

# IFMBE News

International Federation of Medical and Biological Engineering  
No. 85, February - April 2011, ISSN: 1741-0800

*Moving Forward*



## Content

IFMBE News

No. 85

February - April 2011

ISSN: 1741-0800

NEWS EDITOR:

Kang-Ping, Lin

[kplin@cycu.edu.tw](mailto:kplin@cycu.edu.tw)

ASSITANT EDITOR:

Chiency Kao

[ifmbenews.tw@gmail.com](mailto:ifmbenews.tw@gmail.com)

PUBLICATIONS & PUBLICITY  
COMMITTEE:

Kang-Ping Lin, Chair

Ratko Magjarevic, Co-Chair

Ichiro Sakuma

Nigel Lowell

Yubo Fan

Shyh-Hau Wang

Alan Murray

Nicolas Pallikarakis

Mario Forjaz Secca

Gerhard M. Artmann

Daniel Bader

Per Ask

David Boonzaier

Martha Zequera Diaz

Antonio Fernando Catelli Infantosi

Adriana Velazquez

Guru Madhavan

Mike Capuano

Thomas M. Guerrero

## Editorial

New Version of IFMBE News

by Kang-Ping Lin

## IFMBE EXPRESS

Welcome Back IFMBE News by Herbert F. Voigt

Launch of new IFMBE Website by James Goh

## FROM THE SOCIETY

-Prof. Jos Spaan has appointed to be Knight of the Order of the Dutch Lion

-“Future Challenges to Biomedical Engineering” presented by Herbert F. Voigt in Taiwan

-Report of the IFMBE delegation to the 128th Session of the Executive Board of WHO

## BME AROUND THE WORLD

-2010 Annual Symposium of Biomedical Engineering in Taiwan, Dec 2010

-The preparation of WC2012 in Beijing

## IFMBE SPECIAL

Update on the Clinical Engineering Division (CED) of the IFMBE

by Yadin David, CED Chairman

## EVENTS



## EDITORIAL

### New Version of IFMBE NEWS



2010 May, the IFMBE President, Prof. Herbert Voigt decided to reorganise the IFMBE News together with the new IFMBE website by using E-newsletter, in order to provide direct information to IFMBE members worldwide the latest IFMBE news and activities. I was pointed to be the Editor of IFMBE News after ex-Editor, Prof. Ratko Magjarevic's great distributions on previous editions.

IFMBE News is arranged as a seasonal edition. Except to deliver the IFMBE news and activities, we will also report updating information from each committee by request. IFMBE News is aimed to help members to receive up-to-date Biomedical Engineering information worldwide, including activities from IFMBE member states, industrial news, development of innovative BME technologies and etc. We will also arrange a series of feature reports on special topics, like Biomedical / Clinical Engineering.

IFMBE News is a public platform belongs to every member. We are welcome every members' participation. This E-news is the first edition after rearrangement. We are looking forward to your feedbacks which can help us making a better IFMBE News under your needs and expectation.



We are also collecting news and information all the time. If you have any information related to BME filed want to share with IFMBE members, please do not hesitate to contact us at [ifmbenews.tw@gmail.com](mailto:ifmbenews.tw@gmail.com).

2011 is the "Rabbit" year according to Lunar Calendar. In Asia, we are celebrating the Chinese New Year from February 3rd this year. Therefore, here I would like to wish a Happy Chinese New Year to everyone and hope you all can experience a great year at work and life within 2011.



Kang-Ping, Lin  
Editor, IFMBE News



## IFMBE EXPRESS

### Welcome Back IFMBE News

It is with considerable pride that I announce the official re-launching of the IFMBE News. We have not had an issue of the IFMBE News since 2007. It has been a long hiatus and we have much news to catch up with. Professor KP Lin, the new chair of the IFMBE's Publication and Publicity (P&P) Committee, is largely responsible for this renewal. Prior to the responsibility of the IFMBE News coming under Professor Lin's Committee, the work was done by our former Secretary General, Ratko Magjarevic, who is our current President-elect. Ratko did an outstanding job as Editor of the IFMBE News! After many years and with little support, it became clear that the situation was not sustainable and another model was needed to keep the NEWS alive and functioning. That new model involved moving responsibility for the IFMBE NEWS to the P&P Committee under new leadership. Professor Lin hired a new Assistant Editor, Chiency Kao, to work on the IFMBE News.

Chiency can be reached at [ifmbenews.tw@gamil.com](mailto:ifmbenews.tw@gamil.com). Over the

past year, they have created a new vision for the IFMBE News. It will be a quarterly publication with additional Special issues as needed. The scope and purpose of the publication is described later in this issue.

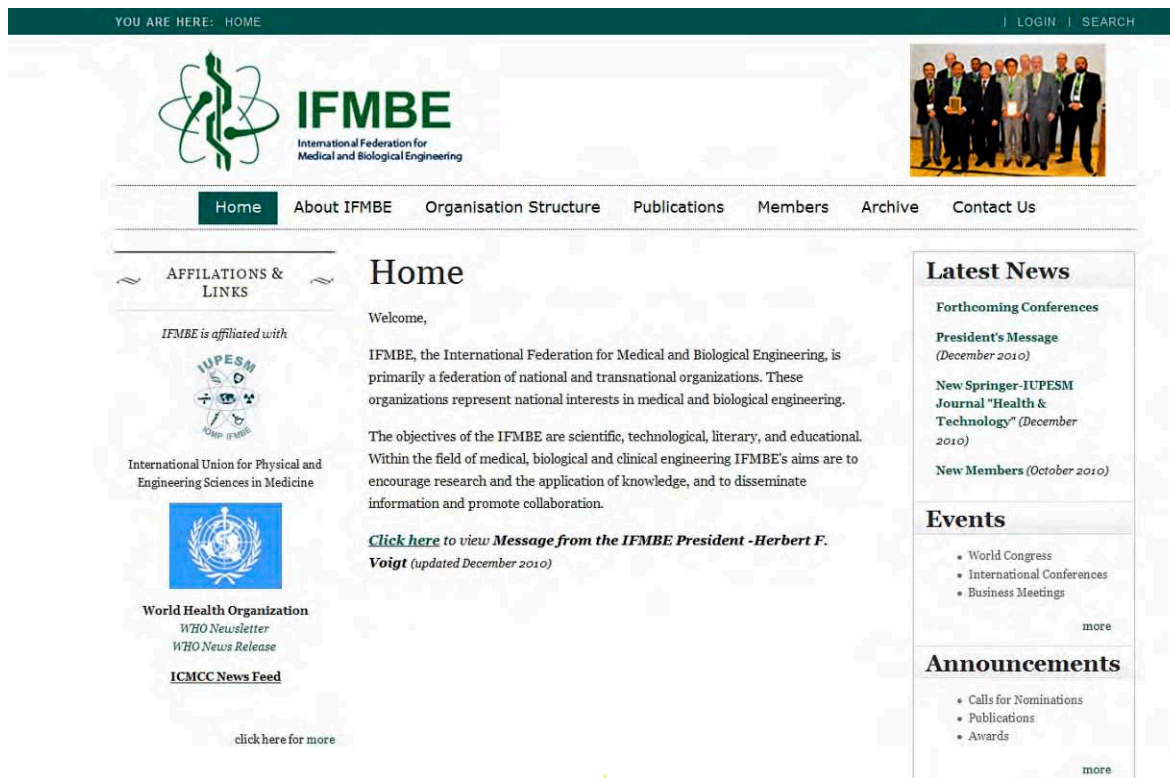
To keep this publication relevant and timely, please make your submissions as soon as is possible.



Herbert F. Voigt, Ph.D.  
President, IFMBE



## Launch of new IFMBE Website



After months of investigation (and with the help of Prof Ratko Magjarevic), finally we were able to gain access to the original IFMBE website domain. In the mean time, work had already began on the new website. The draft version was circulated to all IFMBE AC members as well as IAMBE, Clinical Engineering Division, all Committees and Working Group chairs for their comments and updates. Following that, we then populated the new webpages in the original IFMBE website domain name: [www.ifmbe.org](http://www.ifmbe.org). We also purchased the domain name: [www.ifmbe.net](http://www.ifmbe.net), which is now linked to [www.ifmbe.org](http://www.ifmbe.org).

The new website was launched on the 15th January 2011. We would like to ensure that

the information on the website is up to date and accurate. Therefore, I would like to invite you to browse the new website and give your comments. Please send your feedback and updates to Ms Lee Fong at [ifmbe@inmeetpro.com.sg](mailto:ifmbe@inmeetpro.com.sg)

Happy Browsing!

Log on to [HTTP://www.ifmbe.org](http://www.ifmbe.org)

By Professor James Goh  
Secretary-General, International Federation  
on Medical and Biological Engineering  
(IFMBE)



## FROM THE SOCIETY

### Prof. Jos Spaan has appointed to be Knight of the Order of the Dutch Lion

By David Holder and Chieny Kao,

Prof. Dr. Ir. Jos A.E. Spaan, who is the Editor in Chief of Medical & Biological Engineering & Computing and also a member of Federation Journal Committee and Publications and Publicity Committee, IFMBE, reached a great honor on professorial emeritus status in February 2010.

To mark the occasion and recognize his contribution to Biomedical Engineering and Medical Physics in the Netherlands and internationally, Queen Beatrix of the Netherlands appointed Prof. Jos Spaan as Knight of the Order of the Dutch Lion (Dutch: De Orde van de Nederlandse Leeuw). This was presented to him by Annemarie Jorritsma, the Mayor of Almere, Prof. Spaan's home town. The mayor named the significant contributions of Prof. Jos Spaan to science and society and especially those promoting the integration of medicine and technology. In addition, his contributions to international organizations as well as his role as Editor in Chief of Medical & Biological Engineering & Computing were mentioned.



Prof. Spaan talked about this honor: "I see the award not only as recognition of my own accomplishments but especially as recognition for Biomedical Engineering, BME, in the medical field." He also mentioned "The award means that the role of BME in the medical sciences is indeed respected notwithstanding the present struggle we have to survive in a scientific community where judgment of quality is reduced to counting of papers and their citations."



Prof. Dr. Ir. Jos A.E. Spaan

The 'Orde van de Nederlandse Leeuw' is the oldest and highest civil order in the Netherlands and was first created on 29



September 1815 by King William I of the Netherlands. Since 1980 the Order has been primarily used to recognize merit in the arts, science, sport (e.g. Olympic Gold Medal Champions) and literature. The Queen of the Netherlands is the Grand Master of the order. The award is important and an honor since it is bestowed onto to scientists only after a serious check of his/her credentials and merits. It is a kind of recognition of once full career incorporating scientific achievements and societal contributions. In 2010 the number of scientists receiving this award was 10. It should be noted that the Nobel laureates for Physics, Andre Geim and Konstantin Novoselov were awarded in the same order but with a higher distinction 'Commandeur'. Prof Spaan remarked that "Ridder" means not the Nobel price but it feels like an Olympic Gold Medal for science.



*2010 Award winners*

## Future Challenges to Biomedical Engineering

presented by Herbert F. Voigt in Taiwan

The President of the International Federation for Medical and Biological Engineering (IFMBE), Dr. Herbert F. Voigt was invited to the 30th annual conference of the Taiwanese Society of Biomedical Engineering in Dec 2010. Dr. Voigt presented his views of the challenges to Biomedical Engineering (BME) in the future in the opening speech of the conference. He pointed out the future challenges of BME within six aspects: Branding the Profession, the Hospital of the Future, the Valley of Death, Mind/machine Interface, Telepresence, and the ethical challenges attending recent technological advances such as genetically modified (GM) organisms, synthetic biology and nanotechnology.

First of all, Dr. Voigt pointed out that branding the "BME profession" is a current and continuing problem. Since entry level jobs for BMEs typically require education beyond the B.S. degree, salaries for BME BS graduates are not commensurate with other engineering degree baccalaureates. Some of this is due to a misunderstanding of the strength of the BME degree and its students. Some universities themselves contribute to this misunderstanding by giving different definitions and having different requirements for "BME"



degrees. For example, in the University of California system, some Bioengineering degree programs are meant to be accredited programs and others are not (e.g., The Bioengineering and the Bioengineering: Biotechnology programs are accredited by EAC/ABET.

The Bioengineering: Bioinformatics and the Bioengineering: Premedical programs are not accredited, or expected to be accredited, by a Commission of ABET. ). This sends mixed messages to students, parents and Industry. How do students know what are differences among the several Bio-name courses before they actually study it? This can also cause confusion for industry seeking to hire BMEs. Therefore, our challenge is to clarify the BME brand.

The "future hospital" is another challenge that we will face sooner and later. According to Dr. Voigt, personal health will be popular in the future, and robots are going to take over most of jobs from hospital professions, such as surgery, taking care of patients, morning rounds, etc. It also means bioengineering professionals are taking an important part to develop and maintain the running of future hospitals. The challenge is to integrate seamlessly the various data acquisition/measurement. systems with patient interface machines.

Dr. Voigt mentioned during his presentation, the well known "Valley of Death" in the development of BME products. The "Valley of Death"

generally refers to the lack of adequate support (money) during the development pipeline, prototype design or discovery and preclinical development. Various solutions need to be applied to fill the "valley", for example TATRC, NIH-CTSA's, private foundation research, NIH-SBIR, venture philanthropy. The challenge here is to modify the processes to insure products get to market and companies survive.

Furthermore, Mind/Machine Interfaces will take an important role to future BME development. Dr. Voigt showed some actual cases during his presentation. A man who lost both of his hands is able to control his artificial hands by his will. Within these mental control medical devices, the cochlear implant is perhaps the most successful neural prostheses ever developed at the moment. The challenge in this category is to insure the success of these nascent technologies.

Following the needs of personal health and home care, telepresence becomes a major issue. A recent study by NextGen Research, a market research firm, suggests that the personal robotics market will grow from less than 9 million units valued at \$1.28 billion worldwide in 2009, to more than 25 million units valued at \$5.26 billion to be shipped globally in 2015. Our challenge is to find more appropriate solutions to physiological problems.





Last but not the least, Dr. Voigt mentioned several issues related to ethical issues related to the development of the new technologies with medical implications, such as GM organisms, synthetic biology and nanotechnology. New technologies with medical implications are arriving at an exponential rate. The challenge will be to stay vigilant in overseeing the implications of these new technologies, educating both professionals and the non-scientists & non-engineers, and discussing and coming to judgments regarding the ethical implications of such activities.

While Dr. Voigt provided his opinions on the challenges to BME, he also asked other IFMBE members to offer their thoughts about the future of BME. Many of them pointed out "cooperation which is very important in this field, including Akos Jobbagy of Hungary, Shankar M. Krishnan (IFMBE Treasurer and Director of the BME Program at Wentworth Institute, Boston MA USA). Education and expenses are other issues. Guru Madhavan from India and now working at the U.S. National Academies wrote, "A key issue in India is related to the branding and education of bioengineering. Because of limited facilities and lack of a wholesome teaching and research infrastructure, bioengineers in India are mostly seen as a technical support system in hospitals. We all know that bioengineering is broader than this, and there in lies a branding opportunity."

To sum up, although there are many

challenges ahead, this also means biomedical engineering has great potential to grow rapidly in the future. While IFMBE is taking the role to help to coordinate the field and the people, your contributions are vital to the BME improvement. Let's all take a part to change the future of Biomedical Engineering.

## Report of the IFMBE delegation to the 128th Session of the WHO's Executive Board

By Marc Nyssen, Dov Jaron, Kang-Ping LIN

IFMBE was invited, together with a number of other Non-Governmental Organizations (NGOs), to participate in the 128th session of the WHO Executive Board that was held in Geneva from the 17th to the 25th of January 2011. The IFMBE delegation, appointed by the IFMBE President, Dr. Herbert Voigt, was lead by Prof. Marc Nyssen of Vrije Universiteit Brussel and included Prof. Dov Jaron of Drexel University in Philadelphia, and Prof. Kang-Ping Lin of Chung-Yung Christian University in Taiwan.





The meeting was chaired by the President of the Executive Board, Dr. M. Kökény. At the start of the meeting, the WHO Director-General (Dr Margaret Chan) gave a report on past activities and future strategies related to global public health. This was followed by reports on various ongoing programs. The meeting then focused on technical and health matters and on WHO finances and staffing. Under the technical and health matters portion of the agenda, the Executive Board dealt with various critical health issues associated with diseases such as HIV-AIDS, pandemic influenza, smallpox, cholera and malaria. Topics that were of particular interest to the biomedical engineering community included "health system strengthening " and "human resources " .

The IFMBE delegates prepared a statement related to our community's professional interests. The statement called for improving the use of eHealth technology in managing the health system. The use of eHealth would also assist in automatically generating reports that are required by WHO and allow for shifting strained human resources in developing countries from paper work to treating patients. To this end, IFMBE recommended the use of high quality, open-source software in order to minimize the cost to developing countries of implementing the system. The statement also called on WHO to recognize the expanding role of technology in health care and thus to increase the participation of biomedical and clinical engineers in health and health care delivery. This was the occasion when IFMBE sent an official delegation to the WHO Executive Board meeting but firstly

been reported in the IFMBE News. The IFMBE delegation was able to communicate with the head of the



India representation on the Board, responsible for "Health System strengthening" and with the head of the Norway representation, responsible for "Human Resources" . There will be an official statement appearing in the published record, emphasizing the important role of Biomedical and Clinical Engineering in the implementation of a global public health system.

The delegation had an opportunity to meet with Adriana Velazquez Berumen, the Coordinator of Diagnostic Imaging and Medical Devices, Essential Health Technologies division of WHO. The IFMBE delegates visited her office and exchanged information about WHO's future plan in Medical Devices. After Professor Joachim Nagel has provided input and chaired to numerous WHO working groups, such as the World Alliance on Patient Safety and the WHO Initiative on Health Action in Crises, the delegates also learned how to provide input to the WHO working groups during this meeting. Additionally, the delegates have learned how to provide input to the WHO working groups in the future. IFMBE was recognized by WHO as one of the most active and productive NGOs, as well as participating in key activities of WHO on several occasions under IFMBE's former Vice-President, President and Past President of the IFMBE, Professor Joachim Nagel's contribution. This occasion once again saw an important achievement of the IFMBE delegation, bringing our profession to the attention of the WHO & Executive Board.



## BME AROUND THE WORLD

### 2010 Annual Symposium of Biomedical Engineering in Taiwan, Dec 2010

The 30th annual conference of the Taiwanese Society of Biomedical Engineering was held on December 10th and 11th at I-Shou University in southern Taiwan. The participants were the scholars, experts, graduate students and college students in the fields of Biomechanics, Biomedical Electronics, Biomedical Materials, Bioinformatics, Clinical Engineering, Biomedical Nanotechnology and Biophotonics. In this two-day conference, there were around 700 academic research papers published, 150 of which were oral presentation and others were poster presentation. The number of the people signed up for the whole conference was about 1100.



*Prof. Herbert F. Voigt,  
the president of IFMBE*



The president of IFMBE, Prof. Herbert F. Voigt, and the chair of IFMBE Asia Pacific Working Group, Prof. Ichiro Sakuma, were invited to give speeches. Their speech topics were "The Future Challenges to Biomedical Engineering " by Prof. Herbert F. Voigt and "Biomedical Engineering for Computer Assisted Intervention and Surgical Robotics " by Professor Ichiro Sakuma. The two important guests of IFMBE came from the U.S. and Japan attended the conference in person to support has revealed the significance of international interaction for the Taiwan local BME graduated students and young academic researchers. Hopefully, it can be a great (contribution) to the international biomedical engineering education and technology.



## ***The Preparation of WC2012 in Beijing***

As suggested by Chinese Society of Biomedical Engineering, and confirmed by President of IFMBE, a meeting about preparations on WC2012 was held in Beijing during December 13 to 14 in The North Garden Hotel. All officials of IFMBE were invited to come to attend this meeting, including Prof. Herbert Voigt (the President), Prof. Ratko Magjarevic (Vice-President), Prof. Shankar Muthu Krishnan (Treasurer), Prof. James Goh (Secretary-General), Prof. Depei Liu (the Congress Chair), Prof. Yubo Fan (COC Chair), Prof. Shangkai Gao (COC member) and Xiaohong Weng (Secretary) from Chinese Society of Biomedical Engineering attended the meeting.



Here are the shot notes of the meeting: In the meeting of December 13, Depei Liu opened the meeting and welcomed all IFMBE officials. Yubo Fan, as COC Chair, introduced the basic information of WC2012 including the LOGO, the theme, the time and the venue, and presented some promotion materials.



1) May 26th-31st, 2012 is the preferred time for WC2012, as one major competing international conference will be in June 1st -6th in China 2) Beijing International Conference Center (BICC) is the preferred Venue. 3) The theme of WC2012 is promoting human health.

In the meeting, Yubo Fan presented details of BICC and accommodation resources around, and put forward the scheme of topics on BME part. Meeting mainly discussed Committees, Tracks and Sessions. IFMBE officials suggested some international members for the scientific committee, also communicated Prof. Mario Secca's remarks on the former World Congress and brought forward many good suggestions on management of WC2012.

On December 14, Depei Liu as the president invited IFMBE officials to visit Chinese Academy of Medical School & Peking Union Medical College. Then, Depei Liu, Yubo Fan and Xiaohong Weng accompanied all IFMBE officials to drive to visit BICC and Hotel around. All attendees talked with the group led by vice-president of the BICC, and thought the conditions of the BICC were good enough for the WC2012.



## IFMBE SPECIAL

### Update on the Clinical Engineering Division (CED) of the IFMBE

by Yadin David, CED Chairman

#### 1. The new CED

The healthcare delivery industry is going through global transformation and in particular showing increase in the industry's dependence on medical technology for the delivery of its services. There is also significant increase in the volume and in the complexity of the various technologies deployed. They increase communities' access to quality and safe healthcare programs. However, these technological systems and equipment require proper planning, integration and maintenance to obtain optimal benefits. Both, patient safety and technology life-cycle must be adequately strategized and managed. The Clinical Engineering Division (CED) purpose is to promote global coordination of technical policies and protocols supporting programs that improve life cycle management of healthcare technology and embracing all those who professionally practice in the clinical engineering field, whether in academia, health care facilities, industry, or at the governmental sector. The global technological evolution demands that this progress be supported by competent engineering programs and efficient use of resources. CED vision and mission are centered on these goals:

#### **CED Vision statement:**

To become the international forum for advancing clinical engineering profession including safe and effective innovation, management and deployment of healthcare technology for the benefit of all mankind.

#### **CED mission statement:**

To advance global education, research, knowledge, deployment and communication, about healthcare technology life cycle management between clinical engineering communities and its understanding by other take holders. These vision and mission statements are new. However they are built upon the work of the last couple decades by experienced professional clinical engineers who volunteered and participated in the Clinical Engineering Division (CED) work. They believe that the success of healthcare technology management programs should not be left for chance but rather be led by trained and competent clinical engineers. Thus, you can presently find more training programs and more practicing engineers than ever before. The volunteers that helped CED served its mission include individuals like Ake Oberg, Diego Bravar, Joseph Dyro, John Smith, Peter Heimann, Pekka Karp, Joseph Bronzino, Nicolas Pallikarakis, Adriana Velazquez,



James Wear, Myonng Ho Lee, Andrei Issakov, Hieki Terio, Said Jorge Calil and Joachim Nagel. An apology is extended for other not mentioned here.

## 2. Present state of CED

During the last World Congress on Medical Physics and Biomedical Engineering in Munich, Germany, (September 2009), the IFMBE held its assembly and elected new officers. As part of this program, the CED held its election and together they elected Dr. Yadin David as the new CED chairman. The reorganization that followed produced new and more relevant charter that facilitates the addition of volunteers to join its rank. CED reorganized into Working Groups that focus on specific projects supporting its mission making collaboration of clinical engineering practices more meaningful to the global populations. The Working Groups are seeking additional volunteers in the following areas:

---

Group #1  
Professional Practice & Education  
Led by Jorge Calil

---

Group #2  
Standards and Guidelines  
Led by Albert Poon

---

Group #3  
Strategic development & communications  
Led by Yadin David

---

If you are interested in helping one of these working groups please contact CED Secretary: Dr. Paolo Lago at [lagop@smatteo.pv.it](mailto:lagop@smatteo.pv.it).

To promote collaboration, CED, with much assistance from Kaiser-Permanente organization, launched new website serving as effective communication tool. It equipped with ample archived information pertinent for clinical engineers. You are encouraged to become a member by registering at: <http://health.groups.yahoo.com/group/CEdGlobal/join>

Other successful projects include the launching of the first global e-Conference. The simultaneous real-time electronic collaboration between clinical engineers from Brazil, USA, Italy, China, Sweden, Ireland and Croatia. Much of the CED progress is now achieved through these e-Conferences. Finally, CED is recognized for significant support it landed to the planning of and participation in the very successful WHO event - the First Global Forum on Medical Devices that took place in Bangkok, Thailand. You are invited to read more about this and other CED projects at the CED website. I look forward to hearing from you about this column and other clinical engineering issues.

### *IFMBE Clinical Engineering Division members*

- Yadin David, USA, CED Chair
- Albert K.F. Poon, Hong Kong
- Patrick Pentony, Ireland
- Mario Medvedec, Croatia
- Azman Hamid, CAHTMA
- Nils Eric Petterson, Sweden
- Said Jorge Calil, Brazil
- Ismael Cordero, USA
- Paolo Lago, Italy
- Joao Carlos Langanke Pedroso, Brasil



## EVENTS

### ASIA PACIFIC

#### **The 50th Annual Conference of Japanese Society for Medical and Biological Engineering;**

**April 29th to May 1st 2011**

**- Tokyo, JAPAN**

This year, the Japanese Society for Medical and Biological Engineering will meet their 50 years anniversary. The 50th Annual Conference will be held in the University of Tokyo in late April. The programmes will include symposiums, organized sessions, regular sessions, poster sessions and exhibition. Call for paper and the submission information are available at

<http://jsmbe50.umin.ne.jp/english.html>

#### **BioMed2011, the 5th Kuala Lumpur International Conference on Biomedical Engineering;**

**June 20<sup>th</sup> to 23<sup>rd</sup>, 2011**

**- Kuala Lumpur, MALAYSIA**

This International Conference on Biomedical Engineering (BioMed2011), is in conjunction with the 8th Asian Pacific Conference on Medical and Biological Engineering (APCMBE 2011) which will be held on the 20th to the 23rd of June 2011 in Kuala. Organized by University of Malaysia For further information please reach the website at:

[www.biomed2011.um.edu.my](http://www.biomed2011.um.edu.my)

### LATIN AMERICA

#### **The V Latin American Congress of Biomedical Engineering;**

**May 16th to 21st, 2011 – Havana, Cuba**

Official congress languages in the “V Latin American Congress of Biomedical Engineering” will be English, Portuguese and Spanish. For additional information please visit the official site: <http://www.claibhabana2011.sld.cu> or [claibhabana2011@infomed.sld.cu](mailto:claibhabana2011@infomed.sld.cu)

### EUROPE

#### **The 5th European Conference of the IFMBE**

**September 14th-18th, 2011- Budapest,**

The 5th European Conference of the International Federation for Medical and Biological Engineering will be held in Budapest, 14-18 September, 2011. Keynote lectures will be held by Herbert F. Voigt, Niilo Saranummi, Sergio Cerutti, Robert Nerem. Special sessions will be held on various topics. See the conference webpage at:

[www.embec2011.com](http://www.embec2011.com)

