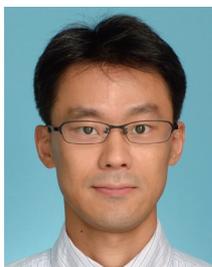


## SPECIAL ISSUE ON ENVIRONMENTAL SENSING

### PREFACE



We are surrounded by a huge number of chemicals in the global environment. Even if limited to chemicals registered in Chemical Abstract Services, more than 150 million chemicals have been designed and synthesized worldwide. We have to use these chemicals safely while considering their effect on the environment. From this viewpoint, environmental sensing is particularly important. Environmental sensing is the collection of environmental information inside and outside living creatures, using sensing techniques to detect environmentally important targets. Recently, rapid and simple environmental sensing techniques have also been required for application as decentralized screening tools. The research area of environmental sensing continues to progress from the research stage to the practical stage.

This special issue focuses on various fields related to environmental sensing. They include sensing systems for analyses of trace harmful chemicals, *in situ* sensing in the environment, and chemical sensors based on biological materials. They also include the development of sensing techniques as first-aid and on-site screening tools permitting easy detection suitable for analysis in the environmental fields.

This special issue contains seven papers categorized into electrochemical, optical, and gravimetric sensing to detect important targets (e.g., oligonucleotides, antibodies, hydrogen peroxide, formaldehyde, and other volatile organic compounds) based on novel platforms (e.g., graphene oxide nanocomposites, DNA aptazymes, and a robot-based monitoring system). There are two invited papers. One is a review paper from Professor Hanna Radecka in Poland on universal platforms for the electrochemical sensing for anions, oligonucleotides, and antibodies. The other is a paper from Professor Zhigang Zhu in China on novel sensors for quantitative monitoring of environmental hydrogen peroxide.

We would like to express our gratitude to all authors, reviewers, and editors. We would like to give our special thanks to Professor Kohji Mitsubayashi, Tokyo Medical and Dental University, Japan, and Editor of *Sensors and Materials*, for inviting us to edit this special issue. We would also like to express our thanks to Ms. Misako Sakano, the leader of the Editorial Department of MYU K.K., for her great help and encouragement in organizing this issue. We would be most grateful if this issue can widely leverage sensor researches and contribute to

further progress of various research fields of sensors, including the field of environmental sensing.

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