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## FOREWORD

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### Special Section on Towards the Realization of Organic Molecular Electronics

Research of organic molecular electronics has a long history and has developed through several steps of progress. For example, the idea of “molecular electronic devices” was proposed more than 20 years ago and continuous researches have been conducting by many scientists to realize practical applications of the organic molecular devices for cultivating a new era of devices. However, wide applications of molecular devices have not been attained yet. Several reasons being considered to explain this situation, one of which may be that much progress of so called “microelectronic technologies” has been attained in this period and it has been supporting long time the highly advancing technological and information society. However, the microelectronic technologies are recently facing very fundamental physical, chemical and materials limitations in terms of operation speed, integration and sensitivity. In order to overcome these difficulties, again the organic molecular devices attract much attention as the most essential technologies in the next generation society. In fact, recent progress on molecular electronic technologies is remarkable and, for example, made it possible to utilize even a single molecular device.

In these situations, it was quite meaningful that the 4th international symposium on organic molecular electronics (ISOME2006) was took place this year on May 18–19 in Saitama University. In the symposium, wide range of researches on organic molecular electronics were presented by invited speakers as well as contributed speakers including fabrication, evaluation, bio-electronics, field effect devices, sensors, displays and so on.

Selected papers from the Symposium are summarized in this “Special Section on Towards the Realization of Organic Molecular Electronics”. These papers are the most attractive and progressive topics on the recent progress of organic molecular electronics.

We hope this special section will provide readers the fruitful information for the future development of this field.

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**Teruaki Katsube** (*Member*) was born in Japan in 1941. He received his M.Sc. (electrical engineering) degree in 1971, and Ph.D. degree in 1974 from University of Tokyo. From 1971 to 1981 he held a Post-Doctoral Fellowship at the University of Pennsylvania. He is currently a professor at the Department of Information and Computer Sciences, Saitama University. His research activities covers semiconductor surface physics, microelectronic process technology, semiconductor chemical sensors, environmental and medical sensing systems.



**Mitsuyoshi Onoda** (*Member*) was born in Okayama prefecture, Japan on August 19, 1951. He received the B.Eng. and M.Eng. degrees in department of Electrical Engineering from Himeji Institute of Technology, in 1975 and 1977, respectively. He received the D.Eng. degree in department of Electrical Engineering from Osaka University, in 1983. He is now a Professor of University of Hyogo. He has been mainly engaged in research of electronic properties and applications of organic materials. In 1994, He studied as a visiting professor at a laboratory of professor Alan G. MacDiarmid (the Nobel Prize for chemistry in 2000) from University of Pennsylvania. Professor Onoda is a member of the Institute of Electrical Engineers of Japan, the Society of Polymer Science, Japan, the Japan Society of Applied Physics, Japanese Liquid Crystal Society and the Institute of Electrical and Electronics Engineers, Inc.



**Yuki Hasegawa** (*Nonmember*) received the M.Edu. degrees in 2001, and D.Eng. degree in 2005 from Saitama University. She is currently a research associate at the Department of Information and Computer Sciences, Saitama University. Her research activities cover informational instrumentation technology and environmental sensing systems. She is advancing the research that the relationship between bioelectrical potential and biological activity of plants.

