

BICTAM Annual Report 2011

(Beijing International Center for Theoretical and Applied Mechanics)

With the aim to serve the rapidly increasing interest of the countries in the Asian-Pacific region and other developing countries with the benefit of advancements in the field of theoretical and applied mechanics and their applications, a series of academic activities, including seminars, workshops, and summer schools, have been organized in 2011 by the Beijing International Center of Theoretical and Applied Mechanics, or called the Center in what follows. Some main events are listed as follows.

1. International Visiting Scholars Program

The regular international visiting scholars program, organized by the Local Organizing Committee (LOC) of the Center, has attracted a number of well-known scientists and leading scholars from different countries and regions. Nine scientists and scholars from, for examples, Japan, United States, Russia, Canada, Hong Kong of China, were invited to visit the Center as guest scholars in 2011. They worked at the office of the Center for a period and thus they closely contacted relevant scientists in China with common research interest and efficiently exchange their most recent research results. The guest scholars presented lectures in the Center, in different topics covering a diversity of mechanics fields and related sciences, e.g., turbulence, fracture mechanics, micro/nano-biomedical sensors, bioengineering, electro- and magnetomechanical systems, microfluidic system design, and smart materials. Many scholars, especially young researchers and graduates, attended these seminars. These visits and lectures by well-known international scholars enhanced the international influences of BICTAM.

2. Short Course

In recognition of the ever increasing technological importance of micro/nano-devices and systems and the key role of mechanics in their design and fabrication, the Short Course on Micro/Nanomechanics was held in June 2011 in the Center. A few famous scientists in this area were invited to give very interesting and attractive lectures of 18 hours in total. The lectures covered the latest development in micro/nano-devices and systems, mechanics of carbon nanotubes and carbon nanomaterials, and cell biomechanics. More than 40 students, among which one fifth are from abroad, took part in the course.

3. Summer School

Soft matter has become a new multidisciplinary field where theoretical and applied mechanics are crucial. The Summer School on Mechanics of Soft Matter was successfully held at Zhejiang University in December 2011, sponsored by the Center.

21 distinguished scholars from top universities and institutions in China and USA, e.g., Professor Zhigang Suo from Harvard University, Professor Huajian Gao from Brown University, Professor Yonggang Huang from Northwestern University, Professor Tianjian Lu from Xi'an Jiaotong University, Professor Quanshui Zheng and Xiqiao Feng from Tsinghua University, gave lectures. The summer school lasted two weeks and more than 170 young researchers and graduate students attended this school.

Their lecturers covered a variety of active research topics including, among others, intelligent soft materials, cells and biological macromolecules, flexible electronic devices, biological tissues, biological materials, hydrogels, granular flows, polymers, liquid crystals, colloids and other soft material systems.

4. LOC meetings

The LOC of the Center held a few meetings to discuss the further development and other issues of BICTAM. Particularly, they made a detailed plan of the academic activities which will be held in 2012, to enhance the science capability-building.

Chiefly, the 23rd International Congress of Theoretical and Applied Mechanics (ICTAM2012) will be held in Beijing during August 19-24, 2012. In this conference, the Center will organize some workshops, symposia, and short courses, with the topics on Optimization of Structural and Mechanical Systems, Hypersonic and High Temperature Gas Dynamics and etc.

Especially, a workshop on natural hazards will be organized by BICTAM in Beijing in 2012. The most severe natural disaster in Asia and Pacific region, such as the 2004 tsunami in the Indian Ocean and 2011 tsunami in Japan, caused the enormous damage and claimed tens thousands people's lives. Focused on the topics of the fundamental processes of tsunami, BCITAM 1st Workshop on Natural Hazards – Tsunami in conjunction with the 5th SCSTW will be held in October of 2012 in order to play roles in mitigation of the influences of natural disasters in this area and the world.

Report composed by Dr. J Chen