

Recent Progress and Future Perspectives in Biomechanics Research
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Approximately 10 years ago, we performed a three-year large-scaled, national research project entitled "Biomechanics of Structure and Function of Living Cells, Tissues, and Organs" in Japan, being selected and financially supported by the Ministry of Education, Science and Culture as one of the most important and priority areas in science. This project tremendously contributed to the progress of biomechanics research and the development of young investigators in the field. The results obtained from the project were very highly evaluated in the international community of biomechanics. As one of the conclusions, we proposed five areas which we must focus on in the nearest future; 1) Cellular and molecular biomechanics, 2) Functional adaptation and remodeling, 3) Computational biomechanics, and 4) Application to engineering. Two years later, in 1998, NIH Bioengineering Consortium Meeting in USA (BECOM) held in Washington, DC selected three highest impact areas in biomechanics, which were 1) Adaptation to stress, 2) In vivo biomechanics, and 3) Molecular biomechanics. Following our above-mentioned project, we have started another four-year national project with the title of "Biomechanics at Micro- and Nanoscale Levels" since 2003, again financially supported by the same Ministry. In the background of these activities and my own experience, recent progress and future perspectives of biomechanics will be lectured and discussed.