



Thai Medical Physicist Society

The Fifteenth Annual Scientific Meeting,

1-3 March 2024

Rua Rasada Hotel, Trang, Thailand

Theme: “Advanced Medical Physics Improves Patient Outcomes”

FRIDAY 1 MARCH 2024

MEETING ROOMS

Room *Grand Ballroom (Opening & Radiotherapy & Business Meeting)*
Nakara 3 (Medical Imaging, AI)
Nakara 4 (Registration, Presentation Preparation)
In front of Grand Ballroom (Commercial Exhibition & Coffee Break)

MEETING PROGRAM

08:00-09:00 REGISTRATION

09:00-09:20 OPENING CEREMONY

Room *Grand Ballroom*
Chair: *Anchali Krisanachinda*

09:20-10:00 **Pradub Atthakorn Memorial Lecture**
Monte Carlo Simulation in Medical Physics
Kosuke Matsubara

10:00-10:30 OPENING COMMERCIAL EXHIBITION & COFFEE BREAK

Room *Grand Ballroom*
Chair: *Taweap Sanghangthum*

10:30-11:00 **Current Status of the JSRT and AI Research in the Field of Medical Imaging**
Takayuki Ishida

11:00-12:00 **Proton Therapy: New Trend of Radiation Therapy Treatment**
Chonlakit Khorprasert, Kanjana Shotelersuk, Napapat Amornwichet

12:00-13:00 **BA-VARIAN LUNCH SYMPOSIUM**
HyperSight and Halcyon: Technical Breakthrough Empowering IGRT and Adaptation
Taoran Li, PhD, Sr Medical & Clinical Science Liaison Manager, Varian Medical Affairs

Room *Grand Ballroom*
Chair: *Puangpen Tangboonduangjit*

13:00-13:30 **What is AAPM Medical Physics 3.0?**
Cheng B Saw

13:30-14:00 **Chula Summer School in Advanced Medical Physics**
Franco Milano

14:00-14:30 **Intraoperative Radiation Therapy for Early Stage Breast Cancer**
Adhisabandh Chulakadabba, Tanawat Tawonwong

14:30-15:00 COFFEE BREAK

Room *Grand Ballroom*
Chair: *Suphalak Khachonkham*

15:00-15:30 **Future Technology in Medical Physics**
Taweap Sanghangthum

15:30-16:30 **Treatment Planning Symposium**
Komkrit Krongkietleart, Warinthorn Rattanaareeyakorn, Narueporn Pischom

Room *Nakara 3*
Chair: *Kitiwat Khamwan*

15:00-15:30 **Academic Research on Liver MRI**
Yasuo TAKATSU

15:30-16:00 **QA in Advanced Medical Imaging**
Sawwanee Asavaphatiboon

16:00-16:30 **Radiomics: Current Status and Future Direction**
Yothin Rakvongthai

17:00 **HEADING to HAT YAO**

18:00-21:00 **GALA DINNER @ HAT YAO**

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| SATURDAY 2 MARCH 2024 |
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Room *Grand Ballroom*
Chair: *Wannapa Nobnop*

08:00-08:30 **3D Dosimetry of Proton Beams and Influences on Response**
Geoffrey Ibbott

08:30-09:30 **Moving to ART Strategies, Technological Consideration and Clinical Experience**
Chirasak Khamfongkhruea, Wisawa Phongprapan, Suphalak Khachonkham

09:30-10:00 **Audit Dosimetry in Advanced Techniques RT**
Supriyanto Pawiro

10:00-10:30 COFFEE BREAK

Room *Nakara 3*
Chair: *Anchali Krisanachinda*

08:00-08:30 **Let's Understand the Details of the MR Signal**
Noriyuki Tawara

08:30-09:00 **Feasibility of Single-Time-Point Dosimetry for Molecular Radiotherapy**
Kitiwat Khamwan

09:00-09:30 **²²⁵Ac-PSMA in Theranostic Prostate Cancer Therapy**
Shuichi Shiratori

09:30-10:00 **IndoQCT: A Software for Comprehensive CT Image Quality Assessment**
Choirul Anam

- Room** *Grand Ballroom*
Chair: *Sivalee Suriyapee*
- 10:30-11:00 **The Role of Medical Physicist in Radiotherapy: Expectations of the Professional Boards.**
บทบาทนักฟิสิกส์การแพทย์ด้านรังสีรักษา: ความคาดหวัง (วิชาชีพและบอร์ดบริหาร)
Somsak Khuanchana
- 11:00-11:30 **Challenges in Brachytherapy**
Mintra Keawsamur
- 11:30-12:00 **Modified Electron Beam Calibration Procedures**
Supriyanto Pawiro

- Room** *Nakara 3*
Chair: *Anchali Krisanachinda*
- 10:30-11:00 **Clinically Qualified Medical Physicists in Thailand**
Anchali Krisanachinda, Puangpen Tangboonduangjit, Taweap Sanghangthum
- 11:00-11:30 **Anatomical-Based VS Clinical Indication Diagnostic Reference Levels (DRL)**
Anchali Krisanachinda
- 11:30-12:00 **Establishment of NDRLs for PCIs in Thailand**
Suphot Srimahachota

- Room** *Grand Ballroom*
- 12:00-13:00 **MED-I LUNCH SYMPOSIUM**
From the Production of Radioisotopes to the Precision Dispensing of Radiopharmaceutical Injections: the Complete Spectrum
Mario Malinconico

Proffered Paper in Radiotherapy

- Room** *Grand Ballroom*
Chair: *Puangpen Tangboonduangjit*
Co-Chair: *Lakkana Apipanyasopon*
- 13:00-13:10 **RT1_ Treatment plans comparison between Halcyon and VersaHD for ultra-hypofractionated of high-risk prostate cancer using multicriteria optimization**
Kanyapat Prangnuan
- 13:10-13:20 **RT2_ An evaluation of the impact of 4D-CBCT acquisition parameters on image quality and geometric accuracy in lung SBRT: a phantom study**
Sireetorn Choocherd
- 13:20-13:30 **RT3_ Comparison of modified formalism output and TRS-398 absorbed dose to water in electron beams reference dosimetry in multiple radiotherapy centers**
Yasumon Thinka
- 13:30-13:40 **RT4_ Dosimetric characterization of high-resolution diode array for patient-specific quality assurance of Stereotactic Radiotherapy**
Tongrak Yimpak

- 13:40-13:50 **RT5_ Dose evaluation of a deep learning-based synthetic CT generation for head and neck cancer in photon and proton therapy**
Ailada Kuibumrung
- 13:50-14:00 **RT6_ Enhancing adaptive radiation therapy accuracy with CycleGAN-generated Synthetic CT from CBCT in pelvic region**
Paritt Wongtrakool
- 14:00-14:10 **RT7_ Confidence limit of gamma passing rate for patient-specific quality assurance in pencil beam scanning proton therapy**
Nuttida Rawiwan
- 14:10-14:20 **RT8_ Machine learning-based dose prediction in lung cancer radiation therapy for enhanced decision support systems**
Thitaporn Chaipanya
- 14:20-14:30 **RT9_ A simple method of evaluation of real-time respiratory motion tracking accuracy utilizing the Exactrac Dynamic system**
Mongkol Kongsak
- 14:30-15:00 COFFEE BREAK

Room *Grand Ballroom*
Chair: *Chumpot Kakanaporn*
Co-Chair: *Anirut Watcharawipha*

- 15:00-15:10 **RT10_ Dosimetric comparison of IMRT, co-planar VMAT, non-coplanar VMAT and HyperArc for multiple brain metastases SRS**
Aksarapak Thawornnittayakul
- 15:10-15:20 **RT11_ Machine learning-based patient selection for deep inspiration breath hold radiotherapy in left breast cancer**
Chanatinat Chotchuchuang
- 15:20-15:30 **RT12_ A simple radiation-induced DNA damage model for proton therapy based on DBSCAN algorithm**
Sanhanat Chaibura
- 15:30-15:40 **RT13_ Designing an in-house phantom daily QA for range verification for proton beam using GEANT4**
Paphatchaya Kheawyoi
- 15:40-15:50 **RT14_ Monte Carlo model for out-of-field dosimetry during volumetric modulated arc therapy (VMAT)**
Daranporn Pongmettasanti
- 15:50-16:00 **RT15_ A comparative analysis of geometric and dosimetric outcomes in atlas-based versus deep learning-based automated segmentation for head and neck radiation therapy**
Warisara Thanusilp
- 16:00-16:10 **RT16_ Dose prediction in prostate cancer**
Pumipat Chaikamthorn
- 16.10-16.20 **RT17_ Determination of the surface dose correction factors for various detectors in spot scanning beam proton therapy**
Pakjira Saruang

Proffered Paper in Medical Imaging & AI

Room Nakara 3

Chair: Yothin Rakvongthai

Co-Chair: Picha Shunhavanich

- 13:00-13:10 **IMAGE1_Absorbed dose calculation in thoracic CT using ICRP voxel phantoms and Monte Carlo simulation**
Shu Watanabe
- 13:10-13:20 **IMAGE2_Assessment of patient radiation dose and image quality for trans-arterial chemoembolization from digital subtraction angiography combined with IVR-CT**
Sasi Boonsuan
- 13:20-13:30 **IMAGE3_Optimal dual-time-point dynamic 68Ga-PSMA-11 PET/CT protocols for parametric imaging generation in prostate cancer patients**
Paphawarin Burasothikul
- 13:30-13:40 **IMAGE4_Accuracy of 177Lu quantification for dosimetry calculation using 12-swiveling CZT detectors SPECT/CT camera**
Panattha Damthongsen
- 13:40-13:50 **IMAGE5_Establishment of typical adult CT diagnostic reference levels (DRLs) in Ramathibodi hospital: a comparison of different dose collection methods**
Nichaphat Srisumetawupakit
- 13:50-14:00 **IMAGE6_Kotaro Fukuoka_Effect of dosimeter location on the eye lens dose measurements for endoscopist**
Kotaro Fukushima
- 14:00-14:10 **IMAGE7_Development of tungsten-doped borosilicate glass as a lead-free transparent radiation shield in nuclear medicine**
Satawatchara Suwanprateep
- 14:10-14:20 **IMAGE8_Minimizing Slice-Overlap Artifacts in MRI Lumbar Spine: A Phantom Study**
Kannikar Kanyakam
- 14:20-14:30 **IMAGE9_Impact of contrast agent administration on water equivalent diameter for size-specific dose estimate (SSDE) calculation in chest CT angiography**
Nuttanit Kaewsan
- 14:30-15:00 COFFEE BREAK

Room Nakara 3

Chair: Anchali Krisanachinda

Co-Chair: Panya Pasawang

- 15:00-15:10 **IMAGE10_Impact of Deep Learning-based Image Reconstruction on Arm-induced Artifacts in Abdominal CT**
Suppakit Wongvit-olarn
- 15:10-15:20 **IMAGE11_Localization of Epileptogenic Zones Using Radiomic Analysis of Ictal and Interictal SPECT Data**
Jinjuthathip Thuwarojsakul

- 15:20-15:30 **IMAGE12_Prediction of axillary lymph node metastasis in clinically node-negative breast cancer magnetic resonance imaging-based radiomics**
Wichasa Sukumwattana
- 15:30-15:40 **IMAGE13_Distant metastasis prediction after radiation treatment in patients with esophageal squamous cell carcinoma using CT-based radiomics**
Thanakrit Chanchayanon
- 15:40-15:50 **IMAGE14_Development of gold nanoparticle-incorporated gelatin-based hydrogel for radiation dosimetry**
Phavinee Choosin
- 15:50-16:00 **IMAGE15_Prediction of diabetic peripheral neuropathy in patient's limbs using inverse problem algorithm and Taiwan population-based clinical data**
Huang Shih-Hsun
- 16:00-16:10 **IMAGE16_Inverse problem algorithm application to analyze the peripheral visual field damage of glaucoma patients from clinical dataset: a Taiwan population-based survey**
Huang Shih-Hsun

Room *Grand Ballroom*

16:20-16:50 BUSINESS MEETING

16:50-17:30 TMPS and JSRT Committee Meeting

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| SUNDAY 3 MARCH 2024 |
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Room *Grand Ballroom*

Chair: *Chirapha Tannanonta*

08:30-09:00 **Treatment Planning Systems for Small Field Dosimetry**

Puangpen Tangboonduangjit

09:00-09:30 **Stereotactic Radiosurgery in Tomotherapy**

Anirut Watcharawipha

09:30-10:00 **Move Forward: More Effective and Efficient with Automatic QA in RT**

Sawanee Suntiwong

Room *Nakara 3*

Chair: *Anchali Krisanachinda*

08:30-09:00 **CZT Digital Detectors: SPECT/CT**

Panya Pasawang

09:00-09:30 **Luminescence Dosimetry: Theory and Applications**

Kosuke Matsubara

09:30-10:00 **Photon Counting CT: Principles and Clinical Applications**

Picha Shunhavanich

10:00-10:30 COFFEE BREAK

Room **Grand Ballroom**
Chair: **Taweap Sanghangthum**

10:30-10:50 **BA-Varian Presentation**
Eclipse 18.0 A new era of efficiency and accuracy
Piyanan Liammookda

10:50-11:10 **GE-Presentation**
CT and MR Simulation: The Role of Imaging in Radiation Therapy
Patompong Polharn

11:10-11:30 **Med-I & Tema Sinergie**
Tema Sinergie: Cutting-edge solutions for Nuclear Medicine, Radiopharmacy and beyond
Alessandro Treré

11:30-11:50 **Med-I & Ammo imaging's solutions-Presentation**
GMP requirements in the production of radiopharmaceuticals and beyond
Icola Ceccomencini

11:50-12:10 **Medical Physics National License: Renewal Issues -**
การจัดเก็บคะแนนใบประกอบโรคศิลปะ ศาสตร์ฟิสิกส์การแพทย์
Tanawat Sontrapornpol

12:10-12:30 **PRESENTATION AWARDS**
INVITATION TO 16th TMPS- 23th SEACOMP 2025
CLOSING

12:30-13:30 LUNCH
SAFELY RETURN HOME