



Masao Horiba Awards 堀場雅夫賞

Technical Field Selected for 2021 Masao Horiba Awards: Optical/spectroscopic measurement technologies for life science

The Masao Horiba Award was established in 2003, to highlight innovative work in analytical measurement technologies. This information is critical to understanding many phenomena and, thus, forms the basis of new scientific research. These properties also form the foundation for the transition of materials to industrial production. For product and process optimization, these analytical and measurement technologies are indispensable. I hope that the Masao Horiba Award, named after the founder of HORIBA, Ltd., will contribute to illuminating the achievement of researchers who are working hard in the field of analytical and measurement technology. We look forward to receiving many applications for this year's award.

Atsushi Horiba
Chairman & Group CEO
HORIBA, Ltd.

● Eligible fields for 2021 Masao Horiba Awards:

The award is focused on the optical/spectroscopic analysis and measurement technology which contribute to the advanced drug discovery and pharmaceuticals within the field of life science that increase the efficiency of development and production processes as well as applicable to other industries, specifically the technologies that encase the following aspects.

- 1) Measurement and automation technologies based on optical/spectroscopic techniques related to the production process of proteins or cells.
The result of the research will improve the efficiency of the production process, or is related to process control using a data science/data management system.
- 2) Analytical research for bio samples based on spectroscopic techniques in the field of drug discovery and manufacture.
The research takes into account the future industrialization or production process of cells, microorganisms, extracellular particles in the pharmaceutical field.
*We expect the applications relating to the interdisciplinary research and development on the sample preprocess utilizing microfluidic devices as well as the data analysis method applying data science.

● Eligibility of Applicant

An applicant should be a researcher or an engineer at a university or a public research facility worldwide, engaged in research and development in the field described above. The applicant should fulfill one of the following criteria:

- The applicant is expected to achieve outstanding academic or technological inventions or discoveries in research or development in a field eligible for this award.
- The applicant is expected to solve important academic or technological issues in the field eligible for this award. The potential of the applicant is taken into account and highly evaluated rather than his/her current achievement. Applications from outside Japan must be made at the invitation from an employee of a HORIBA Group company.

● Incentive

A certificate of commendation will be presented to each recipient of the 2021. Masao Horiba Award at the award ceremony to be held in Kyoto on October 19, 2021. A supplementary award which is a research subsidy of JPY1,000,000 yen will be presented in the first year, and the same amount of JPY1,000,000 yen will be presented in the next year. The award and the supplementary award will be given on the condition that the winners agree to have their research works to be disclosed to public.

● Submission Deadline

Application period: February 15 to May 14, 2021

Please visit our website to check the details of the application guideline: <http://www.mh-award.org/en/apply/>

● Screening Committee for the 2021 Masao Horiba Awards

Chairperson:

Hirofumi Takeuchi Emeritus Professor, Laboratory of Advanced Pharmaceutical Process Engineering, Gifu Pharmaceutical University

Judges:

Jürgen Popp	Professor, Scientific Director, Leibniz Institute of Photonic Technology, Jena, Germany
Rinta Ibuki	Professor, Research Center for Drug Discovery and Pharmaceutical Development Science, Ritsumeikan University
Kouhei Tsumoto	Professor, Department of Bioengineering, School of Engineering, The University of Tokyo
Masato Maekawa	Professor, Department of Laboratory Medicine, Hamamatsu University School of Medicine
Mikiko Uchigashima	Deputy Department Manager, Bio/Life Science Project, Sales Division, HORIBA, Ltd.
Shintaro Noguchi	Section Leader, BLS Solution Sales Team, Bio/Life Science Project, Sales Div. HORIBA, Ltd.

Our society seeks to cure disease, and goal that unites the world and the pharmaceutical industry relies on scientific advances in medicine, to drive innovation in medicines. In new collaboration of medical field and drug discoveries, macromolecule drugs derive from nucleic acid and antibody, as well as the pharmaceutical research using cells and extracellular endoplasmic reticulum became active along with the conventional small-molecule drugs.

As research fields diversified, the needs toward analysis methods became diversified, and there is a high expectation toward optical/spectroscopic technologies along with the conventional separation method. In order to disseminate the newly developed drug efficiently to the people, establishment of sophisticated production process responding to the each modality of the drug is also required. Measurement using optical/spectroscopic technologies is becoming also important for this requirement. In addition, the optical/spectroscopic methods have strong strengths as non-destructive or less damaging method for the live specimen. In order to take full advantage of this strength, development of the sampling and pretreatment method is also important in addition to the research on basic principle and hardware development. It is also obvious that not only the innovation of spectral and imaging but also data science approach to link these data to the actual phenomena is also important. This approach must contribute to R&D efficiency and production process improvement.

The Covid-19 pandemic has spread throughout the world, greatly increasing stress in our lives. The race to create a safe and effective vaccine is important not just to prevent the disease itself, but to reduce the additional health issues and suffering that result from systemic stress. Overall, the most effective approach to solve real problems, incorporates an interdisciplinary approach from basic research all the way to implementation.

Based on the background described above, the 2021 Horiba Masao Award solicits research in the field of life science, notably state-of-art optical/spectroscopic measurement technologies which have the potential to transform drug discovery and manufacturing processes. This award asks for research especially applicable to industry and that can be dedicated to production processes.

Masayuki Adachi, Dr. Eng.
President & COO
HORIBA, Ltd.



For detailed information, please visit our website.

Masao Horiba Awards website: <http://www.mh-award.org/en/>

