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# First International Conference and School on Radiation Imaging

SETIF, SEPTEMBER 26-30, 2021

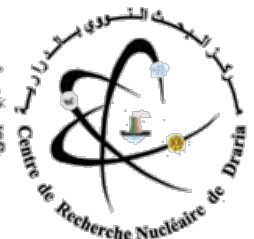
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Ferhat Abbas-Setif1 University-UFAS

Faculty of Sciences

In partnership with the Atomic Energy Commission-COMENA

ALGERIA



## Program

## Scientific Program of the Conference (In distance)

Sunday, September 26 <sup>th</sup> , 2021		
08h00 08h30	Opening Ceremony	
Oral Session 1 : Non-medical Radiation Imaging		
08h30 09h00	<p style="text-align: center;"><b>Invited Speaker 1 :</b>  <b>Dr. Burkhard Schillinger</b>                      Technical University of Munich- FRM II, Heinz Maier-Leibnitz Centre, Germany  <i><b>Neutron Imaging with cold and with fast fission neutrons at the FRM II reactor of Technische Universität München</b></i></p>	
09h00 09h20	<p><b>S. Sebold</b>                      Neutron Imaging Group, MLZ, Garching, Germany  <i><b>Neutron grating interferometry as an advanced neutron imaging method at ANTARES</b></i></p>	Chairman : Dr. Tahar Zidi
09h20 09h40	<p><b>B. Sayah</b>                      Physical and Nuclear Applications Division, Nuclear Research Centre of Draria, Algeria  <i><b>Fast Neutron Radiography feasibility study around NUR Neutron Radiography Facility Using CR-39 SSNTD</b></i></p>	
09h40 10h00	<p><b>S. Taleb</b>                      Industrial Technologies Research Centre, Algiers, Algeria  <i><b>Detection of straw defect by the region growing approach</b></i></p>	
10h00 10h20	<p><b>L. Boukerdja</b>                      Nuclear Research Centre of Birine, Algeria  <i><b>Sensitivity assessment of a neutron imaging system based on a CCD camera</b></i></p>	
10h20 10h30	Break	
Poster Session1: Non-medical Imaging		
10h30 10h40	<p><b>O. Dendene</b>                      Nuclear Research Centre of Birine, Algeria  <i><b>Theoretical Characterization Study of a Converter Screens Used in Neutron Radiography</b></i></p>	Chairman : Pr. Hacene Azizi
10h40 10h50	<p><b>N. Osmani</b>                      Department Neutron Transmutation Doping of Silicon, Nuclear Research Centre of Birine, Algeria  <i><b>Neutron irradiation effects on topological properties of CZ-Silicon (CZ-Si)</b></i></p>	
10h50 11h00	<p><b>S. Refoufi</b>                      Intelligent Systems Laboratory, Faculty of Technology, Ferhat Abbas University, Setif, Algeria  <i><b>Intelligent vision navigation of Pioneer 3-DX mobile robot</b></i></p>	
11h00 11h10	<p><b>A. Bourenane</b>                      Nuclear Research Centre of Birine (CRNB), Algeria  <b>Nuclear fuel assemblies' investigation by PGET technique, development of in-house code to reconstruct tomographic projections and automatic find mismatches</b></p>	

11h10 11h20	<b>C. Ghaoues</b> Laboratory of Dosing, Analysis, and Characterization with high resolution, Department of Physics, University of Setif1, Algeria <i>Preparation and Characterization of CaFeO<sub>3</sub> Powder for photocatalytic application under visible irradiation</i>	
11h20 11h30	<b>A. Terbouche</b> Laboratory of Dosing, Analysis, and Characterization with high resolution, Department of Physics, University of Setif1, Algeria <i>Morphological and structural properties of CZTS thin film absorbers</i>	
11h30 11h40	<b>M. Ghemid</b> Laboratory of Dosing, Analysis, and Characterization with high resolution, Department of Physics, University of Setif1, Algeria <i>The effect of HCl addition on the microstructural and photocatalytic properties of ITO thin films</i>	
11h40 12h50	<b>T. Khatir</b> LPQSD, Department of Physics, Faculty of Sciences, University Sétif1, Setif, Algeria <i>Morphological study of Cu<sub>2</sub>O nanostructures</i>	
11h50 12h00	<b>F. Houda</b> Laboratory of Condensed Matter Physics and Nanomaterials, Department of Physics, Faculty of Exact Sciences and Technology, Mohamed Seddik Ben Yahiya University, Jijel, Algeria <i>Effect of Polyvinyl alcohol (PVA) on the morphology of Hematite <math>\alpha</math>-Fe<sub>2</sub>O<sub>3</sub> thin films Scanning Electron Microscope Study</i>	
12h00 13h30	Break	
<b>Oral Session 2 : Radiation Imaging Methods and Systems Development</b>		
13h30 13h50	<b>F. Mernache</b> Nuclear Research Center of Draria, Algiers, Algeria <i>A Homemade image analysis software use in UO<sub>2</sub> mean grain size estimation</i>	Chairman: Dr. Layachi Boukerdja
13h50 14h10	<b>H. Cherief</b> Laboratory of Energy and Intelligent Systems, University of Khemis Miliana, Algeria <i>Simulation of new inorganic scintillators for computed tomography medical imaging</i>	
14h10 14h30	<b>A. Sehisseh</b> Nuclear Research Centre of Draria, Algeria <i>Particle size characterization by image analysis of an iron silicate FESI crushed powders</i>	
14h30 14h50	<b>M. L. Yahiaoui</b> Nuclear Research Centre of Birine, Djelfa, Algeria <i>Neutron imaging denoising with a deep learning method</i>	
14h50 15h10	<b>O. Al-Dhuhuri and S. Al-Falahi</b> Sultan Qaboos University, Oman <i>Recent advances and Future Directions in Mammography imaging - Technological and Clinical Aspects</i>	

15h10 15h20	Break	
Poster Session2: Medical Imaging		
15h20 15h30	<b>N.E.H. Bourai</b> Department Computer Sciences, Badji Mokhtar University, Annaba, Algeria <i>Convolutional neural networks for medical image Compression: Survey</i>	Chairman: Dr. Seif Eddine Allah Chouaba
15h30 15h40	<b>M. Boukabcha</b> Department of Biology, Faculty of Nature and Life Sciences, University of Chlef, Chlef, Algeria <i>The role of ultraviolet radiation exposure in skin cancer patients in the Algerian population: Case of Chlef region</i>	
15h40 15h50	<b>A.Z. Messalti</b> Computer Science Department, Faculty of Sciences, University of Setif1, Algeria <i>Breast cancer classification</i>	
15h50 16h00	<b>D.M. Khalal</b> Laboratory of Dosing, Analysis and Characterization with high resolution, Department of Physics, University of Setif1, Algeria <i>Dose calculation using cone beam CT acquisitions for radiotherapy treatment</i>	
16h00 16h10	<b>K. Sari</b> Department of Physics, Faculty of Science, Ferhat Abbas-Setif1 University, Algeria <i>Evaluation of Effective Delivered Dose from Computed Tomography Head Scans by OSL&amp;TL dosimetry</i>	
16h10 16h20	Break	
Oral Session 3 : Radiation Imaging Simulation and Modeling		
16h20 16h40	<b>W. Titouche</b> Nuclear Research Centre of Birine, Djelfa, Algeria <b>Neutron beam characterization at the neutron radiography facility of Es-salam research reactor by Monte Carlo simulations</b>	Chairman: Dr. Seif Eddine Allah Chouaba
16h40 17h00	<b>Y. Bouaichaoui</b> Nuclear Research Centre of Birine, Algeria <i>Overview of tracers' techniques using in CFD modeling of Boron Behaviour and Pressurized thermal shock</i>	
17h00 17h20	<b>F. Bezoubiri</b> Medical Physics Department, Radiology Physics Division, Nuclear Research Centre of Algiers, Algeria. <i>Simulation of dynamic 18FDG PET images for lesion detectability investigation using kinetic modeling and XCAT phantom</i>	
17h20 17h40	<b>N. Benaskeur</b> Department of Physics, Faculty of Science, University of Setif 1, Algeria <i>Monte-Carlo Code for modeling and simulation of tomographic image</i>	

**Monday, September 27<sup>th</sup> , 2021**

**Oral Session 4 : Medical Imaging, Molecular Imaging, and Nuclear Medicine**

<b>08h00 08h30</b>	<b><u>Invited Speaker 2:</u> Pr. Habib Zaidi</b> PET Instrumentation & Neuroimaging Laboratory, Geneva University Hospital, Switzerland <b><i>The emerging role of deep learning in multimodality image analysis</i></b>	<b>Chairman: Pr. Habib Zaidi</b>
08h30 08h50	<b>M. Lahlabou</b> Radiotherapy Department, HCA Hospital, Kouba, Algiers, ALGERIA. <b><i>Commissioning of LDR brachytherapy TPS using Gafchromic</i></b>	
08h50 09h10	<b>I. Shiri</b> Division of Nuclear Medicine and Molecular Imaging, Department of Medical Imaging, Geneva University Hospital, CH-1211 Geneva 4, Switzerland <b><i>Towards Routine PET Image Artifact Detection and Correction using Deep Convolutional Neural Networks</i></b>	
09h10 09h30	<b>B. A. Bouchikhi</b> Laboratory of Analysis and Applications of Radiation LAAR, University of Science and Technology of Oran (USTO), Algeria <b><i>Monte Carlo simulation using the GATE /GEANT4 platform for breast imaging, and dose calculation</i></b>	
09h30 09h50	<b>A. Bentaibi</b> Department of Radiotherapy, HCA hospital, Kouba, Algiers, Algeria <b><i>A simple method for an a-Si EPID characterization allowing the passage from image-guided to dose-guided radiotherapy</i></b>	
09h50 10h10	<b>A. Sanaat</b> Division of Nuclear Medicine & Molecular Imaging, Geneva University Hospital, CH-1211, Geneva, Switzerland <b><i>DeepGATE: A Multilayer Perceptron Model for the Assessment of PET Spatial Resolution and Sensitivity using Monte Carlo Simulations</i></b>	
<b>10h10 10h20</b>	<b>Break</b>	

**Oral Session 5 : Advanced Imaging and Image Processing Methods**

<b>10h20 10h50</b>	<b><u>Invited Speaker 3:</u> Dr. Yassine Bouchareb</b> COM&HS, Sultan Qaboos University, Oman <b><i>Artificial Intelligence Approaches in Medical Imaging and Their Impact on patient outcomes - Strengths, Weaknesses, Opportunities and Threats</i></b>	
10h50 11h10	<b>F. Berrimi</b> Department of Computer Science, Faculty of Sciences, University of Ferhat Abbas, Setif, Algeria <b><i>Performance of machine learning for face recognition</i></b>	
11h10 11h30	<b>H. Al-Jafri and N. Al-Ghafri</b> Sultan Qaboos University, Oman <b><i>Advances and Trends in Magnetic Resonance Imaging- The Technological and Practical Differences between 3T and 1.5T MR imaging</i></b>	

11h30 11h50	<b>D.M. Khalal</b> Laboratory of Dosing, Analysis and Characterization with high resolution, Department of Physics, University of Setif1, Algeria <i>Applications of Artificial Intelligence in Radiation Therapy</i>	Chairman: Dr. Yassine Bouchareb
11h50 12h10	<b>M. Al-Jabri, K. Al-Ghafri and T. Al-Shukairi</b> Sultan Qaboos University, Oman <i>Recent Advances in Fluoroscopy Imaging – Technology, Applications and Challenges</i>	
12h10 12h30	<b>N. Frahta</b> Sciences and Technology Department, Setif-1 University, Setif, Algeria <i>A Robust Deep Model Based on the Attention Mechanism for the Classification of X-ray images Chest of Covid-19's Patients</i>	
12h30 13h30	Break	
<b>Oral Session 6 : Image Processing and Data Analysis Techniques</b>		
13h30 14h00	<b>Invited Speaker 4:</b> <b>Prof. Abdelmalik Taleb-Ahmed</b> IEMN UMR CNRS 8520, Département OAE - Digital Communications Group: Université Polytechnique Hauts de France, Valenciennes, France <i>What's new for machine learning in medical imaging?</i>	
14h00 14h20	<b>B. Mansouri</b> University of Saida, Algeria <i>Fourier Synthesis For Image Reconstruction using Bayesian Total Variation and Hidden Markov Model</i>	Chairman: Dr. Djamel Eddine Chouaib Belkhiat
14h20 14h40	<b>D.M. Khalal</b> Department of Physics, University of Setif1, Algeria <i>Automatic segmentation of liver in CT images using U-Net</i>	
14h40 15h00	<b>H. Zouaoui</b> Department of Computer Science, University of Sétif1, Algeria <i>Segmentation of MRI images by the algorithm FPSO-FPCM for detection of multiple sclerosis</i>	
15h00 15h20	<b>W. Boukellouz</b> National Higher School of Computer Sciences, Algiers, Algeria <i>An auto-encoder model for segmenting brain tumours from magnetic resonance images</i>	
15h20 15h40	<b>Y. Azzi</b> Department of Computer Sciences, Ferhat Abbas Setif1 University, Algeria <i>Medical Image Analysis and Brain Tumor Segmentation in Magnetic Resonance Images with Deep Learning</i>	
15h40 15h50	Break	
15h50 16h10	<b>H. Saadi</b> Department of Computer Sciences, Badji Mokhtar University, Annaba, Algeria <i>Multi-Agents segmentation for Mammography</i>	

16h10 16h30	<b>I. Mehidi</b> Laboratory of Dosing, Analysis and Characterization with high resolution (LDAC), University of Setif1, Algeria. <i><b>Retinal Blood Vessel Image Segmentation by Common Algorithms: Performance Analysis</b></i>	<b>Chairman:</b> <b>Pr. Fayçal Kharfi</b>
16h30 16h50	<b>I. Bouharati</b> Department of Radiology, Faculty of Medicine, Ferhat Abbas-Sétif1 University, Sétif, Algeria <i><b>Urinary tract imaging: Intelligent analysis</b></i>	
16h50 17h10	<b>A. Lebal</b> Department of Mathematics and Computer Science, Amar Telidji University, Laghouat, Algeria <i><b>Attention ResNet model for Alzheimer's disease stage detection using MRI images</b></i>	
17h10 17h30	<b>S. HAMDI</b> Department of Computer Science, University of Ferhat Abbas Setif 1, Setif, Algeria <i><b>Convolutional Neural Network for detecting Alzheimer's disease in the early stages from Magnetic Resonance Imaging</b></i>	
17h30 18h00	<b>Closing Ceremony</b>	

## Program of the School on Radiation Imaging and image Processing

<b>Thursday, 28 September</b>	<b>3D Tomography</b>
	<b>Lecturers: Pr. Fayçal Kharfi, Pr. Habib Zaidi, Dr. Layachi Boukedja, and Dr. Omar Denden</b>
08h00-08h30	<b>Opening Ceremony</b>
08h30-10h00	1 <sup>st</sup> Lecture : Fundamental of Transmission Tomography
10h00-11h15	Coffee Break
10h15-11h45	2 <sup>nd</sup> Lecture : PET and SPECT Tomography
11h45-12h00	Open Discussion
12h00-13h30	Lunch Break
13h30-15h00	1 <sup>st</sup> Practical Work : X-ray Tomography in Practice
15h00-15h30	Coffee Break
15h30-17h00	2 <sup>nd</sup> Practical Work : 3D Image Reconstruction and Analysis
<b>Wednesday, 29 September</b>	<b>Scanning Electron Microscopy (SEM)</b>
	<b>Lecturers: Pr. Mohamed Guemmaz, Dr. Melia Hamici, and Mr. Ilyas Sekhri (Eng.)</b>
08h00-09h30	1 <sup>st</sup> Lecture : Fundamental Physics and Imaging Principle in SEM
09h30-10h00	Coffee Break
10h00-11h30	2 <sup>nd</sup> Lecture: Reminders on X-ray Energy Diffractive Spectroscopy EDX
11h30-12h00	Open Discussion
12h00-13h30	Lunch Break
13h30-15h00	1 <sup>st</sup> Practical Work : Vacuum Technology-Pumps and Gauges
15h00-15h30	Coffee Break
15h30-17h00	2 <sup>nd</sup> Practical Work : Practice and Demonstration on JEOL-7001F SEM
<b>Tuesday, 30 September</b>	<b>Image Analysis and Processing</b>
	<b>Lecturers: Dr. Djamel Eddine Bekhiat, and Dr. Moussa Chemseddine</b>
08h00-09h30	1 <sup>st</sup> Lecture: Introduction to Image Processing
09h30-10h00	Coffee Break
10h00-11h30	2 <sup>nd</sup> Lecture : Artificial Intelligence in Image Processing
11h30-12h00	Open Discussion
12h00-13h30	Lunch Break
13h30-15h00	1 <sup>st</sup> Practical Work : Segmentation of Medical Images by Conventional Methods
15h00-15h15	Coffee Break
15h15-16h45	2 <sup>nd</sup> Practical Work : Image Manipulation Under Octave Environment
15h45-17h00	<b>Closing Ceremony</b>