

**PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA**  
**MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH**  
**NATIONAL POLYTECHNIC SCHOOL OF ORAN - MA**  
**LABORATORY OF APPLIED BIOMECHANICS AND BIOMATERIALS**



**Program of the International Conference on Innovation in Biomechanics and Artificial Intelligence**  
**ICIBAI 2026, April 29–30, 2026**

**Wednesday, April 29, 2026**

<b>08:15 – 09:30</b>	<b>Registrations</b>
<b>09:30 – 09:40</b>	Opening Ceremony and Address by <b>the Director of the National Polytechnic School of Oran</b> <b>Pr. BOUKLI Hacene Fouad</b>
<b>Plenary Session I</b> <b>Chairs: Pr. LARABI M. and Pr. AOUR B.</b>	
<b>09:40 - 10:20</b>	Conference 1: <b>Pr. Farid AMIROUCHE</b> University of Chicago, Illinois, USA <b>Orthopaedic Biomechanics: From Mechanistic Insight to Predictive Surgical Innovation</b>
<b>10:20 - 10:50</b>	Conference 2 : <b>Pr. Salah RAMTANI</b> University of Sorbonne Paris Nord <b>Dynamics of Bone Remodeling: From Microcracking to Tumor–Bone Interactions</b>
<b>10:50 - 11:30</b>	<b>Coffee Break</b> <b>Poster Session I</b> <b>Chairs: Pr. BENNOUNA M. S. and Pr. MOUALEK S.; Dr. MEBARKI S. and Dr. SELIT A.</b>

**Wednesday, April 29, 2026**

**Oral Session I**

Oral Session I		
Time	Conference Room of the Library Chairs : Pr. GHEBRIOUT B. et Pr. MOUALEK S.	Mediatech room of the library Chairs : Pr. BRAHAMI M. and Pr. BENCHENANE.
11:30 - 11:45	Presentation 1: <b>BOUTICHE Raouia</b> , ENSTA Alger <b>Improving The Mechanical and Tribological Properties of Total Hip Prostheses - Wear of the Cup on UHMWPE</b>	Presentation 1: <b>BOUKLI-HACENE Rabab</b> , ENP Oran - MA <b>An AI-enabled decision support system for smart waste management</b>
11:45 - 12:00	Presentation 2: <b>SELLOUM Rabia</b> , University of Batna 2 <b>Unified Post-Quantum Security for IoT Telemedicine via AI-Driven Multimodal Biometrics, Homomorphic Encryption, and Quantum Key Distribution</b>	Presentation 2: <b>SAIM Meriem</b> , University of Tlemcen <b>An innovative deep learning framework for sarcoma histopathology classification: efficient netb3 transfer learning with cross-validation, mixup regularization and test-time augmentation ensemble</b>
12:00 - 12:15	Presentation 3: <b>LARABI Ilyes</b> , ULB, Brussels, Belgium <b>Finite element analysis of the biomechanical behavior of patients with severe maxillary bone resorption rehabilitated with four zygomatic implants: a 10 cases' clinical study</b>	Presentation 3: <b>HEBALI Khaled</b> , University of Mascara <b>High-Sensitivity GaN MOS-HEMT BioMEMS Biosensor with High-κ Gate Dielectrics</b>
12:15 - 12:30	Presentation 4: <b>BABA Assia</b> , Tlemcen university <b>Three-dimensional anatomical modeling of the knee joint</b>	Presentation 4: <b>BELKHOUS Lamri</b> , Sidi Bel Abbes University <b>High-FDM Mid-Infrared Optofluidic Sensing Using Plasmonic-like Highly-Doped Silicon Micromirrors</b>
12:30 - 12:45	Presentation 5: <b>SELIT A.</b> , Faculté de Médecine d'Oran <b>Anatomie, fondement de biomécanique humaine : analyse historique de l'évolution pédagogique en Algérie et perspectives contemporaines</b>	Presentation 5: <b>DALI YUCEF Sarra</b> , Tlemcen university, <b>A novel technique for left ventricular evaluation in cardiac cine MRI</b>
<b>Lunch break</b>		

**Wednesday, April 29, 2026**

**Plenary Session II**

**Chairs: Pr. AOUR B. and Pr. RAMTANI S.**

<b>14:00 - 14:30</b>	Conference 3: <b>Pr. Hakim CHIALI</b> Centre Hospitalo-Universitaire de Tlemcen <b>Hybridview : modèles de simulation haute fidélité en médecine interventionnelle, utilisation des biomatériaux</b>
<b>14:30 – 15:00</b>	Conference 4 : <b>Dr. OUSSALAH Kanza</b> IINSA Lyon, France <b>Image-based simulation for transcatheter navigation : from finite element modeling to the design of a data-driven proof of concept training simulator</b>
<b>15:00 – 15:30</b>	<b>Coffee Break</b> <b>Poster Session II</b> <b>Chairs : Pr. LARABI M. and Dr. GOUASMI S. ; Pr. MOUALEK S. and Pr. AOUR B.</b>

**Wednesday, April 29, 2026**

**Oral Session II**

Time	Conference Room of the Library Chairs : Pr. LARABI M. and Dr. SELIT A.	Mediatech room of the library Chairs : Pr. BENNOUNA M.S. and Pr. OULD CHIKH K.
15:30 – 15:45	Presentation 1 : <b>DAOUI Hassiba</b> , Tizi-Duzou university <b>Assessment of Bone Elasticity Using Ultrasonic Techniques</b>	Presentation 1 : <b>KHALDI Mokhtar</b> , University of Mascara <b>Effect of environmental aging on tensile performance of talc-reinforced polypropylene matrix</b>
15:45 – 16:00	Presentation 2 : <b>AMEDDAH Hacene</b> , University of Batna 2 <b>Image processing of the retina for the purpose of detecting the vascular tree</b>	Presentation 2 : <b>AIT SI SAID Chahinez</b> , Tizi Duzou University <b>A Sustainable Approach for the Production of Bioactive Phenolic Derivatives for Biomaterial Applications</b>
16:00 – 16:15	Presentation 3 : <b>DERKAOUI Orkia</b> , University of Saida <b>Automated Segmentation of Complex Cardiac Structures using 3D Attention-based CNNs: Applications in Medical Imaging</b>	Presentation 3 : <b>Nadjla Hemamouche</b> , USTHB, Bab Ezzouar, Algiers <b>Tailoring the microstructure of titanium alloys for biomedical applications</b>
16:15 – 16:30	Presentation 4 : <b>KOUADRI Aii</b> , University of Djelfa <b>Imperceptible and robust medical image watermarking scheme for telemedicine using hybrid stationary wavelet and two-dimensional discrete cosine transforms</b>	Presentation 4 : <b>SAHLI Abdelkrim</b> , University of Bechar <b>Artificial neural network optimization of alkali-treated camel manure/polyurethane composites for sustainable orthopedic applications</b>
16:30 – 16:45	Presentation 5 : <b>BENAROUS Leila</b> , Univ. of Laghouat <b>Pediatric disease diagnosis via multimodel fusion of symptom text and clinical images <span style="color: red;">Online</span></b>	Presentation 5 : <b>KIROUANI Taki-eddine</b> , Tebessa university <b>Efficient Compression of Anatomical Shape Data using discrete least square Chebyshev polynomial approximation</b>
16:45 – 17:00	Presentation 6 : <b>BENTADJ Cheimaa</b> , Univ. of Saida <b>Interpretable modeling for breast cancer mortality prediction: state of the art and methodological perspectives on gene expression programming <span style="color: red;">Onlign</span></b>	Presentation 6 : <b>MAACHE Abdelhak</b> , University of Batna 2 <b>Numerical Investigation of Fatigue Behavior in Polyethylene Inserts for Total Knee Arthroplasty</b>
<b>Workshop Session 1 (Library computer room)</b>		
17:00 – 18:30	Training workshop: <b>Dr. CHERIF Z.I</b> Faculté de Médecine d'Oran, CHU Oran <b>Maitriser le logiciel de modélisation 3D « Winserf » : de la théorie à la pratique</b>	

**Thursday, April 30, 2026**

**Plenary Session III**

**Chairs: Pr. BENCHENANE H. and BOUABDESLAM H.**

<b>09:00 - 09:30</b>	Conference 5: <b>Pr. Abderrahim BENMOUSSAT</b> , Tlemcen University <b>Biomaterials and their impact on technological development</b>	
<b>09:30 – 10:00</b>	Conference 6 : <b>Pr. Mohammad Mansoob Khan</b> , University of Brunei Darussalam <b>Green Synthesis of Functional Nanomaterials: Bridging Green Chemistry and Nanotechnology for a Sustainable Future (online)</b>	
<b>Oral Session III</b>		
<b>Time</b>	Conference Room of the Library <b>Chairs: Pr. MOKHTARI M. and Pr. BENZAAMA H.</b>	Mediatech room of the library <b>Chairs : Pr. BENMOUSSAT A. and Pr. BOUSLAMA M.</b>
<b>10:00 – 10:15</b>	Presentation 1 : <b>GOUASMI Sadek</b> , ENP Oran - MA <b>Modélisation numérique de l'impact des propriétés mécaniques d'un bridge implanta-porté sur le comportement biomécanique</b>	Presentation 1 : <b>GUEZZOUL M.</b> , ENP Oran - MA <b>Advanced Characterization of Zirconia-Based Dental Biomaterials: Sol-Gel-Derived <math>ZrO_2-HfO_2-Y_2O_3</math> Thin Films for Functional Biomaterial Coatings</b>
<b>10:15 – 10:30</b>	Presentation 2 : <b>ATMANI Djamila</b> , CDTA Alger <b>Nanostructuration du titane par anodisation : caractérisation physico-mécanique et évaluation in vivo</b>	Presentation 2 : <b>NEBATTI ECH CHERGUI Abdelkader</b> , University of Ain Temouchent <b>Fabrication, Characterization, and Antibacterial Activity of ZnO and Eu-Doped ZnO Thin Films</b>
<b>10:30 – 10:45</b>	Presentation 3 : <b>BENNEZZAR Zineb</b> , Astrakhan state technical university - Russia <b>Access to healthcare in rural areas of Algeria: institutional foundations and digital transformation</b>	Presentation 3 : <b>DERRI Amira</b> , ENP Oran - MA <b>Characterization of Defect-Engineered Transition-Metal-Doped ZnO Thin Films for Biomaterial Coatings</b>
<b>10:45 – 11:00</b>	Presentation 4 : <b>AIT KACI Abdelouahab</b> , Tizi-Ouzou university <b>Finite Element Analysis and Optimization of Functionally Graded Middle Ear Prostheses under Different Degradation Profiles</b>	Presentation 4 : <b>HERIR Hadjer</b> , ENP Oran -MA <b>Ce/In-Doped SnO Coated Thin Films for Biomaterials: chemical, Structural, optical, morphological, and Antibacterial Performance Toward Orthopedic and Dental Implants</b>
<b>11:00 – 11:30</b>	<b>Coffee Break</b> <b>Poster Session III</b> <b>Chairs : Pr. MOKHTARI M. and Pr. BENZAAMA H. ; Pr. BRAHAMI M. and Dr. BENCHENANE H.</b>	

**Thursday, April 30, 2026**

**Oral Session IV**

	Conference Room of the Library Chairs : Pr. AMEDDAH H. and Pr. REBIAI C.	Mediatech room of the library Chairs : Pr. ATMANI D. and Pr. BENCHENANE H.
11:30 – 11:45	Presentation 1 : <b>ARAR Karim</b> , University of Batna 2 <b>Biomechanical modelling and simulation of musculoskeletal assistance in the human hip joint</b>	Presentation 1 : <b>BENZIADA Mohammed</b> , USTHB Alger <b>In vitro degradation, mechanical performance, and SEM study of auxetic PLA-HA scaffolds</b>
11:45 – 12:00	Presentation 2 : <b>BERROUKCHE Abdelkrim</b> , University of Saida <b>Biomechanics of Blood Flow in the Age of Artificial Intelligence</b>	Presentation 2 : <b>DJEBLI Amina</b> , INP of Constantine <b>Comparative Study of UHMWPE/20 wt. % Al<sub>2</sub>O<sub>3</sub> Biocomposites for Intervertebral Disc Prosthesis: Influence of Processing Techniques on Structure and Properties</b>
12:00 – 12:15	Presentation 3 : <b>HAMMAR Salim</b> , ENP Oran - MA <b>Optimization of Planar Microcoil Configurations for Enhanced Magnetic Performance and Reduced Power Dissipation in Microfluidic Systems for Biological Applications</b>	Presentation 3 : <b>BENSALEM Chafik</b> , University of Bouira <b>Thermal response of human's body-clothing assembly to fire incoming fluxes</b>
12:15 – 12:30	Presentation 4 : <b>YEROU Amine</b> , University of Mascara <b>Development of Eco-Friendly PMMA Dental Composites Reinforced with Hydroxyapatite from Eggshell Waste</b>	Presentation 4 : <b>BENNACEUR Hamza</b> , University of Batna 2 <b>Pimesh: stochastic quasi-isotropic lattices for optimized bone substitutes – in-silico comparison of trabecular bone vs. Ti-6Al-4V, PEEK, and HA-PCL</b>
12:30 – 12:45	Presentation 5 : <b>MAMMERI Selma</b> , University of Tébessa <b>Deep Learning-Based Multi-Class Classification of Lung Nodules with Emphasis on Suspect Cases for Early Clinical Decision Support</b> <b>Online</b>	Presentation 5 : <b>BRIOUA Mourad</b> , Univ. of Batna 2 <b>Integrated topology optimization and fatigue analysis of a bioactive composite dental implant with graded gyroid lattice structures</b>
12:45 – 13:00	Presentation 6 : <b>MEBARKI Salah</b> , LABAB, ENP Oran <b>Développement et validation d'un modèle numérique de prothèse totale de genou</b> <b>onlign</b>	Presentation 6 : <b>MAZOUNI Soumia</b> , ENST Alger <b>Micropolar Biomechanical Modelling of Random Fibrous Networks: A Multiscale Homogenization Approach</b>

**Lunch break**

**Thursday, April 30, 2026**

**Oral Session V**  
**Conference Room of the Library**  
**Chairs: Pr. LARABI M. and Pr. AOUR B.**

<b>14:00 – 14:15</b>	Presentation 1 : <b>BELARBI Boumediene</b> , Tlemcen university <b>implementation of artificial intelligence: the case of dental surgery treatments</b>
<b>14:15 – 14:30</b>	Presentation 2 : <b>Benkhalfa Mohamed Amine</b> , ENP Oran - MA <b>from 3d ct to 2d detections : a lightweight multi-view mip bepipeline for real-time vertebra localization</b>
<b>14:30 – 14:45</b>	Presentation 3 : <b>GASMI Bachir</b> , ENP Oran - MA <b>Analysis of the fracture behavior of orthopedic cement using submodeling technique</b>
<b>14:45 – 15:00</b>	Presentation 4 : <b>BALTACH Abdelghani</b> , University of Tiaret <b>Étude biomécanique numérique de l'effet d'une barrière en élastomère sur la répartition des contraintes et la durabilité des implants dentaires</b>
<b>15:00 – 15:15</b>	Presentation 5 : <b>CHADLI Samir</b> , University of Adrar <b>Creep and recovery characterization of biomaterial: emulsion with cade oil stabilized by tween 80, <a href="#">online</a></b>
<b>15:15 – 15:30</b>	Presentation 6 : <b>ALLAL Assia</b> , ENP Oran - MA <b>Vers une stratification personnalisée du risque de rupture de l'anévrisme de l'aorte abdominale, <a href="#">online</a></b>
<b>15:30 – 16:00</b>	<b>Wrap-up and Closing</b>
<b>Workshop Session 2</b>	
<b>16:00 – 17:30</b>	Training workshop: <b>ABDELOUAHED Elamine</b> , ENP Oran - MA <b>Impression 3D en biomécanique : de la conception à la réalisation</b>

**Poster Session I: Wednesday, April 29, 2026: 10:50 – 11:30**

**Chairs: Pr. BENNOUNA M. S. and Pr. MOUALEK S. ; Dr. MEBARKI S. and Dr. SELIT A.**

<b>N°</b>	<b>Authors</b>	<b>Title</b>
<b>P01</b>	CHERIF Z.I., CHU Mostaganem	<b>Modélisation 3d anatomique de l'appareil urinaire : apport du dataset « korean visible human » et du logiciel Winsurf en pédagogie médicale</b>
<b>P02</b>	SELIT A., CHU Oran	<b>Anatomie réelle vs modélisation numérique en biomécanique</b>
<b>P03</b>	BERREBIH Kamélia, University of Oran 1	<b>A Low-Cost Embedded Phonocardiography System for Cardiac Sound Acquisition and Heart Sound Segmentation</b>
<b>P04</b>	BOURI ismail, University of Mostaganem	<b>Etude et simulation numériques de la prothèse Trans fémorale du genou par Ansys</b>
<b>P05</b>	KHIARI Mohamed El Amine, ENP Oran	<b>Simulating full-facial injectable aesthetic procedures using biomechanics and python: a computational approach for predicting soft tissue deformation in private aesthetic clinics</b>
<b>P06</b>	BOUKHATMI Leila, Faculty of medicine of Oran	<b>Organisation fasciculaire du lca et patterns lésionnels : approche anatomique et fonctionnelle</b>
<b>P07</b>	BELAGHIT A., University of Ghardaia	<b>Numerical study of the influence of abdominal aortic aneurysm diameter on hemodynamic parameters</b>
<b>P08</b>	HARROUG Med. R., University of Batna 2	<b>Manufacturing methodology by 3d printing of a femoral stem</b>
<b>P09</b>	SLIMANI A.R. et al., ENP Oran	<b>Substitution of an Orthopedic Cement via Temperature, Morphological (AFM) and Structural (Photoluminescence) defect investigation</b>
<b>P10</b>	GORADIA Youcef, USTOran	<b>Numerical investigation of iso-elastic dental implants: a 3d comparative finite element analysis of peek vs. titanium</b>
<b>P11</b>	REBIAI Cherif, University of Batna 2	<b>Finite element analysis of the elastoplastic behavior of cardiovascular stent</b>
<b>P12</b>	REZGUI Wail, ENST Alger	<b>Optimization of Selective Sorting Using Computer Vision: Review of Delta Robotic Solutions and Deep Learning Methods</b>

**Poster Session II: Wednesday, April 29, 2026 : 15:00 – 15:30**

**Chairs: Pr. LARABI M. and Dr. GOUASMI S. ; Pr. MOUALEK S. and Pr. AOUR B.**

<b>N°</b>	<b>Authors</b>	<b>Title</b>
<b>P01</b>	DAMBA N. , University of Adrar	<b>Biomechanical Analysis of the Cervical Spine with an Artificial Disc Implant</b>
<b>P02</b>	MEDDEBER W., ENP Oran - MA	<b>Technologies d'interfaces de contrôle de fauteuils roulants</b>
<b>P03</b>	DRAI A. University of Mascara	<b>Dynamic behavior of functionally graded coated nanobeams for smart and adaptive structures</b>
<b>P04</b>	AZAIZ, Abdelkader, University of Tiaret	<b>Artificial intelligence-based modeling of thermoluminescence glow curves for dosimetric applications</b>
<b>P05</b>	BELAMEIRI Nadia, UST Oran	<b>Artificial Intelligence Model for Detection Efficiency Prediction of LaBr<sub>3</sub> Detector</b>
<b>P06</b>	HAMADOUCHE Fella, University of Chlef	<b>Methodological Approach for 3D Modeling and Discretization of Fomur bone</b>
<b>P07</b>	CHERIF Salah, University of Ghardaia	<b>Hybrid modeling of blood flow using navier–stokes equations and machine learning</b>
<b>P08</b>	RAYEH Mohammed Riad, University of Saida	<b>A hybrid fusion pipeline for abnormal tooth category classification in panoramic dental x-rays</b>
<b>P09</b>	ZAMI Fatima, University of Tissemsilt	<b>AB initio study of the ground state, elastic, electronic and magnetic properties of a full heusler compound</b>
<b>P10</b>	BOUKHATMI Leila, Faculty of medicine of Oran	<b>Three-dimensional anatomical analysis of the tibial plateau for the improvement of meniscal substitution biomaterials</b>
<b>P11</b>	BENKHETTOU Abdelkader, University of Sidi Bel Abbes	<b>A Multi-Cell Mattress Design for Biomechanical Optimization of Spine Trunk Support via FEM and Evolutionary Algorithms</b>
<b>P12</b>	KHATIR Omar, Sidi Bel Abbes University	<b>Biomechanical Trade-offs in Tympanoplasty: How Cartilage Thickness Dictates TORP Performance</b>

**Poster Session III: Thursday, April 30, 2026: 11:00 – 11:30**

**Chairs: Pr. MOKHTARI M. and Pr. BENZAAMA H. ; Pr. BRAHAMI M. and Dr. BENCHENANE H.**

<b>N°</b>	<b>Authors</b>	<b>Title</b>
<b>P01</b>	TELLI F., ENP Oran - MA	<b>Machine learning-based Prediction of impact behavior in fabric-reinforced laminated composites</b>
<b>P02</b>	HOUARI H., University of Mascara	<b>Numerical simulation of the behavior of UHMWPE during the ECAE process using a 120° die</b>
<b>P03</b>	BOUMAIZA D., University of Mascara	<b>Data-driven prediction of hygrothermal-induced adhesive degradation in structural steel assemblies</b>
<b>P04</b>	TARFAIA G., ENP Oran	<b>Study the effects of different variable on the dimensional changes of different dental amalgams</b>
<b>P05</b>	BELARBI B., University of Tlemcen	<b>Contribution to the integration of artificial intelligence “rapid prototyping design case</b>
<b>P06</b>	BELDJILALI Mohammed, ENP Oran	<b>An innovative machine learning approach to predict electronic properties and multifunctional performance of Ag-sepiolite nanocomposites</b>
<b>P07</b>	HAMMANI H., University of Mostaganem	<b>Effet des mouvements quotidiens sur la stabilité primaire de la prothèse totale de hanche par la méthode des éléments finis</b>
<b>P08</b>	MORSLI Abdelkader, University of Medea	<b>Effectiveness of artificial intelligence - fuzzy logic control compared with conventional control – synchronous reference frame techniques for a shunt active power filter</b>
<b>P09</b>	NADJI, Loubna, University of Naama	<b>An analytical-machine learning framework based on pi-ann-gpr for free vibration analysis of functionally graded cylindrical nanoshells reinforced with graphene nanoplate</b>
<b>P10</b>	IGGUI Kahina, University of Bouira	<b>Functional characterization of PLA/anthocyanin biocomposites</b>
<b>P11</b>	BENKAHLA Nouredine, ENP Oran - MA	<b>Finite Element Analysis of the Elastic-Plastic Behavior of Titanium Foams</b>
<b>P12</b>	BENSALAH Hocine, University of M'Sila	<b>Two-dimensional photonic crystal biosensor with high sensitive for simultaneous detection of glucose and cancer cells</b>
<b>P13</b>	ALLAOUI Mohamed, RERUSE Adrar	<b>The effect of loading on the in-vitro behavior of standard femoral stems</b>