



**International Atomic Energy Agency  
Department of Technical Cooperation  
And  
Nuclear Medicine and Diagnostic Imaging Section  
Division of Human Health**

**RAS6074**

**Improving Quality of Life of Cancer Patients through Streamlined and Emerging  
Therapeutic Nuclear Medicine Techniques**

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**Workshop and Final Coordination Meeting on Nuclear  
Medicine Techniques in Neurological Diseases II (ICNMP-PA)**

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**June 26-30, 2017  
Multimedia Hall, the Center of Medical Innovation and Translational  
Research building 1F,  
Osaka University Graduate School of Medicine,  
Osaka, Japan**

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**Local Course Director**

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# PROGRAM

Monday 26 June 2017		
09:00-09:30	Opening remarks Pre-Course Evaluation	Pascual, Thomas (Technical Officer, IAEA) Shakhashiro, Abdulghani (IAEA Programme Management Officer) Prof. Jun Hatazawa Course Director
<b>SESSION 1</b>  <b>Chair</b>  <b>GIESEL, Frederik</b> <b>University Hospital Heidelberg</b> <b>Department of Nuclear Medicine Clinic of Radiology</b> <b>69120 Heidelberg</b> <b>Germany</b>  <b>Pascual, Thomas (Technical Officer, IAEA)</b>		
09:30- 10:30	Instrumentation of SPECT/CT, PET/CT, and PET/MR  ILO: Review and discuss the importance of Instrumentations used in SPECT and PET combined with CT or MR for Neurological Imaging using Nuclear Medicine techniques	Dr. Seiichi Yamamoto Nagoya University, Nagoya, Japan
10:30-11:30	Handling computer software, modeling, and image analysis  ILO: Review and discuss the importance of handling computer software, modeling, and image analysis for Neurological Imaging using Nuclear Medicine techniques	Dr. Masanori Ichise National Institute of Radiological Sciences, Chiba, Japan
11:30:12:30	Brain anatomy and molecular imaging  ILO:  1.Discuss the role of Brain Anatomy and Molecular Imaging in relation to practice of nuclear medicine 2. Integrate the concepts discussed in relation to best practices of brain imaging using nuclear techniques.	Dr. GIESEL, Frederik University Hospital Heidelberg Department of Nuclear Medicine Clinic of Radiology 69120 Heidelberg Germany

<b>12:30-13:30</b>	Lunch Break	
<b>13:30-14:00</b>	<b>Public special lecture:</b> Introduction of “Quantum Scalpel” Project and future perspectives (tentative).	Dr. Toshio Hirano President, Quantum and Radiological Science and Technology, Chiba, Japan
<b>14:00-14:45</b>	Radiopharmaceuticals in brain imaging: SPECT and SPECT/CT.  ILO:  1. Recognize the significance of radiopharmaceuticals used in SPECT/CT brain imaging.  2. Integrate the concepts of radiopharmaceuticals in brain imaging within the context of best practices of the nuclear technology on the brain imaging	Dr. Hiroshi Toyama Fujita Health University, Nagoya, Japan
<b>14:45-15:30</b>	Radiopharmaceuticals in brain imaging: PET/CT and PET/MR  ILO:  1. Summarize the Radiopharmaceuticals used in PET/CT or PET/MR brain imaging  2. List examples of diseases that can be diagnosed by FDG-PET scans.  3. Discuss principal differences between FDG and non-FDG agents in brain imaging.	Dr. Tadashi Watabe, Osaka University, Osaka, Japan
<b>16:00-16:30</b>	SPECT and PET in stroke: Theory and case presentation  ILO:  1. Discuss the utilization of SPECT and PET imaging modalities in the evaluation of ischemic stroke  2. Determine the limitations SPECT and PET imaging technique in stroke in relation to CT and MR	Dr. Eku Shimosegawa Osaka University, Osaka, Japan

<b>16:30-17:00</b>	<p>Boron Neutron Capture Therapy and Nuclear Medicine</p> <p>ILO: understand the principle of boron neutron capture therapy and importance of nuclear medicine imaging in cancer patients.</p>	<p>Dr. Koji Ono Kyoto University</p>
<b>End of session 1</b>		
<p><b>17:30- Welcome Reception</b>  (Venue: Minerva, Second floor of Ginkgo Kaikan)  Hosted by Osaka University and IAEA</p>		



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**Tuesday, 27 June 2017**

**SESSION 2**

**Chair:**

**GIESEL, Frederik**  
**University Hospital Heidelberg**  
**Department of Nuclear Medicine Clinic of Radiology**  
**69120 Heidelberg**  
**Germany**

**Shakhashiro, Abdulghani**  
**(IAEA Programme Management Officer)**

<b>09:00-10:00</b>	<p>Alzheimer's Disease</p> <p>ILO:</p> <ol style="list-style-type: none"><li>1. Understand the pathophysiology of Alzheimer's disease.</li><li>2. Discuss the risk factors of Alzheimer's disease.</li><li>3. Discuss the role of nuclear medicine imaging in Alzheimer's diseases</li></ol>	<p>Dr. Hiroshi Matsuda</p> <p>National Center of Neurology and Psychiatry, Tokyo, Japan</p>
<b>10:00-11:00</b>	<p>Movement Disorder</p> <p>ILO:</p> <ol style="list-style-type: none"><li>1. Understand the pathophysiology of Movement disorders.</li><li>2. Discuss the utilization of nuclear medicine imaging modalities in the evaluation of movement disorders</li></ol>	<p>Dr. Etsuko Imabayashi</p> <p>National Center of Neurology and Psychiatry, Tokyo, Japan</p>
<b>11:00-12:00</b>	<p>Brain tumor</p> <p>ILO:</p> <ol style="list-style-type: none"><li>1. Understand the pathophysiology of Movement</li></ol>	<p>Dr. Frederik Giesel</p> <p>IAEA Experts</p>

	<p>disorders.</p> <p>2. Discuss the utilization of nuclear medicine imaging modalities in the evaluation of movement disorders</p>	
<b>12:00-14:00</b>	Lunch Break	
<b>14:00-14:30</b>	<p>Seizures</p> <p>ILO:</p> <ol style="list-style-type: none"> <li>1. Understand the pathophysiology of seizures</li> <li>2. Discuss the risk factors</li> <li>3. Discuss the role of nuclear medicine imaging in seizures</li> </ol>	<p>Dr. Daichi Sone National Center of Neurology and Psychiatry, Tokyo, Japan</p>
<b>14:30-15:00</b>	<p>Pediatric Nuclear Medicine</p> <p>ILO:</p> <ol style="list-style-type: none"> <li>1. Understand the pathophysiology/ classification of different paediatric brain tumours and neurological disorders</li> <li>2. Discuss the role of nuclear medicine imaging in paediatric brain imaging</li> </ol>	<p>Dr. Mayuki Uchiyama The Jikei Medical University</p>
<b>15:00-15:30</b>	<p>Brain Death</p> <p>ILO:</p> <p>Discuss the role of nuclear medicine imaging techniques in brain death imaging</p>	<p>Dr. Toshimitsu Momose International University of Health and Welfare, Chiba, Japan</p>
<b>16:00-16:30</b>	<p>Brain Trauma</p> <p>ILO:</p> <p>Discuss the role of nuclear medicine imaging in brain trauma</p>	<p>Dr. Toru Shiga Hokkaido University, Sapporo, Japan</p>

<b>16:30-17:00</b>	<p>SPECT and PET in Psychiatry</p> <p>ILO:</p> <ol style="list-style-type: none"> <li>1. Understand the pathophysiology/ classification of different psychiatric cases in relation to brain imaging</li> <li>2. Discuss the role of nuclear medicine imaging in psychiatry</li> </ol>	<p>Dr. Tetsuya Suhara National Institute of Radiological Sciences, Chiba, Japan</p>
<p><b>End of session 2</b></p>		





**Wednesday, 28 June 2017**

**SESSION 3**

**Chair:**

**GIESEL, Frederik**  
**University Hospital Heidelberg**  
**Department of Nuclear Medicine Clinic of Radiology**  
**69120 Heidelberg**  
**Germany**

<b>9:00-10:00</b>	Statistical Parametric Analysis in Nuclear Medicine  ILO: Review and understand basic concept of statistical parametric analysis used in SPECT and PET combined with CT or MR for Neurological Imaging using Nuclear Medicine techniques	Dr. Hiroki Kato Osaka University
<b>10:00-10:30</b>	Normal data base for statistical parametric analysis  ILO: understand the importance of normal data base for statistical parametric	Dr. Hiroki Kato Osaka University
<b>11:00-12:00</b>	Handling software and data analysis	Dr. Hiroki Kato Osaka University
<b>12:00-13:00</b>	<b>Lunch Break</b> <b>Lunch buffet hosted by Osaka University</b> <b>(Venue: Resting area in front of Multimedia Hall)</b>	
<b>13:00-15:30</b>	Review Meeting for Counterparts · Presentation of country reports (5minutes each) · Collection of country reports · Summarization of report	IAEA, Participant  One Participant from each country will need to present the project achievements, lessons learned and way forward and prepare the meeting

		<p>final report for RAS6074.</p> <p>Please coordinate who will present from your country</p>
<b>16:00-17:30</b>	Technical visit: Tenma-Tenjin PET center	
<b>End of session 3</b>		



**Thursday 29 June 2017**

**SESSION 4:**

**Chair:**

**09:00-12:00**

Case presentation (including report writing and group discussion):

ILO:

1. Describe appropriate ways of report writing in neurological cases with CT and/or MR interpretation
2. Discuss the role of Brain Imaging using actual cases for image interpretation and its relevance in clinical practice

Dr. Jun Hatazawa  
Dr. Tadashi Watabe  
Osaka University,  
Osaka, Japan

**12:00-14:00**

Lunch Break

**14:00-17:00**

Parametric image analysis of brain images (including software practice):

ILO:

1. Enumerate and discuss the different Parametric image analysis used in brain imaging

Dr. Hiroki Kato  
Osaka University,  
Osaka, Japan  
Dr. Tadashi Watabe  
Osaka University,  
Osaka, Japan

**END OF SESSION 4**

**Friday 30 June 2017**

**SESSION 5**

**CHAIR:**

**GIESEL, Frederik  
University Hospital Heidelberg  
Department of Nuclear Medicine Clinic of Radiology  
69120 Heidelberg  
Germany**

<b>9:00-10:00</b>	Nuclear Medicine Theranostics (1)  ILO: Understand the concept of nuclear medicine theranostics, production of radionuclides, and application	Dr. Mitsuaki Tatsumi Osaka University, Osaka, Japan Dr. Jun Hatazawa, Osaka University, Osaka, Japan
<b>10:00-11:00</b>	Nuclear Medicine Theranostics (2)  ILO: Understand alpha-emitting radionuclide based therapy of brain tumors and prostate cancer	Dr. Frederik Giesel IAEA Expert
<b>11:00-11:30</b>	Future application of Brain Nuclear Medicine  ILO:  1.Describe and explain future application of brain imaging using nuclear medicine techniques  2.Explore possibilities on how these newer technologies will have a positive impact on nuclear medicine practice	Dr. HATAZAWA, Jun Osaka University Graduate School of Medicine Department of Nuclear Medicine and Tracer Kinetics Osaka
<b>11:30-12:00</b>	Closing Remarks Post course evaluation	Pascual, Thomas (Technical Officer, IAEA) Shakhashiro,

		Abdulghani (IAEA Programme Management Officer) Prof. Jun Hatazawa Course Director
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