



Masao Horiba Awards 堀場雅夫賞

Call for Applications 2014

Message from Dr. Masao Horiba

It is extremely important for scientists and technical experts to understand and clarify substances for which the content, properties and behavior are as yet unknown. Solutions to these challenging problems require analytical instruments which use high-level science and technology. Although research on analytical technologies is extremely important, the necessity for such high-level technologies has not been well recognized among the general public or academic circles. This award has been established in the hope that it will provide a level of encouragement and motivation to academic persons who are working to establish new analytical fundamentals, an area that may be unspectacular but is key to all scientific fields. HORIBA looks forward to receiving many applications for this year's award.

April, 2014
Dr. Masao Horiba





2014 Masao Horiba Awards

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To mark the 50th anniversary of HORIBA, Ltd. in 2003, the HORIBA Group established an award to recognize young scientists' contributions to analytical science. This award is intended to support scientists, outside the HORIBA Group companies, who are devoting themselves to research and development of innovative technology in analysis and measurement. In addition, it aims to strengthen the position of analytical and measurement technology within the scientific and industrial world. Each year a technical field is targeted from the principles and fundamental technologies related to HORIBA's R&D activities. The award values unique research and development with the findings and potential that deserve global recognition.

For the 2014 Masao Horiba Awards which marks the 11th time, we are calling for entries on "gas measurement."

The substances in our surroundings take the form of solids, liquids, or gases. Gases are ubiquitous yet often taken for granted because most are invisible and/or difficult to perceive by touch. However, human beings maintain life by breathing air, energy production results from wind power generation or the combustion reaction of oxygen and fuel, and jet plane flight is enabled by the lift from air currents over their wings. There are other human activities utilizing the properties of gases that are too numerous to count, and it could be said that air or gases are more useful resources than normally imagined. Furthermore, it is difficult to assign ownership of atmospheric gases; in essence, a global common property.

Since gases are so important, "measurement" is indispensable to grasp the actual physical and chemical conditions. For example, vital to life on earth, is the 10 km band of atmospheric gases next to the surface called the troposphere. To place this in context, the troposphere is less than only 0.1% of the diameter of the earth, yet many activities of nature and man impact this thin "protective" layer. Understanding and controlling the influence of pollutants on the protective layer only becomes possible with technologies capable of gas measurement.

Gas measurement technologies also play important roles in industrial process and medical diagnosis. Exhaust gas measurement from industrial processes contribute to improve the process efficiency thus minimizing the burden on the environment. Measurement of inspired air from living organisms is used for evaluating characteristics of living organisms or diagnosis of some diseases. These examples show that gas measurement plays an important role to pull out useful information from invisible things.

The 2014 Masao Horiba Awards calls for applications on innovative measurement technologies or research connected to measurement technologies which are targeted for gases that exist in natural environments, gases discharged from industrial processes, or gases generated from reactions in humans. We welcome and encourage applicants who are engaged in the study of basic technologies for gas measurement and have the potential to become future leaders for measurement technologies.

Masayuki Adachi, Dr. Eng.
Chief of the Organizing Committee for 2014 Masao Horiba Awards
General Manager of Research & Development Division
Director
HORIBA, Ltd.



Guidelines for 2014 Masao Horiba Awards

Outline

The purpose of this award is to encourage and recognize scientists and engineers relatively early in their careers who are achieving distinguished results in the field of analytical science and technology. We cordially invite applications from researchers all over the world who are enthusiastically engaged in original research and development at universities or public research facilities.

Eligible Field of Technology

The 2014 Masao Horiba Awards calls for applications on innovative research in the measurement of chemical or physical properties of gaseous samples, such as composition, flow rate, temperature, and/or pressure. The research should fall into one or more of the following areas.

1. Research to establish new principles and/or approaches in gas measurements or to enhance established gas measurement technologies in functionality, e.g. response time or precision.
2. Research technologies related to sample handling to achieve advances in gas measurements, including technologies which may contribute to in-situ, non-sampling gas measurements.
3. Research to establish fundamental technologies applicable to gas measurements, such as detectors, components and/or materials.

The applied research shall be related to measurement technologies of gases as exist in natural environments, gases discharged from industrial processes, or gases generated from organisms. In addition, the research shall have the potential to demonstrate innovation in gas measurement technologies to provide new discoveries through advanced measurement technologies.

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.

Potential of the applicant is 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 2014 Masao Horiba Awards at the award ceremony.

A supplementary award will also be made. Research subsidy of JPY500,000 yen will be presented in the first year and the same amount yearly for the next two years.

The award and the supplementary award will be given on the condition that the winners accept the invitation to attend the award ceremony held in Kyoto on Oct. 17, 2014 and that the winners continue to meet the eligibility described above.

Application for the 2014 Masao Horiba Awards

Applicants are required to submit:

- i) a completed application form for the 2014 Masao Horiba Awards with 7 additional copies,
- ii) a signed recommendation letter written by the director/president of the institution or his/her supervisor using the designated form, with 7 copies and
- iii) a maximum three publications which are central to the applied research, 8 copies each.

For detailed information, please contact HORIBA office in your region.

Submission Deadline

Applicants must submit the above application documents to the HORIBA Group company employee who invited them to apply for the award by Friday, May 23, 2014.

Screening

The members of the Screening Committee for the 2014 Masao Horiba Awards listed below will determine the winners through examination of the achievements and future prospects of the applicants, based on their application documents.

Screening Committee for the 2014 Masao Horiba Awards

Honorary Chairperson: Dr. Masao Horiba, Supreme Counsel, HORIBA, Ltd.

Chairperson: Mr. Atsushi Horiba, Chairman, President and CEO, HORIBA, Ltd.

Deputy Chairperson: Dr. Takashi Ibusuki, Chief Adviser

Japan Environmental Management Association for Industry

Judges: Dr. Claire F. Gmachl, Eugene Higgins Professor of Electrical Engineering

Vice Dean, School of Engineering and Applied Science, Princeton University

Dr. Yoshihiro Deguchi, Professor

Institute of Technology and Science, The University of Tokushima

Dr. Kenichi Tonokura, Professor

Department of Environment Systems, Graduate School of Frontier Sciences, The University of Tokyo

Dr. Norio Miura, Professor

Project Division, Art, Science and Technology Center for Cooperative Research, Kyushu University

Mr. Kazuhiko Haruta, General Manager

Application R&D, Research & Development Division, HORIBA, Ltd.

Dr. Kyouji Shibuya

Advanced R&D Center, Research & Development Division, HORIBA, Ltd.

Results

Applicants will be notified of the screening results by the end of July, 2014.

Award Ceremony and Commemorative Seminar

Award ceremony and commemorative seminar for the 2014 Masao Horiba Awards, followed by a reception, will be held on October 17, 2014 at Shiran Kaikan, Kyoto University, Kyoto, Japan.

Publication of Awarded Research

Award-winning research will be published in HORIBA's technical journal *Readout*.

