Masao Horiba Awards
堀場雅夫賞

Call for Application
2009

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, 2009,
Dr. Masao Horiba

2009 Masao Horiba Awards

In 2003, to mark the 50th anniversary of HORIBA, Ltd., HORIBA Group established an award to recognize young scientist's contribution 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 specified technical field for the award is decided, with a focus on the principles and elemental technologies fostered by HORIBA. The award values unique research and development with the findings and potential that deserves a global recognition.

The technical field selected for the 2009 Masao Horiba Awards is 'The Analysis of the Surface of Materials for the Semiconductor and related Industries'. The surface includes that of silicon semiconductors, compound semiconductors, substrate and other materials provided or produced during production processes.

In today's society, fundamental technologies related to semiconductor electronic devices are indispensable and further development is strongly required to enrich our lives. In the silicon semiconductor field, significant miniaturization in device structures has been achieved, which realizes even faster and smaller devices with higher performance. In the field of flat panel displays, such as liquid-crystal displays, various technologies have been developed to achieve natural image expression comparable to the real world. These evolutions are the result of the developments not only in materials, ranging from organic to inorganic, or from metal, semiconductor to insulator, but also in production process technology that enables stable production. In order to accelerate these developments, analysis and control of the material surface are very important. Especially, the contamination control of the materials is indispensable. In fabricating semiconductor devices, several hundred processes are required with potential errors at all stages needing to be prevented from occurring. Thus strict control of surface condition is a pressing problem in the industry, with contamination control becoming increasingly important, along with the developments of materials and processing technology.

Considering these circumstances, the 2009 Masao Horiba Awards focus on contamination control of various surfaces of semiconductor materials and select the related analytical and measuring technologies as the field for application. We look forward to receiving applications from those who are actively engaged in research in this significant field that ranges from the fundamentals to practical applications, and whose competence can contribute to lead the future development of analytical and measurement technology.

Dr. Kozo Ishida
Chief of the Organizing Committee for the 2009 Masao Horiba Awards
Executive Vice President
HORIBA, Ltd.

Guidelines for 2009 Masao Horiba Awards

Outline

The purpose of this award is to encourage and recognize scientists and engineers with relatively short research 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.

Target Technology Fields

The selected field for the 2009 Masao Horiba Awards is the following analytical technologies concerning "Ultrasensitive and Nondestructive Detection of Surface Contamination on Semiconductor and related Materials."

1. Technology concerning ultrasensitive detection of surface contaminants:
   Development of novel principal techniques including those related to sensitivity improvement in infrared, visible, UV, and X-ray spectroscopy
2. Technology contributing to ultrasensitive contamination control:
   Ultrasensitive and nondestructive measurement technology contributing to the development or improvement of materials for semiconductor and related equipment

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 problems 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 2009 Masao Horiba Awards at the award ceremony.

A supplementary award will also be made. In the first year, a cash prize of JPY500,000 yen will be presented. Recipients will receive the same amount yearly for the next two years as research subsidy.

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. 19, 2009 and that the winners continue to meet the eligibility described above.

Application for the 2009 Masao Horiba Awards

Applicants are required to submit

i) a completed application form for the 2009 Masao Horiba Awards with seven additional copies,

ii) a signed recommendation letter written by the director/president of the institution or his/her supervisor using the designated form, with seven copies and

iii) maximum three publications which are central to the applied research, eight copies each.

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 29, 2009.

Screening

The members of the Screening Committee for the 2009 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 2009 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. Yohichi Gohshi, Executive Auditor, University of Tsukuba;
Fellow, International Institute for Advanced Studies

Judges: Dr. Tsuguo Sawada, Program Officer, Japan Science and Technology Agency;
Emeritus Professor of the University of Tokyo

Dr. Kouichi Tsuji, Professor, Graduate School of Engineering, Osaka City University

Dr. Hideyuki Ishida, Executive Vice President, Director of Research Division, Toray Research Center, Inc.

Dr. George Thompson, OBE FREng, Deputy Head of the School of Materials, The University of Manchester

Dr. Kiyoaki Hara, Director, HORIBA STEC, Co., Ltd.

Dr. Nobuyuki Naka, Semiconductor Systems R&D Dept., HORIBA, Ltd.

Results

Applicants will be notified of the screening results by the end of July, 2009

Award Ceremony and Commemorative Seminar

Award ceremony and commemorative seminar for the 2009 Masao Horiba Awards, followed by a reception, will be held on October 19, 2009 at Shiran Kaikan, Kyoto University, Kyoto, Japan.

Publication of Awarded Researches

Award-winning researches will be published worldwide in HORIBA's technical journal *Readout*, HORIBA Technical Reports.