

## 1. Overview

Bioengineering had been considered as a concrete discipline of mechanical engineering but not just an inter-discipline, and been expected to be an indispensable field for all mechanical engineers in the new century. In fact, almost a half of twenty JSME technical divisions have recently included the terminology "bioengineering" and/or related ones in their activity keywords.

Dr. Kazuo Tanishita, the Chair of Executive Committee for the fiscal year of 2000-2001, pointed out in his inaugural address. "During the first decade of the thirteen-year history of JSME Bioengineering Division, the research attention had been mainly focused on the organs and tissue scale problems and the methodology used there had come from the conventional and established mechanical engineering fields. We are now in the second decade in which the research attention has extended not only to tissues but also to cells and molecules of microscopic scale, and the new and original methodology has been expected for the contemporary bioengineering studies in the new century."

Dr. Masaaki Sato, the Vice Chair of Executive Committee, is commanding a project team seeking the new direction of this division, and the first step will start on the first year of this century.

## 2. Events Coming

A) The 13th JSME Bioengineering Conference, 16 and 17 January 2001, Sendai: The annual conference of JSME Bioengineering Division will be coming soon as the first one of the 21st century under the cochairship by Dr. Masaaki Sato and Dr. Hiroshi Wada. The Special Organized Session has been planned for "Measurement of physical phenomena in single cell", "Biomechanics of aneurysm", "Skin related measurement" and "Artificial organs bioengineering". An international symposium on "Cochlear amplification caused by outer hair cell (OHC) motility" has been organized by Dr. Wada as a part of the conference.

B) Welfare Engineering Symposium, 7 August 2001, Tokyo: Bioengineering Division and Dynamics, Measurement and Control Division decided to launch the first special symposium on Welfare Engineering seeking key technology for the forthcoming era of advanced aged-society. Attention will be focused on the hard and soft technologies common for the youngsters and the elders and for the abled and the disabled, and the role of mechanical engineers will be discussed.

C) Bio-salon: Technical Committee has been planning a series of Bio-salon meeting for special lectures with free discussion. The 16th Bio-salon will be held on 15 January 2001 in Sendai on "Cellular control/adaptation mechanism", and the 17th Bio-salon will focus on "Brain function" on 6 April 2001 in Tokyo.

D) JSME Annual Convention Meeting 2001, 27-30 August 2001, Fukui: The technical committee is going to organize one forum and four joint organized sessions with Robotics and Mechatronics Division as well as original forum and sessions by Bioengineering Division.

## 3. Events Report

A) JSME Annual Convention Meeting 2000, 1-4 August 2000, Nagoya: Technical Committee of Bioengineering Division, the Chair, Dr. Toshio Tsuta, organized two forums "Model of

generation, differentiation and regeneration" and "Bioengineering new trends". Another forum on "Biorobotics" was arranged jointly with Robotics and Mechatronics Division. Organized Session on "Multi-physics problems in cardiovascular system" was organized jointly with Computational Mechanics Division, and three sessions on "Medical robotics and biomimetics", "Rehabilitation and healthcare technology" and "New component technology in biorobotics" were organized in cooperation with Robotics and Mechatronics division.

B) The 11th Autumn Bioengineering Conference and Seminar, 20 and 21 October 2000, Niigata: Under the chairmanship of Dr. Toshiaki Hara, this meeting is composed of original research presentation mainly by but not limited to young researchers and tutorial seminar lectures: "Bone: Formation mechanism and turn over" by Dr. Naoto Endo, "Primary research area of biomechanics" by Dr. Kozaburo Hayashi, "Blood vessel geometry, shear stress and arteriosclerosis" by Dr. Ryuhei Yamaguchi and "Biomechanical consideration of osteoarthritis" by Dr. Yoshio Koga.

C) Bio-salon: The topics of the 14th Bio-salon was "Biomimetics", and was held on 13 January 2000 in Kanazawa as a joint meeting with the research committee on Biomimetic design, Design and Systems Division. The 15th Bio-salon of 28 March 2000 in Tokyo was devoted for the "Physics and technology of biomechanics", especially for the microbot motor mechanism and microanalysis device.

## 4. Research Committee and Technical Sections

A) Research Committee on Mechanical and Welfare Engineering for the Advent of an Aging Society (Chair, Dr. Toshiaki Hara): The committee had eleven meetings since June 1998, and is planning a symposium summarizing the three-year activities in April 2001.

B) Technical Sections: Bioengineering Division has six technical sections on "Biomechanism and Its Application" (Chair, Dr. Takami Yamaguchi), "Biosystems and Bioengineering" (Chair, Dr. Teruo Murakami), "Instrumentation and Mechanics - Application to Living Bodies" (Chair, Dr. Takeshi Karino), "Bio-Machine Systems" (Chair, Dr. Ken Ikeuchi), "Control and Information - Application to Living Body" (Chair, Dr. Hiroshi Wada) and "Locomotion of Biological Creatures" (Chair, Dr. Hirohisa Morikawa)

## 5. Division Awards

During the 12th JSME Bioengineering Conference in Kanazawa, the following persons were awarded:

### 6th Bioengineering Award

Dr. Tadashi Sasada (Chiba Institute of Technology)  
Dr. Kozaburo Hayashi (Osaka University)

### 8th Bioengineering Achievement Award

Dr. Masaaki Sato (Tohoku University)

### 8th Seguchi Award (Young Investigators Award)

Dr. Jiro Sakamoto (Kanazawa University)  
Dr. Taiji Adachi (Kobe University)

## 6. Special Issue, JSME International Journal

Special Issue on Bioengineering was published in JSME International Journal, Series C, Vol.43, No.4, December 2000.

Please visit our web site "<http://www.jsme.or.jp/bio/index-e.html>".