

For all inclusions under
APACM news please
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Professor Genki Yagawa

awarded the
Japan Academy Prize

Professor Genki Yagawa, Emeritus Professor of **University of Tokyo** and currently Professor of Toyo University, was awarded the **Japan Academy Prize** at the 99th Award Ceremony, which took place with their Majesties the Emperor and Empress at the **Japan Academy in Tokyo** on **June 1, 2009**. An Award Ceremony has been held every year since 1911, with 2009 marking the 99th such Ceremony. Their Majesties the Emperor and Empress invited Professor Yagawa and other winners of the Prize to the Imperial Palace for dinner after the Ceremony.

The Japan Academy Prize is the highest prize awarded to about 10 individuals who have achieved notable research landmarks in a discipline of humanities and natural sciences. This criterion certainly meets his achievement on the computational mechanics and applied mechanics.

Genki has developed a new massively parallel computing method. It has been proved that the method can solve huge problems with high accuracy and high performance when applied to computational solid mechanics problems such as probabilistic fracture mechanics of nuclear pressure vessels. He has also created a new method called the Free Mesh Method. These methods, being quite suitable for massively parallel environments and embedded within the internationally well-known codes, has been employed by many researchers and engineers worldwide. He has published more than 370 journal papers and authored or edited 60 text books or special issues of journals.

In addition to these achievements, his current and past activities include: General Chair of First International Conference on Computational Mechanics(1986), General Chair of 3rd Asia-Pacific Congress on Computational Mechanics (2007), Honorary Member of Executive Council of International Association for Computational Mechanics, Founding Member and Secretary General of Asia-Pacific Association for Computational Mechanics, Council Member of Science Council of Japan (appointed by Prime Minister), President of Japan Society for Industrial and Applied Mathematics, Founding Chair of Computational Mechanics Division of Japan Society of Mechanical Engineers, Founding Editor-in-Chief of International Journal for Computational Mechanics (Springer), and Associate Editor or Editorial Board Member of 14 major international journals.

Amongst his many awards and honors are the Toray Science and Technology Prize (2009), the IACM Award (2008), the APACM Zienkiewicz Medal (2007), the Prime Minister Award (2007), the Minister of Science and Technology Award (1998), ASME Fellow (1993), the JSME Computational Mechanics Award (1992), the Gigaflop Performance Award of Cray Research (1990).

Figure 1:
Professor Genki Yagawa



Figure 2:
Their Majesties the Emperor and Empress at the Japan Academy in Tokyo



New Executive Council for JACM

The Japan Association for Computational Mechanics (JACM) elected a new executive council in March 2009. After six years as president of JACM, Prof. Takashi Yabe, Tokyo Institute of Technology left the board.

The new president is

Prof. Noriyuki Miyazaki : *Kyoto University*

e-mail address miyazaki@mech.kyoto-u.ac.jp

URL <http://solid.me.kyoto-u.ac.jp/English/English-frame.html>

Vice-presidents are as follows:

Prof. Takayuki Aoki : *Tokyo Institute of Technology*

e-mail address taoki@gsic.titech.ac.jp

URL <http://www.sim.gsic.titech.ac.jp/English/Member/taoki.html>

Prof. Shinobu Yoshimura (Secretary General) : *University of Tokyo*

e-mail address yoshi@sys.t.u-tokyo.ac.jp

URL <http://save.sys.t.u-tokyo.ac.jp/prof/index.html>

The JACM has officially started on December 17, 2002. The purpose of JACM is to establish the communication network over the scientists related to computational mechanics. The first president was Prof. Takashi Yabe and he contributed very much to establish the JACM.

The JACM differs from ordinary societies, but is rather a loosely coupled union of 23 societies related to computational mechanics at present. Please visit the web-site at

<http://www.sim.gsic.titech.ac.jp/jacm/> to see the societies affiliated with the JACM. These societies have their own members related to computational mechanics but in different areas. Among them, the computational mechanics division (CMD) of JSME (The Japan Society of Mechanical Engineers) is one of the largest organizations and 5300 members are registered.



*Prof. Noriyuki
Miyazaki*



*Prof. Takayuki
Aoki*



*Prof. Shinobu
Yoshimura*

ADVENTUREcluster receive Award

The team of the development of **ADVENTUREcluster** received the Award by **Minister of Education, Culture, Sports, Science and Technology**, Japan

On **April 14, 2009**, a prestigious award by Minister of Education, Culture, Sports, Science and Technology, Japan was given to a team of Dr. Hiroshi Akiba (Allied Eng. Corp.), Professor Shinobu Yoshimura (University of Tokyo and Vice President of JACM), Dr. Tomonobu Ohyama (Allied Eng. Corp.) and Professor Takashi Kawakami (Toyama Prefecture University) for the development of Large Scale Parallel Finite Element Analysis System, ADVENTUREcluster. The system was successfully applied to perform a large scale drop impact analysis of mobile phone with 300 million DOFs mesh on Blue Gene/L with 8192 processes. The system has been widely used in various engineering fields such as automobile, electronics, heavy, steel and energy industries. The open source version, ADVENTURE can be freely downloaded at :

<http://adventure.sys.t.u-tokyo.ac.jp>

Figure :

*From left to right
Professor Takashi Kawakami
from Toyama Prefecture University
Dr. Hiroshi Akiba
from Allied Eng. Corp.
Professor Shinobu Yoshimura
from University of Tokyo
Dr. Tomonobu Ohyama
from Allied Eng. Corp.*



The World Class University (WCU) Project in the School of Mechanical Engineering



at Sungkyunkwan University

(ME@SKKU),

South Korea



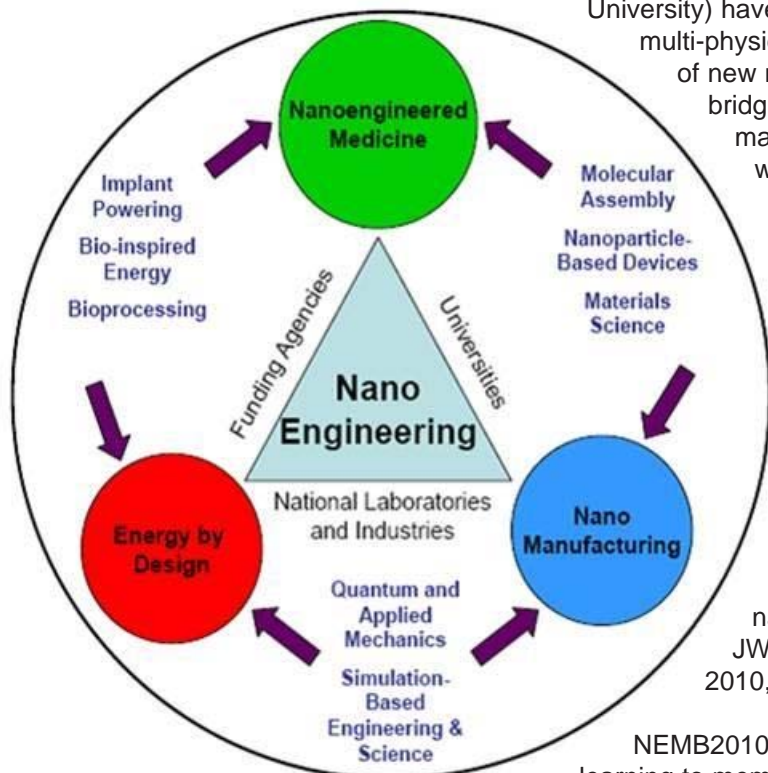
The **WCU** project was recently launched by the **Korean Ministry of Education, Science and Technology**. By recruiting and retaining world-class scholars through three project types (Type1: Establishing new academic departments or specialized majors, Type2: Employing foreign scholars at existing academic program, Type3: inviting distinguished world-class scholars like Nobel Prize laureate), the Korean Government intends to bring innovation to the education and research environment of Korean universities, leading to the creation of top-notch research-oriented institutions of higher education in Korea. ME@SKKU has received two Type3 grants for the next five years (\$1M per grant) in the area of "Simulation based Engineering & Science (SBE&S)" as follows:

Project I: Development of Multi-Scale Simulation Technique for Nano & Bio Enabling Material Design

Dr. Moon Ki Kim (PI, SKKU) & Dr. Wing Kam Liu (Co-PI, Northwestern University) have proposed to develop a general multi-scale

multi-physics simulation technique for analysis and design of new nano and bio materials, devices, and systems by bridging scales from nano (atomistic) to micro and macro (continuum) systems. Dr. Liu is one of the world-class scholars in computational mechanics.

He has published more than 340 peer-reviewed journal articles in the areas of, but not limited to, nonlinear finite element method, immersed finite element method, reproducing kernel particle method, and multi-resolution continuum theory. He also served as the General Chairman of World Congress on Computational Mechanics in Los Angeles CA, 2006. As the Chair of the ASME Nano Council, he proposed and developed the ASME 1st Global Congress on NanoEngineering for Medicine and Biology (NEMB2010), advancing healthcare through nanoengineering and computing, to be held at the JW Marriott in Houston, TX on February 20-24th, 2010, <http://www.asmeconferences.org/nemb2010/>.



NEMB2010 provides a forum for idea exchange and

learning to members of the engineering community, scientists and clinicians involved in the development of new tools and materials in nanomedicine, experts from industry in the field of life sciences and all those investigating the potential of future emerging technologies. NEMB2010 will focus on the integration of engineering sciences, mechanical engineering and nanotechnology to aid in addressing fundamental problems in biology and medicine and in

developing devices for the early detection, imaging and cure of diseases. Dr. Kim has worked on elastic network modeling (ENM), a mechanical engineering based atomistic modeling technique applied to protein dynamics study, for the last 10 years leading to a new inter-disciplinary research field in computational structural biology. PI & Co-PI will co-teach newly-created graduate-level courses including Advanced Nanomechanics and Multi-scale System Analysis at SKKU, co-advise M.S. and Ph.D. students, and collaborate on 3D Multi-Scale Simulation, Therapeutic and Diagnostic Application of Nanodiamond, Human Conformational Disease, and Protein-Protein Interaction.

*For any inquiry,
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Project II: Application of Interdisciplinary Simulation Technologies for Environmental Friendly Artificial Structure Design

Dr. Jaeboong Choi (PI, SKKU), Dr. Doosam Song (Co-PI, SKKU), and Dr. Genki Yagawa (Co-PI, Toyo University) have launched an interdisciplinary research team to develop large scale simulation technique for sustainable, low-energy design against global warming and urbanization, prediction of environmental change to minimize and prevent disaster and contamination, and convergence system design based on ecological environment. Dr. Yagawa is also a world-famous scholar in computational mechanics publishing more than 380 journal papers on structural engineering, fracture mechanics, fluid-structure interaction, and structural optimization. He is a leader of multi-scale multi-physics phenomena’s simulation project of Japan, a member of the Engineering Academy of Japan, the Executive Council of International Association for Computational Mechanics, and a Fellow of ASME. He also served as the first Chairman of the JSME Computational Mechanics Division, the first Editor-in-Chief of International Journal for Computational Mechanics, and the chairman of the first International Conference on Computational Mechanics. Dr. Choi’s research interest is an interdisciplinary convergence system design based on ecological imitation and IT technology while Dr. Song has focused on CFD based outdoor environmental design for comfort and energy saving. As a part of collaborative education and research, a large-scale parallel analysis system called ADVENTURE as well as earth simulator will be introduced through this project.



The synergic outcome of these two WCU projects will be annually disseminated to Computational Mechanics communities through an international workshop for SBE&S convened by ME@SKKU. As a result of the WCU projects, it is strongly anticipated that SKKU will be one of the world-class institutions in SBE&S by not only nurturing cutting-edge researches but also acting as a hub institution of global network on Computational Mechanics. ●

- ICCMS09 -

3rd International Congress on Computational Mechanics and Simulation

IIT-Bombay, Mumbai- INDIA

1-5 December 2009

ICCMS09 is being organised by the **Indian Association for Computational Mechanics (IndACM)** and the **Indian Institute of Technology Bombay (IITB)** from **01 to 05 December 2009** [

The 1st and the 2nd congresses were held very successfully at IITK and IITG, respectively]

Kindly note that a 1-A4page (300 words, Ariel Narrow, 10pt) abstract deadline is **31 July 2009** via e-mail (iccms09@civil.iitb.ac.in).

Themes

Computational Solid Mechanics

- Composite structures
- Fracture and damage mechanics
- Geomechanics
- Vibration and control
- Smart structures
- Micro and nano-mechanics
- Robotics
- Bridge structures
- Material modeling
- Tribology
- Multibody dynamics

Computational Fluid Dynamics

- Flows with moving boundaries
- Turbulence modeling
- Free surface flows
- Biological fluid dynamics
- Hydrodynamics
- Multi-phase flow
- Pipe flow
- Weather forecasting

Computational Multi-Physics/-Scale Problems

- Fluid-structure interaction
- Electro-mechanics/magnetic
- Porous media mechanics
- New computational techniques
- High performance computing
- Transient dynamic problems
- Nonlinear mechanics
- Piezoelectric mechanics

Important Dates

- 31 Jul 2009 : Last date for receipt of 1-A4 page abstract
- 15 Aug 2009 : Notification of acceptance of paper
- 1-5 Dec 2009: Congress at IIT-Bombay

More detailed information about the congress will be available at www.civil.iitb.ac.in/iccms09 after 15 August 2009.

Tarun Kant
Chair, ICCMS09