ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
SCUOLA DI MEDICINA E CHIRURGIA

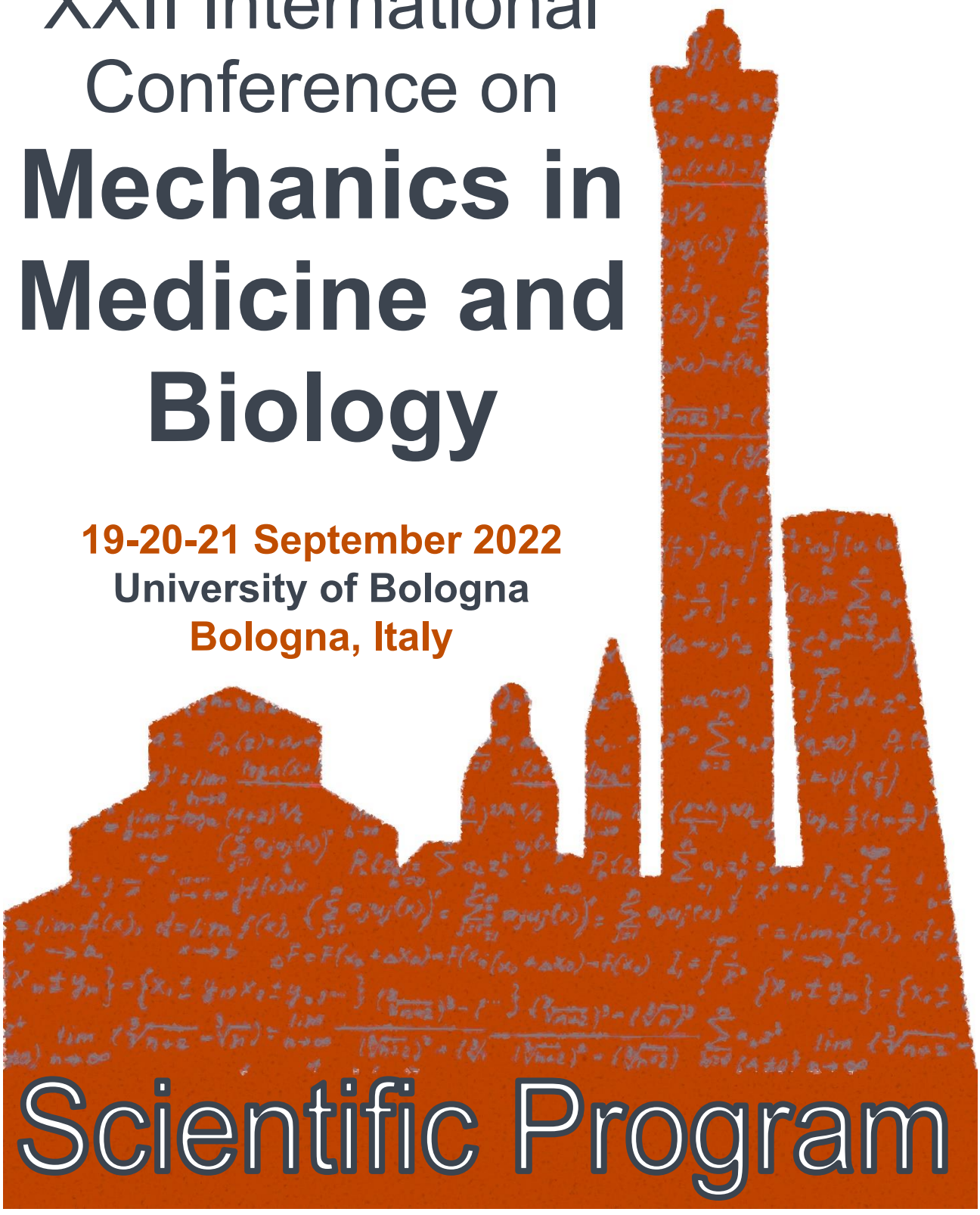
XXII International Conference on

Mechanics in Medicine and Biology

19-20-21 September 2022

University of Bologna

Bologna, Italy



Scientific Program

Congress Chair: **Ivan Corazza**

ICMMB President: **Prof. Fong-Chin Su**

Local Scientific Committee (University of Bologna):
Laura Bragonzoni
Gastone Castellani
Laura Cercenelli
Ivan Corazza
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Eddie Yin-Kwee Ng*, PhD, PGDipTHE (Nanyang Technological University, Singapore)*
Mohamed Yacin Sikkandar *(Majmaah University, Saudi Arabia)*
Fong-Chin Su*, PhD (National Cheng Kung University, Taiwan)*
Salah Ramtani *(Sorbonne Paris Nord University, France)*

Organizing Committee
Laura Cercenelli
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Elena Nardi
Pier Luca Rossi

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Congress location:
Scientific sessions
"Murri", "Didattica" and "Linguistica" Rooms (Pav. 25-27-28), first floor
Coffee breaks and light lunch
Coordination Center for Medical Physics Activities (Pav. 29)

S. Orsola-Malpighi Hospital

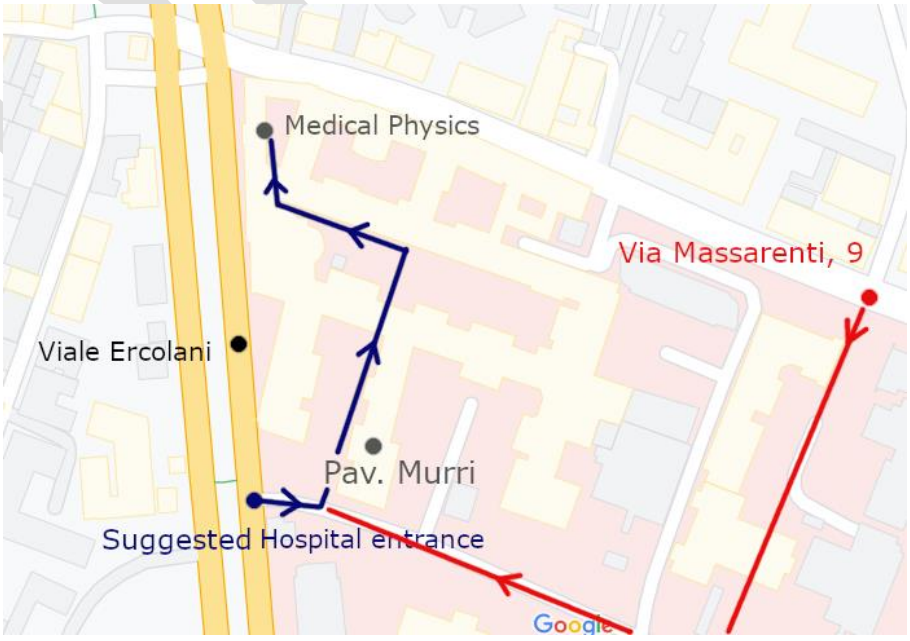
Main entrance: Via Massarenti, 9
Suggested entrance: Viale Giambattista Ercolani, 8

40138, Bologna, Italy

Travel information

How to get to the conference venue if you travel:

- By AIRPLANE: G. Marconi Airport is only 6 km far from the City Centre and Sant'Orsola-Malpighi Hospital. The airport is connected to the City Centre via AEROBUS or SHUTTLE and to the Central Station via MARCONI EXPRESS
- By TRAIN: Central Train Station is only 3 km far from Sant'Orsola-Malpighi Hospital. From the station, you can use city-buses to come to Sant'Orsola-Malpighi Hospital – to find timetable and lines please visit https://www.tper.it/
- By BUS: Starting from different location inside the historical Centre of Bologna, a lot of bus lines arrive or stop at Sant'Orsola-Malpighi Hospital. You can find path, timetable and lines at https://www.tper.it/



19 September

	Murri Room	Didattica Room	Linguistica Room
8.30-9.30	Registration		
9.30-10.00	**Opening Ceremony** Dr. Ivan Corazza (Conference Chair) Prof. Fong-Chin Su (ICMMB President, National Cheng Kung University, Taiwan) Prof. Francesco Saverio Violante (Dean of the Medical School, University of Bologna) Prof. Gianandrea Pasquinelli (Head of Dept. of Experimental, Diagnostic and Specialty Medicine -DIMES, University of Bologna)		
10.00-10.30	Plenary: **Hand Biomechanics and Rehabilitation** Prof. Fong-Chin Su		
10.30-11.00	Coffee break		
11.00-12.15	S1M: ORTHOPEDICS - BIOMECHANICS	S1D: ADVANCES IN CARDIOVASCULAR	S1L: ADVANCED METHODS in NEUROSCIENCE - BIOSIGNAL
12.20-13.20	S2M: MACHINE LEARNING AND ARTIFICAL INTELLIGENCE	S2D: WEARABLE AND eHEALTH	S2L: CO_2 ANGIOGRAPHY
13.20-14.20	Lunch		
14.20-15.35	S3M: MACHINE LEARNING AND ARTIFICAL INTELLIGENCE	S3D: DETECTORS and DOSIMETRY	S3L: BIOMATERIAL and PROSTHESIS
15.40-16.55	S4M: ORTHOPEDICS - BIOMECHANICS	S4D: PET and NUCLEAR MEDICINE	S4L: ADVANCED METHODS in NEUROSCIENCE - BIOSIGNAL

20 September

	Murri Room	**Didattica Room**	**Linguistica Room**
8.30-9.00	Plenary: **Emerging methods in Biosignal Processing** Prof. Mohamed Yacin Sikkandar		
9.05-10.20	S5M: BIOSIGNAL PROCESSING	S5D: ORTHOPEDICS - DEVICES AND TECHNOLOGY	S5L: SPORT SCIENCE
10.20-10.50	Coffee break		
10.50-12.20	S6M: Virtual modeling and 3D printing	S6D: CELL and MOLECULAR BIOPHYSICS, BIOMECHANICS and IMAGING	S6L: BIOSIGNAL PROCESSING
12.25-13.25	S7M: MRI	S7D: WEARABLE AND eHEALTH	S7L: SPORT SCIENCE
13.25-14.25	Lunch		
14.25-15.55	S8M: CELL and MOLECULAR BIOPHYSICS and BIOMECHANICS	S8D: WEARABLE AND eHEALTH	S8L: ADVANCES IN CARDIOVASCULAR
16.00-17.00	S9M: ORTHOPEDICS - DEVICES AND TECHNOLOGY	S9D: MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE	S9L: CONVENTIONAL RADIOLOGY and CT
20.00	Social Dinner		

21 September

	Murri Room	Didattica Room
8.30-9.00	Plenary: **AI and imaging frontiers applied to human biological system in medical physics** Dr. Gabriele Guidi	
9.05-10.20	S10M: COMPUTER METHODS IN RADIOTHERAPY	S10D: ADVANCED METHODS in NEUROSCIENCE - IMAGING
10.20-10.50	Coffee break	
10.50-11.20	Plenary **Research in Total Knee Arthroplasty Biomechanics: to close the gap between surgeons and engineers** Prof. Bernardo Innocenti	
11.20-12.00	Closing ceremony	

19 September

8.30 – 9.30 Registration

Murri Room

9.30 - 10.00 **Opening Ceremony**
Dr. Ivan Corazza (Conference Chair)
Prof. Fong-Chin Su (ICMMB President, National Cheng Kung University, Taiwan)
Prof. Francesco Saverio Violante (Dean of the Medical School, University of Bologna)
Prof. Gianandrea Pasquinelli (Head of Dept. of Experimental, Diagnostic and Specialty Medicine - DIMES, University of Bologna)

10.00 – 10.30 **Plenary Talk (virtual)**
Hand Biomechanics and Rehabilitation (Prof. Fong-Chin Su)

10.30 – 11.00 Coffee break

Murri Room

S1M: ORTHOPEDICS - BIOMECHANICS

CHAIRS: BERNARDO INNOCENTI, EDOARDO BORI

11.00	Mohamed Yacin Sikkandar	*Finite Element Analysis of Human Knee Joint for Futuristic Customized Knee Implants*
11.15	Shib Sundar Banerjee	*Analysis of Variability in Active Muscle Stiffness with Myoelectric Activity during Incremental Isometric Loading*
11.30	Laura Bragonzoni	*Longitudinal functional assessment of a transfermoral amputee patient treated with osseointegration surgery*
11.45	Agostino Igor Mirulla	*Numerical study for primary stability assessment in osseointegrated transfemoral prostheses*
12.00	Marat Dosaev	*Phenomenological approach to human chest modelling*

S2M: MACHINE LEARNING AND ARTIFICAL INTELLIGENCE

CHAIRS: CLAUDIA SALA, DAVID BIANCHINI

12.20	Xiaojun Chen (Virtual)	*AI and AR-based image processing, navigation and robotics in computer assisted cranio-maxillofacial surgery*
12.35	C Sridevi (Virtual)	*Recognition of abnormalities in gastrointestinal tract from endoscopic images using deep learning architectures*
12.50	Riccardo Biondi	*Interactive visualization of biological network structures in Virtual Reality: a study experience*
13.05	Benedetta Santoro	*A User-Friendly Tool to Compute the Infection Probability of COVID-19 in Closed Environments*

13.20 – 14.20 Light lunch

S3M: MACHINE LEARNING AND ARTIFICAL INTELLIGENCE

CHAIRS: GABRIELE GUIDI, ERICA BALBONI

14.20	Nicolas Derus	*Synthetic Data Generation of Histopathological Images*
14.35	Ramakrishnan Swaminathan	*Proposal of a Framework for the Analysis of Comorbid Conditions using Intelligent Extraction of Multiple Fluid Biomarkers*
14.50	Claudia Sala	*Evaluation of Machine Learning models for the detection of Antimicrobial Resistance based on Synthetic Data*
15.05	Alagu Samyraj (Virtual)	*Multi-class Twin SVM with deep features for classification of acute myeloid leukemia cells*
15.20	Matteo Botteghi	*CYTOFastUrine: An Innovative Integrated Solution For Automated Urine Cytology AI supported Diagnostics*

S4M: ORTHOPEDICS - BIOMECHANICS

CHAIRS: NICOLA LOPOMO, AGOSTINO IGOR MIRULLA

15.40	Edoardo Bori	*Push-Pull Locking Plate VS Standard Locking Plate in Proximal Humeral fractures: a finite element study*
15.55	Claudio Belvedere	*Combination of functional and morphological data for the mechanics of high-tibial osteotomy*
16.10	Bernardo Innocenti	*Biomechanical analysis of the knee joint during flexion in healthy, cruciate deficient and cruciate substitute conditions*
16.25	Alessandro Gambardella	*Mapping the Young's modulus of cortical bone via atomic force microscopy*
16.40	Sathya Bharathy (Virtual)	*Design and Biomechanical Analysis of Stand-Alone Posterior Lumbar Cage Implant for Interbody Fusion*

Didattica Room

S1D: ADVANCES IN CARDIOVASCULAR RESEARCH

CHAIRS: ROMANO ZANNOLI, EMANUELA MARCELLI

11.00	Liang Zhong (Virtual)	*Coronary Physiology Based Diagnosis of Ischemia-Inducing Stenoses: Basics and Clinical Applications*
11.15	Stefano Spagni	*Pilot study on photopletysmographic and electroencephalographic monitoring of candidates to atrial fibrillation electrical cardioversion.*
11.30	Giulia Massaro	*Personalized configuration for atrial fibrillation external electrical cardioversion to improve acute efficacy*
11.45	Vasu Buddakkaagri	*Numerical Simulations of Hybrid Nano-Hemodynamics through an Inclined Tapered Artery with Stenosis and Aneurysm*
12.00	Mehtap Lafcı Büyükkahraman	*Mathematical Modeling of Myocardial Infarction Treatment with Stem Cells*

S2D: WEARABLE AND eHEALTH

CHAIRS: BEATRICE FRABONI, MATTEO BOTTEGHI

12.20	Elias Premi	*Telemonitoring in ophthalmology, database and eHealth softwares*
12.35	Alessandro Sabattini	*Revolutionary Wearable Technologies - The YOUCARE textile system by Accyourate Group Spa*
12.50	Mehdi Mouton	*Optimization and Industrialization of a Metabolic Holter device and Software development*
13.05	Serena Moscato (Virtual)	*Agreement between ECG and PPG in HRV analysis during provocative tests in healthy adults*

13.20 – 14.20 Light lunch

S3D: DETECTORS AND DOSIMETRY

Chairs: LORENZO ISOLAN, EDOARDO MASTELLA

14.20	Kumar Nandan Sinha	*Sensitivity Analysis of Temperature Distribution Profiles of Breast with Tumors for varied Fat Layer Thickness*
14.35	Andrea Ciavatti	*Medical Applications of Flexible and Large area X- and gamma-Ray Detectors*
14.50	Beatrice Fraboni	*Organic thin films as flexible, large area X-ray and proton detectors for medical therapy*
15.05	Aboma Negasa Guracho	*Target Effects vs. Non-Target Effects in Estimating the Carcinogenic risk due to Galactic Cosmic Rays in Exploratory Space Missions*
15.20	Pier Luca Rossi	*Pediatric vs adult dosimetry in CBCT: a challenge?*

S4D: PET AND NUCLEAR MEDICINE

CHAIRS: LIDIA STRIGARI, NICOLA MAFFEI

15.40	Maria Francesca Morrone	*Role of 99mTc-DPD scintigraphy in quantification of myocardial uptake of Hereditary Transthyretin-Related Cardiac Amyloidosis*
15.55	Luigi Manco	*PET-derived radiomic applications in breast cancer: State of Art*
16.10	Giulia Paolani	*A novel tool for predicting dose distribution of non-sealed 188Re resin in NMSC patients.*
16.25	Miriam Santoro	*Optimal parameters of a Bayesian-Penalised-Likelihood algorithm for improving the accuracy of activity distribution in 90Y trans-arterial radioembolization*
16.40	Mattia Taroni o Giacomo Zambelli	*Development and its application of an innovative technique for the impurities identification of 177mLu in hospital waste and radiopharmacy residues*

Linguistica Room

S1L: ADVANCED METHODS IN NEUROSCIENCES

CHAIRS: RAMAKRISHNAN SWAMINATHAN, LAURA CERCENELLI

11.00	Aditi Bhattacharya (Virtual)	*Evaluation of Zernike moments of corpus callosum for discrimination of autism using Random Forest*
11.15	Chetan Tanaji Rakshe (Virtual)	*Investigation of brain networks in autism using fractal, non-fractal and pearson correlation method*
11.30	Loganathan Selvarasu	*Detection of Schizophrenia using 4-Dimensional attention based Deep Learning Model*
11.45	Kavitha Anandan	*Optimization of preprocessing routines in Speech Imagery based EEG Signals*
12.00	Ramesh Munirathinam (Virtual)	*Entropy analysis of EEG patterns for effective classification of Huntington's Disease*

S2L: CO_2 ANGIOGRAPHY

CHAIRS: PIER LUCA ROSSI, IVAN CORAZZA

12.20	Romano Zannoli	*Biomechanical aspects involved in CO2 Angiography*
12.35	Lorenzo Casadei	*Radioprotection in CO2 Angiography*
12.50	Luca Monti	*Optimization of gas injection in CO2 Angiography*
13.05	Luca Neri (Virtual)	*CO2 Computed Tomography*

13.20 – 14.20 Light lunch

S3L: BIOMATERIALS AND PROSTHESIS

CHAIRS: SALAH RAMTANI, NADIA ANTONOVA

14.20	Kheng-Lim Goh (Virtual)	*Emerging technologies in Green biocomposites for orthoses and external prostheses*
14.35	Celine Falentin-Daudre	*Bioactive polymer grafting impacts on silicone breast implants' mechanical properties and cell responses.*
14.50	Caroline Pereira	*Grafting phosphonic acid polymers onto titanium implant for craniofacial prostheses*
15.05	Gregorio Marchiori	*Micro-CT and uniaxial loading to reveal the 3D microstructure under increasing strain of tendon-ligament scaffolds*
15.20	Miglena Doneva	*The choice of hernia meshes according to age of the patients*

S4L: ADVANCED METHODS IN NEUROSCIENCES

CHAIRS: AHMED BAKHIT ALANAZI, IVAN CORAZZA

15.40	Praveen K. Govarthan (Virtual)	*Deep-learning framework for ECG based categorical emotional states assessment*
15.55	Abirami Selvaraj (Virtual)	*Characterization of seizure subtypes using time-frequency features from scalp EEG signals*
16.10	Sriram Kumar Peedapalli (Virtual)	*Classification of emotional states using electrodermal activity and random forest*
16.25	Joseph Mathew (Virtual)	*Detection of Seizure Types using EMD-based Feature Fusion of Scalp EEG*
16.40	Kavitha Anandan	*Evaluation of fractality of brain cognition in young children using task-based EEG signals*

20 September

Murri Room

8.30 – 9.00 **Plenary Talk**
Emerging methods in Biosignal Processing (Mohamed Yacin Sikkandar)

S5M: BIOSIGNAL PROCESSING

CHAIRS: MOHAMED YACIN SIKKANDAR, KAVITHA ANANDAN

9.05	Divya Sasidharan (Virtual)	*Analysis of surface electromyography signals under fatiguing conditions using fuzzy recurrence plot and GLCM features*
9.20	Sidharth Narayan (Virtual)	*Surface electromyography based analysis of muscle fiber type characteristics during fatigue using frequency domain features*
9.35	Divya Sasidharan (Virtual)	*Complexity Analysis of Surface Electromyography Signals Under Fatigue Using Hjorth Parameters and Bubble Entropy*
9.50	Nithya Rajagopalan (Virtual)	*Design of Biosignal Controlled Hand Exoskeleton for Assistive Purposes*
10.05	Lakshmi M Hari	*Comparison of Machine Learning Tools for the Differentiation of Fatiguing Contractions in Biceps Brachii Muscle using Time Frequency Decomposed sEMG Signals*

10.20 – 10.50 Coffee break

S6M: VIRTUAL MODELING AND 3D PRINTING

CHAIRS: LAURA CERCENELLI, EMANUELA MARCELLI

10.50	Agostino Igor Mirulla	*Analysis of different geometrical features to achieve close-to-bone stiffness material in medical device: a feasibility numerical study*
11.05	Mattia Mele	*Additive Manufacturing of a cranial implant with bioactive energy-absorbing polymer via Arburg Plastic Freeforming*
11.20	Nicolas Emiliani	*Fabrication of a patient-specific 3D printed multi-material simulator for Endoscopic Sinus Surgery*
11.35	Gabriele Camillo Concordia	*3D Printing in Hospitals*
11.50	Lorenzo Tartarini	*Design and development of an augmented reality intraoperative guide system with stereoscopic visualization for robotic surgery*
12.05	Doris Laurent	*How Additive Manufacturing can improve Healthcare*

S7M: MAGNETIC RESONANCE IMAGING

CHAIRS: DAVID BIANCHINI, LUIGI MANCO

12.20	Priscilla Dinkar Moyya	*Static and Dynamic breast DCE-MRI radiomics in quantifying the neoadjuvant chemotherapy treatment response*
12.40	Flavia Liporace	*Implementation of patient-specific dielectric models from MR acquisitions*
12.55	Stefano Orsolini (Virtual)	*A web-based TableTop MRI scanner for remote and automated acquisitions*
13.10	Erica Balboni	*Radiomics from DCE MRI and BRCA1/2 mutations in triple-negative invasive ductal carcinoma of the breast*

13.25 – 14.25 Light lunch

S8M: CELL AND MOLECULAR BIOPHYSICS AND BIOMECHANICS

CHAIRS: NADIA ANTONOVA, ALI SALEHI

14.25	Valerii Orel (Virtual)	*Mechanoluminescence of Walker-256 carcinosarcoma cells in vitro by magneto-mechanochemical effects*
14.40	Francesco Decataldo	*PEDOT:PSS OECTs as versatile devices for real-time monitoring cytotoxicity and viral infection*
14.45	Filippo Piccinini (Virtual)	*CometAnalyser: a user-friendly, open-source deep-learning microscopy tool for quantitative comet assay analysis*
15.10	Dikshitha CM	*Ratiometric Analysis of Structural Changes in Microscopic Cellular Images for Drug-Induced Cytotoxic Assessment*
15.25	Sreelekshmi P. Sreekumar	*Analysis of Phenotypic Changes in Cell Painted Suborganalles Using Cell Ratiometric*
15.40	Francesco Trisolini	*Hospitex International: The Cytology Company*

S9M: ORTHOPEDICS – DEVICES AND TECHNOLOGIES

CHAIRS: LAURA BRAGONZONI, GREGORIO MARCHIORI

16.00	Harikrishna Makaram	*Influence of pedicle screw thread depth on skeletal anchorage in osteoporotic and normal bones – Finite element study*
16.15	Tullio Andrea Revetria	*Biomechanical analysis of femoral stem-design features in physiological and osteoporotic bone during static loading conditions*
16.30	Hsiao-Feng Chieh	*Effects of Finger Fine Motor Training with Various Music on Brain Activation of the Elderly*
16.45	Edoardo Bori	*Experimental Analysis of Knee Joint Kinematics and Kinetics under Different Boundary Conditions*

20.00 Social dinner

Didattica Room

S5D: ORTHOPEDICS – DEVICES AND TECHNOLOGIES

CHAIRS: NICOLA LOPOMO, CLAUDIO BELVEDERE

9.05	Anita Broshka	*Dynamic Finite element analysis of malposition in mobile and fixed bearing UKA prosthesis during gait*
9.20	Rachele Saldari	*Dynamic Analysis of different levels of constraint in Total Knee Arthroplasty during Gait and Squat*
9.35	Vittoria Attolini	*Development and Validation of a Device for the Acquisition of Kinematics of Barbell during Training*
9.50	Marika Padalino	*Biomechanical analysis of use of porous meta-diaphyseal custom-made cones in knee revision surgery*
10.05		

10.20 – 10.50 Coffee break

S6D: CELL AND MOLECULAR BIOPHYSICS AND BIOMECHANICS

CHAIRS: SALAH RAMTANI, ANDREA CIAVATTI

10.50	Filippo Bonafè	*AC amplification gain in organic electrochemical transistors (OECTs) for impedance-based single cell sensors*
11.05	Nadia Antonova	*Relationship between blood and blood cells microrheological and micromechanical characteristics and flow and oxygen transport parameters*
11.20	Francesco Casadei	*Nanopore long read DNA sequencing allows for higher accuracy in brain cancer analysis*
11.35	Khaoula Benabdderrahmane	*Development of an electrospun patch for the treatment of myelomeningocele*
11.50	Ali Salehi	*Applications of tissue-engineered plant scaffolds and introduction of a novel model for cardiovascular research*
12.05	Filippo Piccinini (Virtual)	*Deep learning models for segmenting brightfield images of cancer multicellular spheroids used for radiomics analysis*

S7D: WEARABLE AND eHEALTH

CHAIRS: IGOR DIEMBERGER, ELENA NARDI

12.20	Ng Yin Kwee Eddie (Virtual)	*Blood Pressure Prediction using Real-world ambulatory Photoplethysmography (PPG)*
12.40	Beatrice Fraboni	*Smart bandage with textile chemical sensors for wearable healthcare*
12.55	Giuseppe Walter Antonucci	*Building a framework for handless Hw/Sw open modular data assistant*
13.10	Stefano De Nigris	*Latest developments in EMG and IMU hardware integration, signal transmission and processing*

13.25 – 14.25 Light lunch

S8D: WEARABLE AND eHEALTH

CHAIRS: MATTEO BOTTEGHI, FRANCESCO BASILICO

14.25	Flavio D'Innocenzo	*Design, implementation and production of the microcontroller unit for signal processing of Youcare wearable technology*
14.40	Luca Neri (Virtual)	*Wearable Devices: Challenges and Opportunities in Disease Monitoring*
14.45	Alberto Spadotto (Virtual)	*Wearable Multiparametric Remote Monitoring: MySIGN*
15.10	Aalan Natarajan (Virtual)	*Vision-guided autonomous robotic system for pick and place tasks in healthcare settings*
15.25	Deodato Assanelli	*HOWDY SENIOR: Single lead ECG recording and long term monitoring during medium-high intensitity exercise*
15.40	Jacopo Tasca	*HOWDY SENIOR: A comfortable, user-friendly and accurate ECG monitoring wearable device*

S9D: MACHINE LEARNING AND ARTIFICAL INTELLIGENCE

CHAIRS: GASTONE CASTELLANI, RAMAKRISHNAN SWAMINATHAN

16.00	Nico Curti	*Semi-supervised active learning in automated wound image segmentation via smartphone mobile App*
16.15	Gianluca Carlini	*Fully automated estimation of glomerular basement membrane thickness via active semi-supervised learning model*
16.30	Padmavathi V. (Virtual)	*Preliminary Detection of COVID-19 using Hybrid Deep Learning Approach*
16.45	Riccardo Scheda	*Explainable Machine Learning Framework for Age Prediction using Brain Complexity Features*

20.00 Social dinner

Linguistica Room

S5L: SPORT SCIENCE

CHAIRS: LAURA BRAGONZONI, EDOARDO BORI

9.05	Remya R Nair (Virtual)	*SURFACE ELECTROMYOGRAPHY BASED ANALYSIS OF FIBER TYPE CHARACTERISTICS USING REASSIGNED MORLET SCALOGRAM*
9.20	Pui Wah Kong (Virtual)	*Electromyography investigation of the upper extremity muscles in 9-ball break shot between skilled and less-skilled players*
9.35	Ban Chuan Loh (Virtual)	*Reliability of Video-Based Running Gait Analysis in Recreational Runners*
9.50	Sofia Marini	*Effects of a 3-month outdoor training program on physical performance and quality of life*
10.05	Sofia Marini	*A 3-month exercise program performed in a green-blue space: the "Parco del Mare" pilot study*

10.20 – 10.50 Coffee break

S6L: BIOSIGNAL PROCESSING

CHAIRS: KAVITHA ANANDAN, AHMED BAKHIT ALANAZI

10.50	Vinothini Selvaraju	*Preterm Birth Detection based on Decision Fusion and Stationary Segments of Multichannel Uterine EMG signals*
11.05	J.V.Alamelu (Virtual)	*Prediction of lag time for multiple infusion environments using regression methods*
11.20	Avanish Kumar Singh (Virtual)	*EEG-EMG wavelet coherence analysis between C1, C4, CZ AND TA muscle*
11.35	Avanish Kumar Singh (Virtual)	*EEG-EMG wavelet coherence analysis during ramp descent, level walking, stair ascent, no movement, stair descent, ramp ascent*
11.50	Yedukondala Rao Veeranki (Virtual)	*Assessment of emotional states using Electrodermal activity signals and variable frequency spectral estimation*
12.05		

S7L: SPORT SCIENCE

CHAIRS: ROMANO ZANNOLI, CLAUDIO BELVEDERE

12.20	Melody Jiale Chiam (Virtual)	*Effects of muscle rub application on physical performance in athletes*
12.40	Jing Wen Pan (Virtual)	*Simulation of the upper-limb cueing movement in 9-ball*
12.55	Gianluca Rossetto	*Anterior cruciate ligament force during landing from different block jumps techniques in volleyball players*
13.10		

13.25 – 14.25 Light lunch

S8L: ADVANCES IN CARDIOVASCULAR

CHAIRS: IGOR DIEMBERGER, GIORGIO CATTANEO

14.25	Camilla Gironi	*Feasibility of the novel IntraValvular Impedance sensing applied to biological heart valves: design and in vitro evaluation*
14.40	Douhou Abdelmalek	*The use of mixture theory to potentially help in the understanding arterial wall de-stiffening therapy*
14.45	Laura Cercenelli	*A pneumatic simulator of the venous system of a human arm for testing and tuning a novel noninvasive device for home monitoring of venous pressure*
15.10	Jenny Schaefer	*In vitro modelling of respiration-induced movements of the renal arteries for implant investigation in EVAR*
15.25	Ashkan Shiravand	*Fabrication of compliant vascular models for in-vitro implant investigation*
15.40	Omkar Sunil Pande	*Influence of discordancy in umbilical arteries on the stress distribution in Wharton's jelly*

S9L: CONVENTIONAL RADIOLOGY AND COMPUTED TOMOGRAPHY

CHAIRS: PIER LUCA ROSSI, ANDREA CIAVATTI

16.00	Fatehia Bushara	*MicroCT Contrast and Imaging Protocol Optimization for Analysis of Microstructure in Ligaments and Tendons*
16.15	Lorenzo Isolan	*A Monte Carlo calibration approach for a dual-energy CT system*
16.30	Giuseppe Walter Antonucci	*Avio-TC: a suite to provide diagnostic examinations by state-of-the-art equipment in remote African areas*
16.45	Sukanta Kumar Tulo	*Association of Chest Radiographic Geometric Changes in Mediastinum with COVID-19 Conditions*

20.00 Social dinner

21 September

Murri Room

8.30 – 9.00 **Plenary Talk**
AI and imaging frontiers applied to human biological system in medical physics (Gabriele Guidi)

S10M: COMPUTERS METHODS IN RADIOTHERAPY

CHAIRS: LIDIA STRIGARI, GABRIELE GUIDI

9.05	Edoardo Mastella	*Dosimetric characterization of a mobile accelerator for Intraoperative Radiation Therapy*
9.20	Francesca Itta	*Finite element biomechanical modeling of parotid glands morphing for H&N adaptive radiotherapy*
9.35	Giada Sceni	*New techniques of radiotherapy treatment plan verifications: Radcalc 3D Monte Carlo and dosimetric ML tools*
9.50	Nicola Maffei	*Heartbeat cardiac motion model to evaluate intra-fraction dosimetric variations in radiotherapy treatments*
10.05	Domenico Finocchiaro	*An automatic tool for LATTICE radiotherapy treatment optimization*

10.20 – 10.50 *Coffee break*

10.50 – 11.20 **Plenary Talk**
Research in Total Knee Arthroplasty Biomechanics: to close the gap between surgeons and engineers (Bernardo Innocenti)

11.20 - 12.00 Conclusion

Didattica Room

S10D: ADVANCED METHODS IN NEUROSCIENCE

CHAIRS: GASTONE CASTELLANI, GIORGIO CATTANEO

9.05	Martina Tarozzi	*Comparative analysis of the three-dimensional chromatin conformation changes occurring in patients affected by prion disease*
9.20	Sreelakshmi Shaji	*Analysis of 3D Morphometric Alterations in Ventricular Brain Structures for Differentiation of MCI Subtypes in MR Images*
9.35	Abinaya Sundari Ravi (Virtual)	*Classification of Schizophrenia using Voxel based Morphometry and Recurrent Neural Network*
9.50	Ahana Priyanka Chellian	*Diagnosis of Neurodegenerative Disorder in Brain Images using Hybrid Machine Learning Methods*
10.05	Joseph Mathew (Virtual)	*Detection of Tonic-clonic seizures from the band power ratio of Scalp EEG*