

## List of Speakers

September 6, 2005

### Greetings (Evening) (6) (2 Japanese and 4 Germans)

	Name, Affiliation		
1	Prof. Shinichi Hirano President, Nagoya University	Host Greetings	
2	Prof. Nobuo Sawaki Dean, Graduate School of Engineering	Greetings	
3	Mr. Michael Welker Hessian Ministry of Science and Art, Wiesbaden	Guest Greetings	
4	Mr. Karl Wollin Federal Ministry of Education and Research	Greetings	
5	Dr. Torsten Rossmann, Biotechnik-Zentrum, Technische Universität Darmstadt	Greetings	
6	Mr. Uwe Schröder German Embassy, Tokyo	Greetings	

### Keynotes (5) (4 Japanese and 1 German)

	Name, Affiliation	Title	Abstract
Sat-Morning_1	Prof. Yuji Matsuzaki Nagoya University	Bionics and biomechanics in Japan	
Sat-Morning_2	Dr. Rudolf Bannasch, Evologics, Coordinator BIOKON – Bionics-Network of Excellence	Bionic techniques for underwater applications	
Sat-Afternoon_3	Prof. Toshio Fukuda Nagoya University	Robotics, human beings and future	
Sun-Afternoon_1	Prof. Hidenori Kimura Bio-Mimetic Control Research Center RIKEN	Effects of intrinsic noise in gene regulatory network	
Sun-Afternoon_2	Prof. Osamu Takai EcoTopia Science Institute Nagoya University	Biomimetic nanotechnology	

### Session Sat-Morning-I (1 Japanese and 3 Germans) Hydro- and Aerodynamics

	<b>Name, Affiliation</b>	<b>Title</b>	<b>Abstract</b>
<b>1</b>	Prof. Cameron Tropea (T. Michel, H. Marschall, C. Tropea) Strömungslehre und Aerodynamik, Technische Universität Darmstadt	Hydrodynamics of ultrahydrophobic surfaces	
<b>2</b>	Dr. Fritz-Olaf Lehmann	The fluid dynamics of flapping insect wings and its significance for the construction of biomimetic MAVs	
<b>3</b>	Dipl.-Biol. Tatjana Hubel (T. Hubel, C. Tropea) Strömungslehre und Aerodynamik Technische Universität Darmstadt	Wake structure of flapping wings	
<b>4</b>	Dr. Naomi Kato Dept. of Naval Architecture and Ocean Engineering, Graduate School of Engineering Osaka University	Study of aqua bio-mechanisms and those applications to ocean engineering	

### Session Sat-Afternoon-II (1 Japanese, 4 Germans and 1 Brazilian) Plants and Insects

	<b>Name, Affiliation</b>	<b>Title</b>	<b>Abstract</b>
<b>1</b>	Dr. Deane Harder, Director Botanical Garden, Universität Freiburg	Plant biomechanics for technical applications	
<b>2</b>	Dr. Stanislav Gorb, Evolutionary Biomaterials Group, Max-Planck-Institut für Metallforschung, Stuttgart, Germany	Biological attachment systems as a possible source for biomimetics: What can we learn from evolution?	
<b>3</b>	Prof. Hidetoshi Kobayashi Department of Mechanical Science and Bioengineering, Graduate School of Engineering Science Osaka University	Deployable structure observed in leaves and flowers of plants	
<b>4</b>	Dr. Per Loethman (Neinhuis, Cerman, Barthlott), Institute of Botany,	Structured plant surfaces: patterns, functions and biomimetic applications	

	Technische Universität Dresden		
5	Ms. Dipl.-Ing. Dagmar Voigt (Voigt, D.; Gorb, E.; Gorb, S.) Evolutionary Biomaterials Group, Max-Planck-Institut für Metallforschung, Stuttgart, Germany	Plant surfaces as a terrain for the insect locomotion	
6	Dr. Pablo Perez-Goodwyn Laboratory of Insect Ecology, Graduate School of Agriculture Kyoto University	Friction- and wear-reducing micromechanical devices in cricket's stridulation mechanism.	

### Session Sat-Afternoon-III (6 Germans) Structures and Functions

	Name, Affiliation	Title	Abstract
1	Prof. Manfred Hegger, Department of Architecture, Technische Universität Darmstadt	Bionic principles in architecture	
2	Dr.-Ing Lothar Harzheim, ITDC, Adam Opel AG, S1-01 Optimization and Robust Engineering, 65423 Rüsselsheim	Optimization of engineering components using the growth rule of trees and bones	
3	Dipl.-Ing. Alexander Sauer (C. Mattheck, A. Sauer, R. Kappel), Forschungszentrum Karlsruhe	Shear killers in Nature	
4	Dr.-Ing. Iwiza Tesari (C. Mattheck, I. Tesari, K. Bethge), Forschungszentrum Karlsruhe	Notch shape optimisation with pocket calculator	
5	Dipl.-Ing. Roland Kappel (C. Mattheck, R. Kappel, A. Sauer, I. Tesari), Forschungszentrum Karlsruhe	Rope controlled lightweight design	
6	Dipl.-Ing. Michael Hermann, Thermal Systems and Buildings, Fraunhofer Institute for Solar Energy Systems ISE, Freiburg	Fractherm - fractal hydraulic structures for solar absorbers and other heat exchangers	

## Session Sun-Morning-I (5 Japanese) Biomedical and Biomechanical Engineering

	<b>Name, Affiliation</b>	<b>Title</b>	<b>Abstract</b>
<b>1</b>	Prof. Taishin Nomura Department of Mechanical Science and Bioengineering, Graduate School of Engineering Science Osaka University	Modeling of motor coordination during human gait and pedaling	
<b>2</b>	Prof. Goro Obinata Center for Cooperative Research in Advanced Science and Technology Nagoya University	Model based approaches for designing assistive devices	
<b>3</b>	Prof. Kazunori Hase Nagoya University	An integrated model of cardio-vascular-neuro-musculo-skeletal system for human movement studies	
<b>4</b>	Prof. Hiroyuki Honda Department of Applied Chemistry, Chemical Engineering and Biotechnology Nagoya University	Heat Immunotherapy using magnetic nano-particle	
<b>5</b>	Dr. Naoe Hosoda Eco-Device Group, Ecomaterials Center National Institute for Materials Science	A challenge to a biomimetic joining technology	

## Session Sun-Afternoon-II (3 Japanese and 4 Germans) Neurosystems, Intelligence and Robotics

	<b>Name, Affiliation</b>	<b>Title</b>	<b>Abstract</b>
<b>1</b>	Prof. Dr. Gerald Langner Neuroacoustics, Dept. of Biology, Technische Universität Darmstadt	A model of temporal processing in the auditory system. Keywords: hearing, computer simulation, neural networks, functional mapping, periodicity, pitch	
<b>2</b>	Prof. Dr. Volker Graefe (Rainer Bischoff, V. Graefe), Head of the Intelligent Robots Lab, Faculty of Aerospace Engineering, Bundeswehr University München, D-85577 Neubiberg	A biomimetic approach to the realization of robot intelligence	
<b>3</b>	Dr. Harald Luksch, Center of Bionics, Institute of Biology II, Rheinisch-Westfälische Technische Hochschule Aachen	Neurobiology, computational intelligence and bio-hybrid-systems	
<b>4</b>	Prof. Toshiyuki Nakagaki Hokkaido University	How does an amoeba tackle some geometrical puzzles?	
<b>5</b>	Dr. Toshiharu Mukai (Toshiharu Mukai and Zhiwei Luo) Bio-Mimetic Control Research Center, RIKEN	Soft swimming robots using artificial muscle	
<b>6</b>	Prof. Dr. Oskar von Stryk, Department of Computer Science, Technische Universität Darmstadt, www.sim-opt.de	Bionic Robot Arms and Legs	
<b>7</b>	Prof. Makoto Kaneko (Mitsuru Higashimori) Hiroshima University	Design and experiment of the 100G capturing robot	