



AFOMP Newsletter

Asia-Oceania Federation of Organizations for Medical Physics

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<http://www.afomp.org>

Australia • Bangladesh • China • Hong Kong • India • Indonesia • Iran • Japan • Korea
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Vol.4 No.1 / June 2010

Report of 9Th AOCMP and 7th SEACOMP Travel Grant Recipients

Report

Kitiwat Khamwan

CHULALONGKORN UNIVERSITY, THAILAND

I am Kitiwat Khamwan, Ph.D. student in Biomedical Engineering (Medical Imaging), Faculty of Graduate Studies, Chulalongkorn University, Thailand. I received the travel awards for this congress. During the congress, I attended the session of

- Pre-congress workshop:
 - The Use of Image-J and MS-Excel for CT performance study
 - Digital Mammography
- Symposium:
 - Education and Training & Professional Development in Medical Physics
 - Recent Development in PET Motion Tracking and Motion Correction
 - PET-CT Treatment Planning
 - Rigid-body and Deformable Image Registration

The conference provided me a great opportunity to extend the new knowledge of advance technology in diagnostic radiology and radiotherapy. I have attended the proffered paper on diagnostic imaging and poster exhibition. I have also presented

my research titles “Patient effective dose from 18F-FDG PET imaging” and “The improvement of segmentation on PET image using level set method” and received the “Best oral presentation” in imaging physics. As my research is the implementation of medical image processing in functional PET imaging and internal dosimetry, the congress will provide me the improvement in knowledge to continue the research. Furthermore, I will be ongoing to analyze the quantitative PET/CT imaging for specific patient dosimetry which is the significant aspects in medical physics. So, this is a great opportunity to present the research among expert medical physicists from oversea. I will be able to apply their excellent comments and suggestions to refine and improve my further study. In the future, I hope to propagate the idea, new knowledge, and experience learning from this conference to members in medical physics in Thailand.

Finally, I would like to acknowledge the 9th AOCMP & 7th SEACOMP committee, Thai Medical Physicist Society and the expert from oversea to give me a great opportunity to attend the conference as well as provide valuable advice to share the knowledge of medical physics, make new contacts and strengthen relationships with regional members.

Report

Sornjarod Oonsiri

King Chulalongkorn Memorial Hospital, THAILAND

I am Sornjarod Oonsiri M.Sc., medical physicist working in the field of medical imaging in radiotherapy at King Chulalongkorn Memorial Hospital, Bangkok, Thailand. I am the one who received the travel awards at the 9th AOCMP & 7th SEACOMP. At this congress, I have attended several sessions on the topics of

- Pre-Congress Workshop : 3D Image Guide Advanced Brachytherapy
- Advance Treatment Technique in Radiation Therapy
- Trend in Reference Dosimetry in Radiotherapy and Diagnostic Radiology
- Advances in Target Therapy for Cancer : Molecular Targeting of Alpha Emitting Radioisotope
- Recent Development in PET Motion Tracking and Motion Correction
- Recent Advances in Imaging of Musculoskeletal Tumors
- New Concept in Radiotherapy Quality Control
- Clinical Implementation of Volumetric Modulated Arc Therapy

According to the program information, it is very good time for me to learn new knowledge and basic principle of both radiotherapy and diagnostic radiology. I have also attended the proffered papers of radiation therapy and poster presentation.

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Verification of Dynamic Multileaf Collimator using Electronic Portal Imaging Device and Dynalog Files

Lakkana Apipanyasopon

Siriraj Hospital, Mahidol University, THAILAND

What was learnt at the Congress and how I intend to apply that in my own country?

The topic of the 9th AOCMP & 7th SEACOMP meeting is "Update in Medical Physics". The meeting programs consist of the advanced digital imaging and digital mammography refresher course, the workshop on the use of Image-J and MS-Excel for CT Performance study, 3D image guide advanced brachytherapy and physical aspects of intensity modulated radiation therapy, and many topics of the lecture.

In this meeting, I had a chance to participate in the workshop on physical aspects of IMRT. The speaker in this topic is Prof. Chen-Shou Chui. He described about the basic concepts and methods of IMRT. These included optimization, delivery, dose calculation, and quality assurance. In addition to, he described about a recent advance in external beam radiation therapy, IGRT. It aims to improve the geometric accuracy during radiation treatment by using image registration process. There are two types of image registration, rigid-body and deformable. Rigid-body transformation is suitable for registration based on

body structures, whereas deformable transformation is used for registration of soft organs. The knowledge that I received from this workshop can help to understand the process, benefit, and delivered limitation of IMRT treatment planning, the quality assurance method of each delivery IMRT technique and the important of QA in patient-specific IMRT. From this learning, I will improve the process of planning and QA of IMRT in my department. Additional the information about the image registration of IGRT will be studied in my department in future to develop the efficiency of the radiotherapy.

Moreover, I had an opportunity to know about the new application of radiation in radiotherapy from the lectures such as trend in reference dosimetry in radiotherapy and diagnostic radiology, molecular targeting of alpha emitting radioisotopes, new concept in radiotherapy quality control and clinical implementation of volumetric modulated arc therapy. The advances of the radiotherapy technology that I learnt from this meeting encouraged me to study more and develop in new and innovative treatment techniques.

AFOMP travel award report

Wannapha Nobnop

Chiang Mai University Hospital, THAILAND

Conference attending:

In the 9th AOCMP & 7th SEACOMP Congress, I have attended several sessions such as

- 3D Image Guide Advanced Brachytherapy
- Radiation Therapy Physics - IMRT
- Advance Treatment Technique in Radiation Therapy
- 3D CRT and IMRT- The Importance of training
- Experience in ROMP Clinical Training in Thailand
- New Concept in Radiotherapy Quality Control
- Clinical Implementation of Volumetric Modulated Arc Therapy

Conference presentation:

I did oral presentation for my research work, "Comparison of physical and virtual wedge beam characteristics and their applications in breast cancer treatment planning".

I also did poster presentation, "Dose verification and statistics for step and shoot intensity modulated radiation therapy in Chiang Mai University hospital". My poster presentation received the "Best poster presentation award" from the congress. (Attached file)

Summary:

The congress program was offer a significant opportunity to gain practical knowledge and learn the new technologies in radiation therapy. I have also attended the proffered papers of radiation therapy. It was very good occasion to exchange the experiences with the others medical physicists. I learn update the new modalities and equipments in radiotherapy from international commercial exhibition in the congress.

I would like to thank the AFOMP committee who kindly gave me the travel award to gain knowledge and experience from this excellent congress.

My motivation is to do the research in the field of the implement of medical imaging in radiotherapy. I will improve the knowledge and skill in the field of radiation dosimetry in the near future. Also at the congress, I have presented my research on the topic of "IMRT Dose Verification with GafchromicTM EBT and Kodak EDR2 Films" and received the "Best oral presentation" in radiotherapy.

Furthermore, it is very good opportunity to exchange the knowledge of medical physics to other members in South East Asia and Asia region.

Report of 9Th AOCMP and 7th SEACOMP Travel Grant Recipients

Report

Duy Linh Tran

HCMC University of Technology, VIETNAM

The 9th Asia-Oceania Congress & 7th South-East Asian Congress of Medical Physics was held successfully in Chiang-Mai, Thailand from 22nd to 24th October, 2009. The Thai Medical Physicist Society with the support of Asia-Oceania Federation of Organization for Medical Physics (AFOMP) and South-East Asian Federation of Organization for Medical Physics (SEAFOMP) organized this congress. Travel Awards for selected participants were provided by AFOMP.

The objectives of this Congress were to update recent advance of medical physics and contribute to activities of education, professional development and research in Asia-Oceania region. The main topics covered were: Education and Training & Professional Development in Medical Physics, Radiation Therapy, Diagnostic Imaging and other applications in medical image processing, biosensors... The conference was held at the Empress Convention Center, with a grand hall, four conference rooms and one poster exhibit room.

My main motivation for attending the conference was to learn about innovations in Medical Physics, research trends and strategies to apply to my division. Also, I presented a paper named "Applying IBK to training courses in biomedical image processing".

In general, I found all the sessions interesting and well presented. The most interesting research which I could apply to my department was given by Prof. Yao-Xiong Huang in the Pre-Congress session. It was titled "Laser and Ultrasound in Therapy" and introduced the advanced techniques of Non-Ionizing Radiation therapies and their medical applications. The Laser Technology Laboratory in our Department has been researching on semiconductor laser in medicine since 1985. We have developed devices for laser optoacupuncture to treat for diseases such as distension of prostate gland, gynaecological diseases, heart diseases, stomach ulcers, diabetes type II... The presentation of Prof. Yao-Xiong Huang has opened for us a new research tendency in the field of laser application in medicine, especially "laser-induced interstitial thermotherapy" method.

The second paper that I found interesting was "Rigid-body and Deformable Image Registration" presented by Prof. Chen-Shou Chui. He impressed me with his extensive knowledge and experience in Medical Image Registration and its application in therapy. I have been researching on Medical Image Processing and Image Registration in particular since 2007 therefore a very detailed overview on Image Registration given by Prof. Chui is very useful for me. He inspired me with successful applications in San Yat-Sen Cancer Center. In future, I am going to research in more depth on rigid-body and deformable image registration for radiation therapy in Ho Chi Minh City Hospitals.

The presentation on "Medical Physics Education in China" has also pulled my attention because the present status of medical physicist training of China is basically as same as Vietnam's. One of the solutions that Prof. Yimin Hu proposed is setting up Medical Physics residency programs and accreditation system to enhance education and training. In Vietnam, our division – the

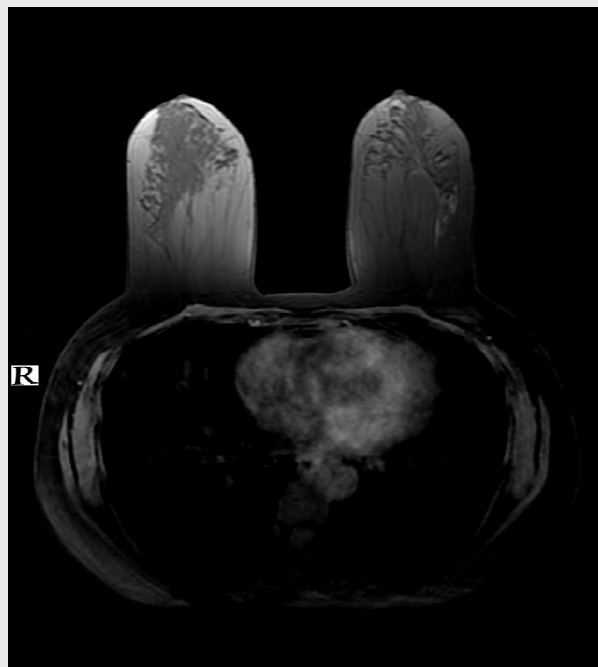
Department of Biomedical Engineering in HCMC University of Technology has rebuilt a new training program which aims to combine "the physics" and "engineering" aspects appropriate to Vietnam's requirements. However, we have to deal with many difficulties such as the shortage of elementary labs with nuclear and ionizing radiation module, teaching staff, cooperation with hospitals and a recognized national standard for medical physicists. The Shang Gang accreditation system of Public Health Ministry is a good reference model to apply in our country.

In conclusions, I feel that I have learned a lot from the conference, not only from the details of the presented research but also from the conference as a whole. It provided me with a general picture of the development of medical physics in Asia and Oceania and some insights to the issue that I have been researching on. I would like to express my appreciation to all members of SEAFOMP, AFOMP and Local Organizing Committee for their extraordinary efforts in organizing this Congress.

AFOMP Quiz #7

Edited by Prof. Kwan-Hoong Ng

This is an MR image of the breasts. Can you identify the artifact in the image and its cause(s)? (The answer is found on page 6)



(Courtesy of Mr. Chun- Jek Lim, Global Doctors Specialist Centre, Kuala Lumpur, Malaysia)

International Medical Physicists Symposium at ACMP 2010, San Antonio

The International Board of Medical Physics (IBMP) Constituting Panel held two meetings in San Antonio, on May 22 and 23, 2010.



ELEKTA TRAVEL AWARD

ACPSEM's APSIG (Asia-Pacific Special Interest Group) are pleased to announce the annual Elekta Travel Award. This award is to enable Medical Physicists to travel between Australia or New Zealand and a developing country (in the Asia-Pacific region) for educational purposes.

The objective of the Travel Award is to assist with, in alternate years,

a) The cost of a Medical Physicist from a developing country in the Asia Pacific region to attend the annual Engineering and Physical Sciences in Medicine (EPSM-ABEC) conference in Australia/NZ, and visit at least one Medical Physics department in Australia/NZ; and

b) The cost of a Medical Physicist from Australia to attend the annual Asia-Oceania Congress of Medical Physics (or similar) and visit at least one Medical Physics department in the host country.

Only one award will be granted each year (up to a maximum of AU\$5000), and will be based on the quality of the applications. The attendee is expected to present at the respective conference, and submit a report to Elekta, and to the ACPSEM.

Goals of the Awards

- 1. To assist medical physicists from developing countries in the Asia-Pacific region to participate in medical physics scientific, educational and professional activities at the international level.*
- 2. To encourage co-operation in the field of medical physics between ACPSEM members and medical physicists from developing countries in the Asia-Pacific region.*
- 3. To educate members about issues pertinent to medical physics and engineering in the Asia-Pacific region.*

The 2010 award is for an eligible Medical Physicist from a developing country in the Asia-Pacific region to visit Aus-

tralia in December 2010 to attend EPSM (Engineering and Physical Sciences in Medicine) to be held in Melbourne, Victoria from December 5-9, 2010 and to visit at least one Medical Physics department in Australia or NZ. To be considered for the Award, all application materials must be received by the ACPSEM no later than 5:00pm AEST August 13th, 2010. The name of the successful applicant will be announced by August 31st, 2010.

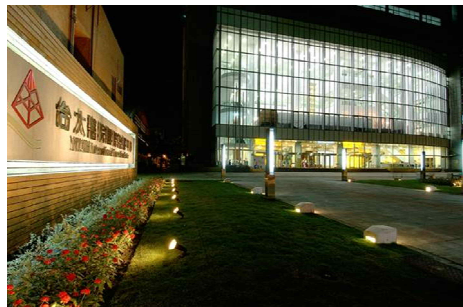
For selection criteria, conditions and details of the application process, please go to www.acpsem.org.au/index.php/home/governance/asia-pacific, or email apsig@acpsem.org.au.



*Chen-Shou Chui, PhD, FAAPM, DABR
President, Chinese Society of Medical Physics, Taipei.*

Taiwan is known for her beautiful natural scenery and cultural diversity. Taipei, in particular, is a city rich in both the traditional and the modern, as epitomized by the National Palace Museum and Taipei-

We sincerely welcome you to Taipei and look forward to seeing you at the 10th AOCMP.



Tae-Suk Suh, PhD
President, Korean Society of Medical Physics

Previous KSMP annual meetings have made an important role to promote research activities in medical physics and offer an opportunity of knowledge exchange for better patient care among the members. Based on the excellent achievement of KSMP during past 20 years, we would like to celebrate “20th Anniversary of KSMP” and broaden our visions on the field by introducing future trend of medical physics which utilize interdisciplinary approaches such as fusion technique and molecular imaging etc.

Once again, we welcome you all and wish you all very pleasant and memorable.

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AFOMP NEWS

New AFOMP Newsletter Editor

The volunteer to serve as AFOMP Newsletter Editor was announced at March 23, 2010. Three volunteers applied as the Editor. Dr John Baines (Australia) was determined as the new Editor among them. The new Editor will start to publish newsletter of Vol4. No2 / December 2010.



AFOMP Website Renewal

The website is under renewal with the support of USD 4,500 from Catholic University of Korea because current website is a little out of date and security is weak. The website design and security of board will be improved.

Calendar of Events

18-22 July 2010

American Association of Physicists in Medicine (AAPM) Annual Meeting; Philadelphia, PA USA

<http://www.aapm.org/meetings/>

15-17 September 2010

The 20th Anniversary of Korean Society of Medical Physics (KSMP) will be held in Seoul, Korea.

24-25 September 2010

The 100th Meeting of Japanese Society of Medical Physics will be held in Tokyo, Japan.

16-17 October 2010

The 10th AOCMP will be held in Taipei, Taiwan.

The official Website is:

<http://www.aocmp2010.org/>

Answer to AFOMP Quiz #7

This image shows the failure of fat suppression on the right breast caused by static magnetic field inhomogeneity. This was due to the saturation pulse frequency not equal to the fat resonance frequency; and the saturation pulse was saturating the water signal instead. This discrepancy resulted in water suppressed image found on the right breast.

Static field inhomogeneity inherent in magnet design are relatively small in modern MR scanners and it can be reduced by auto-shimming, position the region of interest at the centre of the magnet and decreasing the field of view (FOV).

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