School of Medicine, Department of Human Health Sciences Kyoto University Professor	Development of ultrasound elastography based on pioneering researches of novel imaging technology of biological function and tissue properties	5,000,000
Michiyuki Matsuda	Graduate School of Biostudies, Laboratory of Bioimaging and Cell Signaling Kyoto University Professor	Development of visualization technologies for intracellular-signaling-molecule activities in living animals	5,000,000

**Technology Development Research Grants**

**Long-term Research Grants: multi-year grants (five years)**

(Yen)

Recipient	Position and Affiliation	Research Theme	Amount
Motomu Tanaka	Institute of Physical Chemistry Heidelberg University Professor	Establishment of an International Global Hub for Research and Education of Biomedical Engineering Based on Medical Physics	300,000,000

**Special Research Grants: multi-year grants (two years)**

(Yen)

Recipient	Position and Affiliation	Research Theme	Amount
Takuo Tanaka	RIKEN Metamaterials Laboratory Chief Scientist	Ultra-high sensitive infrared spectroscopy using resonant coupling of metamaterial infrared absorber and molecules	29,460,000
Kazuhito Tomizawa	Department of Molecular Physiology, Faculty of Life Sciences Kumamoto University Professor	Development of measurement system for modified RNA nucleotides and its application for non-invasive diagnostics	30,000,000

Kiwamu Takemoto	Department of Physiology, Yokohama City University, School of Medicine Assistant Professor	Genome-wide CALI technology for endogenous proteins	30,000,000
Katsuyuki Shiroguchi	RIKEN Quantitative Biology Center Unit Leader	Next generation bacterial microbiota analysis for understanding and controlling its network	30,000,000
Takeshi Yasui	Mechanical Science Course, Graduate School of Technology, Industrial and Social Sciences The Tokushima University Professor	Scan-less, super-resolution, confocal fluorescence microscopy using optical frequency comb	29,950,000

**Development Research Grants**

(Yen)

Recipient	Position and Affiliation	Research Theme	Amount
Akikazu Fujita	Department of Molecular and Cell Biology and Biochemistry, Basic Veterinary Science, Faculty of Veterinary Medicine Kagoshima University Professor	Technical development of analyzing fatty acids distribution in the biological membrane at a nanoscale level for understanding the mechanisms of physiological unsaturated fatty acids functions	3,000,000
Toshiharu Saiki	Department of Electronics and Electrical Engineering Keio University Professor	Development of Gold Nanoparticle Assay Device Employing Nanopore Filter towards Liquid Biopsy	4,000,000
Keisuke Isobe	RIKEN Center for Advanced Photonics Researcher	Development of a super-resolution deep imaging technique and an optical stimulation technique for brain functional network analysis	4,000,000
Yusuke Ohba	Faculty of Medicine Hokkaido University Professor	Development of a pallet of FRET-based biosensors for the measurement of tyrosine kinase activity in patient-derived living cancer cells	4,000,000

Kazuhide Sato	Nagoya University Institute for Advanced Research (IAR), Dept of Respiratory Medicine Nagoya University Designated Assistant Professor (selected-YLC program)	Development of the method for elucidation of the mechanism of photo-induced cell death with nano-imaging and analysis	4,000,000
Yuhei Hayamizu	Tokyo Institute of Technology Associate Professor	2D nanomaterial biosensor with self-assembled peptides for cell monitoring	4,000,000
Kuniyuki Kakushima	Department of Electrical and Electronic Engineering, School of Engineering Tokyo Institute of Technology Associate Professor	High sensitive SiC x-ray detector	3,000,000
Hiroshi Ujii	Research Institute for Electronic Science Hokkaido University Professor	High-sensitive DNA mapping using plasmonic remote tip-enhanced Raman scattering microscopy	4,000,000
Jun Takeuchi	BIP.MRI. Tokyo Medical and Dental University Associate Professor	Production of the functional on-chip device with neurons-cardiomyocytes to evaluate medicine effect and toxicity.	4,000,000
Futoshi Suizu	Division of Cancer Biology, Institute for Genetic Medicine Hokkaido University Associate Professor	Development of phospholipid imaging technology for clinical research applications	4,000,000
Atsushi Matsuda	Department of Biochemistry Keio University School of Medicine Instructor	Development of the innovative glycome analysis focused on the exosomal glycosylation and clinical application	4,000,000
Koji Hisatake	Faculty of Medicine University of Tsukuba Professor	Development of a measurement technique of uncoupling protein-1 by non-invasive in vivo fluorescence imaging	4,000,000
Takashi Tsuboi	Department of Life Sciences, Graduate School of Arts and Sciences The University of Tokyo Professor	Development of fluorescent protein-based intracellular metabolism sensors	4,000,000

Hiroyasu Nakano	Department of Biochemistry, Toho University Graduate School of Medicine Professor	Development of a novel FRET biosensor to monitor necroptosis and elucidation of the mechanism underlying the release of DAMPs	4,000,000
Hideaki Hisamoto	Department of Applied Chemistry, Graduate School of Engineering Osaka Prefecture University Professor	Development of smartphone detection-type, highly sensitive, simple, and multi analyte diagnostic device for telemedicine using a dye thin film of extreme concentration	4,000,000
Jiro Miura	Dental Hospital Decision for Interdisciplinary Dentistry Osaka University Assistant professor	Development of highly precise detection method for Advanced Glycation End-products	4,000,000
Takao Iwawaki	Division of Cell Medicine, Department of Life Science, Medical Research Institute Kanazawa Medical University Professor	Reporter system for visualization of mitochondrial dysfunction in vivo	3,000,000
Ryo Sudo	Department of System Design Engineering Keio University Associate Professor	Measurement of bile circulation process based on hepatobiliary tissue engineering	4,000,000
Daisuke Ono	Department of Neuroscience II, Research Institute of Environmental Medicine Nagoya University Assistant professor	Development of non-invasive new bioluminescence imaging of cellular functions	4,000,000
Marie Oshima	Institute of Industrial Science The University of Tokyo Professor	Development of an integrated simulation system combined with medical image data for clinical studies	4,000,000

**Junior Researcher Grants**

(Yen)

Recipient	Position and Affiliation	Research Theme	Amount
Takayuki Umakoshi	Department of Applied Physics Osaka University Assistant professor	Development of wavelength-independent surface-enhanced Raman spectroscopy and its application for single biomolecule analysis	2,000,000

Hiroya Asami	Department of Chemistry, Faculty of Science Gakushuin University Assistant Professor	Development of gas-phase CD spectroscopy using IR-ablation of droplet beam: Secondary structural analysis of protein	1,500,000
Yuta Kurashina	Department of Mechanical Engineering, Faculty of Science and Technology Keio University Research Associate	Cell adhesion measuring device using acoustic radiation pressure generated from ultrasonics	2,000,000
Yoichi Shimizu	Kyoto University Hospital Assistant Professor	Development of a novel activatable probe for optacoustic imaging of cancer	2,000,000
Yutaka Fujimoto	Department of applied chemistry, School of Engineering Tohoku University Assistant professor	Development of new scintillator devise for photon-counting X-ray-CT	2,000,000
Tatsuyuki Yoshii	Life Science and Applied Chemistry, Department of Engineering Nagoya Institute of Technology Assistant Professor	Highly sensitive detection of cellular reactive species using protein cluster	2,000,000
Kohei Sano	Laboratory of Biophysical Chemistry Kobe Pharmaceutical University Lecturer	Development of sensitive magnetic resonance/photoacoustic imaging probes for evaluating tumor malignancy	1,500,000
Hirofumi Nogami	Faculty of Engineering Kyushu University Assistant professor	One-chip multi functional MEMS sensor for monitoring skin condition	2,000,000
Tomoyo Shiramatsu	Research Center for Advanced Science and Technology The University of Tokyo Project Research Associate	Development of methods to elucidate action mechanism of vagus nerve stimulation on cortical network	2,000,000
Toshiyuki Kowada	Institute of Multidisciplinary Research for Advanced Materials (IMRAM) Tohoku University Assistant Professor	Development of small-molecule probes for photo-regulation of signal transduction	2,000,000

Tomoko Inose	Nanomaterials and Nanoscopy, Research Institute for Electronic Science Hokkaido University Assistant Professor	LSPR biosensors for ultrasensitive microRNA detection in solution	2,000,000
Yuuki Kurebayashi	Graduate School of Pharmaceutical Science University of Shizuoka Research associate	Development of detection technology of drug-resistant influenza virus by viral sialidase imaging	1,500,000

**Investigative Research Grants: multi-year grants (two years)**

(Yen)

Recipient	Position and Affiliation	Research Theme	Amount
Masafumi Tada	Graduate School of Medicine, School of Public Health Kyoto University DrPH candidate	The evaluation of the diagnostic strategies incorporating troponin for non-ST elevation acute myocardial infarction in emergency room - a multicenter prospective cohort study -	3,000,000
Kunihiro Ichinose	Department of Immunology and Rheumatology, Unit of Advanced Preventive Medical Sciences, Division of Advanced Preventive Medical Sciences Nagasaki University Graduate School of Biomedical Sciences Assistant Professor	A Study of relationship between pain and sleep disorder in rheumatic disease evaluated with polysomnography	3,000,000