

IFIT 2026

THE 6TH INTERNATIONAL
CONFERENCE OF IFTOMM ITALY



FOLIGNO, ITALY

9-11 September 2026



CONFERENCE PROGRAM

Under the patronage of



Wednesday 9th September

Day 1

"FALOCI PULIGNANI CONFERENCE HALL"
PALAZZO TRINCI

Piazza della Repubblica 25

9.00-10.15	<i>Registration</i>
10.15-11.00	Opening Ceremony
11.00-11.30	<i>Coffee Break</i>
	Plenary Lectures
11.30-12.00	<i>Engaging Generation Z in the Science of Machines and Mechanisms Through a Student-Centered Approach</i> <u>Prof. Paulo Flores</u>
12:00-12.30	<i>Riding Robotics and Ability Mining</i> <u>Prof. Masaharu Komori</u>
12:30-12:45	<i>O.M.G. Company Milestones and Cooperation with UniPG in the field of Mechanisms and Machine Science</i> <u>Eng. Luca Galletti</u>
12.50	<i>Walking to CENTRO STUDI</i>
CENTRO STUDI Via Oberdan 123	
13.00-14.15	<i>Lunch Buffet (Room Aula Picuti)</i>

Wednesday 9th September

Day 1

CENTRO STUDI

Via Oberdan 123

Room 1

Biomechanical Engineering

Chairpersons: Visconte C.; Bertin M.

14.15-14.30	Kinematic design of assistive exoskeletons for upper-limb <i>Authors: Bertin, M., Cocuzza, S., Palomba, I.</i>
14.30-14.45	Ergonomic Design of a Pediatric Driving Workstation for Neurocognitive Rehabilitation Using Biomechanical Simulation <i>Authors: Perrelli, M., Cosco, F., Alvaro, F., Gorgone, G., Mundo, D.</i>
14.45-15.00	AI assisted classification of zebrafish embryos for automatic injection systems <i>Authors: Micheletti, J., Charkas, S., Diouf, A., Pagani, R., Haliyo, S., Legnani, G., Fassi, I.</i>
15.00-15.15	Model Based Control Architecture for a Gait Rehabilitation Exoskeleton <i>Authors: Durante, F., Sambrotta, C., Beomonte Zobel, P.</i>
15.15-15.30	Preliminary design of the actuation system of a wearable upper limb exoskeleton <i>Authors: Colucci, G., Bertin, M., Palomba, I., Frezza, A., Tagliavini, L., Carbonari, L., Visconte, C.</i>
15.30-15.45	Biomechanics of sprint running through markerless video analysis: impact of carbon shoes on technique and efficiency in competitive athletes. <i>Authors: Dammicco, A., Reina, G.</i>
15.45-16.00	A Manipulability-Based Model of Maximum Crank Torque in Cycling <i>Authors: Paglialonga, F., Soria, L., De Carolis, S., Mummolo, C.</i>

16.00-16.30	<i>Coffee Break (Room Aula Picuti)</i>
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Gearing and Transmissions

Chairpersons: Camalleri M.; Castellano A.

16.30-16.45	Calculation Method of Semi-Conjugate Profiles for Inner D-cut Shape Based on Gear Meshing Theory <i>Authors: Nagahara, E., Matsuura, D., Kobayashi, T.</i>
16.45-17.00	Electric power recirculation in multimode power-split HEVs: implications for transmission design <i>Authors: Castellano, A., Cammalleri, M.</i>
17.00-17.15	Method of creating a computational model of the IRT indexing rotary table using AI <i>Authors: Ondrášek, J., Klein, F.</i>
17.15-17.30	Preliminary Study on RL-Based IPMSM Rotor Design for Torque Enhancement <i>Authors: Maezono, T., Endo, M., Tsutsui, Y.</i>
17.30-17.45	Nonlinear analytical modulation of curved flexure hinges with a circular center <i>Authors: Jahn, H., Fröhlich, T., Zentner, L.</i>
17.45-18.00	

19.20-21.30	<i>Welcome Light Dinner at Contrastanga's Tavern-Via Giuseppe Piermarini 42</i>
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Room 2

Adaptive and Assistive Robotic Gripping

Chairpersons: Antonelli M.G., Malvezzi M.

14.15-14.30	User-centered design of an artificial finger for hand assistive and rehabilitation robotics <i>Authors: Angelella, S., Logozzo, S., Valigi, M.C</i>
14.30-14.45	Design of a rod-driven soft enveloping gripper <i>Authors: Perini, A., Russo, M.</i>
14.45-15.00	Experimental assessment of industrial gloves on dexterity and force exertions <i>Authors: Caselli, E., Ghibaud, L., Spada, S., Silvagni, M., Cavatorta, M., Gastaldi, L.</i>
15.00-15.15	Adaptive Manipulation: Development of a Reconfigurable Three-Fingered Soft Pneumatic Gripper with Integrated Sensing <i>Authors: Stampone, N., Antonelli, M.G., Beomonte Zobel, P.</i>
15.15-15.30	Data-Driven Tracking of Wrist Motions for a Soft Exoskeleton Based on Twisted String Actuators <i>Authors: Shekar Ayu Supriyono, C., Dragusanu, M., Hasan, M., Malvezzi, M.</i>
15.30-15.45	AI-Driven Bin Picking with Low-Cost Stereo Vision: From Perception to Grasp Execution <i>Authors: Dostrašil, D.</i>
15.45-16.00	Experimental Evaluation of Technical Gesture Analysis in Para-Standing Tennis <i>Authors: Digo, E., Cornagliotto, V., De Vito, C., Di Vincenzo, G., Gastaldi, L.</i>

16.00-16.30	<i>Coffee Break (Room Aula Picuti)</i>
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Advanced Technologies for Ground and Space Mobility Applications (Special Session)

Chairpersons: Savino S., Morettini G.

16.30-16.45	A novel automated test rig for remote optical sensing in space applications <i>Authors: Angelella, S., Logozzo, S., Valigi, M.C</i>
16.45-17.00	Mechanical and Thermal Insulation Design for a Balloon-Borne CubeSat Platform: Experimental Assessment for Mechanical Survivability in Stratospheric Flights <i>Authors: Merli, F., Morettini, G., Buratti, C., Cianetti, F., Dionigi, M.</i>
17.00-17.15	Performance of AM-Integrated Hysteresis Rods for Passive Nanosatellite Stabilization in LEO Scenarios <i>Authors: Foiani, F., Stella, M., Morettini, G., Dionigi, M., Faba, A., Cianetti, F., Carletta, S.</i>
17.15-17.30	Multisensor Terrain Awareness for Safe and Sustainable Agricultural Robotics in Challenging Environments <i>Authors: Galati, R., Ugenti, A., Amodio, F., Tagliavini, L., Colucci, G., Botta, A., Carabin, G., Gronauer, A., Quaglia, G., Reina, G.</i>
17.30-17.45	Design of an instrumented electric vehicle for tire and road wear particle (TRWP) sampling: a focus on representativeness <i>Authors: Lucherini, S., Celenlioglu, M., Vecchi, R., Lippiello, F., Genovese, A.</i>
17.45-18.00	Vehicle sideslip angle estimator combining model-based and neural network methods <i>Authors: Barbaro, M., Tambasco, F., Stendardo, A., Ponticelli, L., Ruffini, M.</i>

19.20-21.30	<i>Welcome Light Dinner at Contrastanga's Tavern-Via Giuseppe Piermarini 42</i>
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Room 3

Mechatronics for Healthcare and Biomedical Applications

Chairpersons: Ceccarelli M., Takeda Y.

14.15-14.30	Design and Experimental Evaluation of Gripping Mechanisms for Automated Sewing of Biological Heart Valves <i>Authors: <u>Astuti, S.</u>, Di Michele, A., Maffiodo, D., Mazza, L., Trivella, A., Raparelli, T.</i>
14.30-14.45	Design and testing of ASSIST-shoulder device for motion assistance of shoulder articulations <i>Authors: <u>Ceccarelli, M.</u>, Russo, M., Ofonaike, E., Morales-Cruz, C.</i>
14.45-15.00	Design of a reconfigurable gynecologic phantom for robotic surgery training and demonstration <i>Authors: <u>Kierbel, C.</u>, Ming, J., Russo, M., Takeda, Y.</i>
15.00-15.15	Performance Analysis and Experimental Validation of CABLEAnkle System <i>Authors: <u>Mastrangelo, G.</u>, Chaparro Rico, B., Russo, M., Ceccarelli, M., Cafolla, D.</i>
15.15-15.30	Experimental Characterization of an Independent Link-Type Walking assisting device for Individuals with Limited Ankle Dorsiflexion Range of Motion <i>Authors: <u>Saito, T.</u>, Jiang, M., Ibara, T., Ceccarelli, M., Takeda, Y.</i>
15.30-15.45	Experimental characterization of Uc3m sensed crank device for arm exercise <i>Authors: <u>Sanz Sánchez, S.</u>, Marín, P., Díaz, V., Ceccarelli, M.</i>
15.45-16.00	Assist-as-Needed Control of a Chair-Type Device for Sit-to-Stand Assistance <i>Authors: Jiang, M., Kim, S., Zheng, J., Ohkubo, T., <u>Takeda, Y.</u></i>

16.00-16.30	<i>Coffee Break (Room Aula Picuti)</i>
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Dynamics of Machinery and multiphysics modeling

Chairpersons: Figliolini G., Maddio P.

16.30-16.45	A Penalty Contact Formulation based on Intersection Area for Planar Multibody Systems <i>Authors: <u>Maddio, P.</u>, Sinatra, R., Cammarata, A.</i>
16.45-17.00	Dynamic modelling of multibody system with one d.o.f. <i>Authors: Figliolini, G., <u>Fauceglia, F.</u>, Tomassi, L.</i>
17.00-17.15	Dynamic analysis of a railway pantograph based on a simplified Multibody model <i>Authors: Strano, S., Terzo, M., <u>Tordella, C.</u></i>
17.15-17.30	PMD: an open-source framework for planar multibody dynamics <i>Authors: <u>Cangli, G.</u>, Palmieri, M., Cianetti, F.</i>
17.30-17.45	Multi-Level Dynamic Characterisation of Off-Road Mobility-Assist Vehicle Frames <i>Authors: <u>Ansoategui, I.</u>, Etxebarria, S., Martinez de Aguirre, M., Calleja-Ochoa, A., González, H., Lopez de Lacalle, N.</i>
17.45-18.00	Influence of the supply line on the dynamic behavior of pneumatic actuators <i>Authors: Righettini, P., <u>Strada, R.</u>, Cortinovis, F., Santinelli, J., Tabaldi, F.</i>

19.20-21.30	<i>Welcome Light Dinner at Contrastanga's Tavern-Via Giuseppe Piermarini 42</i>
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Room AULA SENSI

Robotics1

Chairpersons: Quaglia G., Dede M.

14.15-14.30	Liquid Outflow Velocity Estimation for Tele-Pouring Assistance Authors: <u>Kato, F.</u> , Miura, S.
14.30-14.45	Kinematic Design and Experimental Validation of a 3-DOF Ankle Rehabilitation Exoskeleton with Wireless Control Architecture Authors: <u>Zhetenbayev, N.</u> , Duisebayeva, A., Tursunbayeva, G., Uzbekbayev, A., Sultan, A., Sergazin, G.
14.45-15.00	Controller-Driven Hand-Eye Vision System for KUKA LBR iiwa Robot Authors: Boscariol, P., Boschetti, G., <u>Minto, R.</u>
15.00-15.15	A Biofueled Renewable Minimally-Critical Biodegradable Easy-to-Disassemble Robotic Manipulator: Initial Design Authors: <u>Zocco, F.</u> , Dragusanu, M., Malvezzi, M.
15.15-15.30	Humanoid Robotics in Industrial Contexts: Critical Assessment and Hybrid Architectural Approach Authors: <u>Ponzetti, S.</u> , Neri, F., Callegari, M., Baldarelli, D.
15.30-15.45	Separation Frame Assignment for Constrained Physical Human-Robot Interaction Scenarios Authors: <u>Dede, M.</u> , Deniz, M., Mobedi, E., Tagliavini, L., Quaglia, G.
15.45-16.00	A comparative analysis of ROS2-compatible robotic simulators Authors: <u>Boschi, L.</u> , Ida', E., Carricato, M.

16.00-16.30	Coffee Break (Room Aula Picuti)
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History and Education

Chairpersons: Ceccarelli M., Bruzzone L.

16.30-16.45	Mechanisms, math and groceries: the computing cheese cutter Authors: <u>Boscariol, P.</u>
16.45-17.00	Porto Marghera: rise, decline and reconversion of one of the largest industrial ports in Europe Authors: <u>Gasparetto, A.</u>
17.00-17.15	Historical background and development of bucket chain excavators Authors: <u>Zrnić, N.</u> , Gnjatović, N., Solazzi, L., Bošnjak, S.
17.15-17.30	A industry-university collaboration scheme based on a Collaborative problem definition technology circulation model Authors: <u>Kato K.</u> , Fushinobu, K., Takeda, Y.
17.30-17.45	Teaching Dynamics of Mechanisms Using a Project-Based Learning Approach: Some Experiences at the University of Minho Authors: <u>Flores, P.</u>
17.45-18.00	Teaching Activities in the Mechatronics Courses at the La Spezia Campus of the University of Genoa Authors: <u>Bruzzone, L.</u> , Verotti, M., Belotti, V., berardengo, M., Crenna, F.

19.20-21.30	Welcome Light Dinner at Contrastanga's Tavern-Via Giuseppe Piermarini 42
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Thursday 10th September

Day 2

CENTRO STUDI

Via Oberdan 123

Room 1

Mechanism and Machines Design I

Chairpersons: Verotti M., Lanni C.

09.00-09.15	A 1-DoF Mechanism Using a Cam and a Compliant Beam for Gravity Compensation in Robotic Arms <i>Authors: Mottola, G., Garesci, F., Martini, A.</i>
09.15-09.30	Collaborative robotic polishing of luxury leather shoes: system design and experimental validation <i>Authors: Pantanetti, S., Emiliani, F., Costa, D., Palmieri, G.</i>
09.30-09.45	Linkage Design for Adjustable Constant Force Mechanism <i>Authors: Wahl-Warnken, N., Wetzlich, D., Zentner, L.</i>
09.45-10.00	Spring-Assisted Noncircular Cable-Pulley Mechanism for Balancing the Wheelchair Backrest and Footrest <i>Authors: Popescu, I., Lovasz, E., Ceccarelli, M., Filimon, A., Pop, C., Oarcea, A.</i>
10.00-10.15	Curve-Based Optimization to synthesize Planar Compliant Structures with B-spline based Curvatures <i>Authors: Zirkel, M., Luo, Y., Mukherjee, A., Fidlin, A., Zentner, L.</i>
10.15-10.30	Synthesis of cam-driven four-bar linkages for three-pose and prescribed motion program <i>Authors: Figliolini, G., Lanni, C.</i>
10.30-10.45	Accuracy evaluation of flexure hinges <i>Authors: Serafino, S., Bruzzone, L., Verotti, M.</i>
10.45-11.00	A Modular Support Structure and Pose Reconstruction Method for Particle Identification Detectors <i>Authors: Paterna, M., De Benedictis, C., Spatafora, A., Carbone, D.</i>
11.00-11.30	<i>Coffee Break (Room Aula Picuti)</i>

Vibrations

Chairpersons: Cosenza C., Spirto M.

11.30-11.45	A Super Twisting Observer for pantograph-catenary contact force estimation <i>Authors: Strano, S., Terzo, M., Tordella, C.</i>
11.45-12.00	Comparison of three PSD-guided approaches for the test tailoring <i>Authors: Grosso, P., D'Elia, G., Rubini, R., Cocconcelli, M.</i>
12.00-12.15	Versatile calculation tool for the natural frequencies of compliant mechanisms: Design and Usability Evaluation <i>Authors: Platt, V., Zentner, L.</i>
12.15-12.30	Analytical modeling of the transition between motion modes and the oscillatory-damped mode of the mixing and whipping device <i>Authors: Iskakov, Z., Bissembayev, K., Jomartov, A., Sagadinova, A.</i>
12.30-12.45	Experimental Validation of an Ultrasonic Plate Sonotrode for the Application in Needle-Punching of Nonwoven <i>Authors: Bolk, J., Minor, L., Corves, B.</i>
12.45-13.00	Analysis of Acquisition Frequency Influence on Indentation Dynamics in Non-Destructive Testing <i>Authors: Lanzarotti, M., Genovese, A., Farroni, F., Napolitano Dell'Annunziata, G., Sakhnevych, A., Timpone, F.</i>
13.00-14.30	<i>Group Photo and Lunch Buffet (Room Aula Picuti)</i>
14.10-14.30	<i>IFTToMM Italy Meeting (Room 2)</i>
14.30	<i>Depart for a Guided Tour of Assisi</i>
20.20	<i>Transfer from the city center to Delphina Palace Hotel</i>
20.30	<i>Gala Dinner at the Delphina Palace Hotel</i>

Room 2

Robotics 2

Chairpersons: Tamellin I., Idà E.

09.00-09.15	Quantitative Influence of Robot Configuration on Transparency of Admittance-controlled Industrial Robots based on Frequency Response Functions <i>Authors: Hoffmann, A., Abadzic, J., Kecskeméthy, A.</i>
09.15-09.30	Neural-Network-Based Pose Estimation of Underactuated Cable-Driven Parallel Robots <i>Authors: Dall'Olio, M., Idà, E., Carricato, M.</i>
09.30-09.45	An optimal control approach for obstacle-avoidance motion planning of differentially flat underactuated planar robots <i>Authors: Lovato, S., Tonan, M., Bottin, M., Massaro, M., Doria, A., Rosati, G.</i>
09.45-10.00	Inverse Dynamics and Static Balancing of the Single-rail Tripteron Robot <i>Authors: Boscariol, P., Tamellin, I.</i>
10.00-10.15	Control of collaborative robots via voice interface and on device deep learning <i>Authors: Emiliani, F., Costa, D., Carbonari, L., Palmieri, G., Callegari, M.</i>
10.15-10.30	Robotic sewing 3D <i>Authors: Busek, M., Antoš, J., Dostrašil, P.</i>
10.30-10.45	Optimizing the uncertain inverse dynamics bounds of the Franka Emika Panda robot <i>Authors: Fabris, G., Scalera, L., Giusti, A., Gasparetto, A.</i>
10.45-11.00	Vision-Based Robotic Disassembly Combined with Real-Time MFA Data Acquisition <i>Authors: Zocco, F., Pozzi, M., Malvezzi, M.</i>

11.00-11.30	Coffee Break (Room Aula Picuti)
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Robotics for Unstructured and Challenging Environments

Chairpersons: Botta A. Sinico T.

11.30-11.45	A biomimetic manipulator for robotic applications in underwater environments <i>Authors: Valigi, M.C., Marini, A., Logozzo, S.</i>
11.45-12.00	Compact High-Range Yaw Joint Design for Articulated Robots in Confined and Unstructured Environments <i>Authors: Toccaceli, L., Botta, A., Tagliavini, L., Colucci, G., Baglieri, L., Duretto, S., Amodio, F., Visconte, C., Quaglia, G.</i>
12.00-12.15	Automated Generation of Terramechanics-Aware Simulation Environments <i>Authors: Cottiga, S., Bourr, K., Gallina, P., Seriani, S.</i>
12.15-12.30	Mobile Manipulator for Weed Control on Uneven Terrain: preliminary tests for obstacle management <i>Authors: Pagano, S., Cosenza, C., Malfi, P., Savino, S., De Falco, D.</i>
12.30-12.45	Control and Integration of a Cable-Driven SpiRob Soft Gripper on a Collaborative Robot <i>Authors: Businaro, D., Sinico, T., Boschetti, G.</i>
12.45-13.00	Design Simulation and Testing of an Integrated Platform for Monitoring, Geological and Environmental Survey of Near Shore <i>Authors: Pugi, L., Mariottoni, E., Croci, M., Gatti, A., Cafferata, E., Giusti, L., Baldanzini, N., Falorni, M., Cerretelli, N.</i>
13.00-14.30	Group Photo and Lunch Buffet (Room Aula Picuti)
14.10-14.30	IFTToMM Italy Meeting (Room 2)
14.30	Depart for a Guided Tour of Assisi
20.20	Transfer from the city center to Delphina Palace Hotel
20.30	Gala Dinner at the Delphina Palace Hotel

Room 3

Robotics and Mobile Robotics

Chairpersons: Carbone G., Cosenza C.

09.00-09.15	Motion capture from human to robotic hand: preliminary development of a powered finger exoskeleton <i>Authors: Antonelli, M., Beomonte Zobel, P., Stampone, N., Takagi, M.</i>
09.15-09.30	Evaluating the Handshake: A Study on Human-Human Interaction for the Identification of Social Cues <i>Authors: Dragusanu, M., Vigni, F., Saviano, G., Prattichizzo, D., Malvezzi, M.</i>
09.30-09.45	Odometric Trajectory Estimation of a Differential-Drive Robot Using a FFT-Based Virtual Speed Sensor <i>Authors: Spirto, M., Malfi, P., Cosenza, C., Savino, S., Niola, V.</i>
09.45-10.00	Design and Construction of a Multimodal Robot with a Combined Air-Ground Locomotion System <i>Authors: Rybak, L., Cherkasov, V., Victoria, P., Anastasiya, V.</i>
10.00-10.15	Multibody simulation of a six-wheeled mobile manipulator: rocker-bogie vs. rigid rocker configurations <i>Authors: Pagano, S., Malfi, P., Rocca, E., Savino, S.</i>
10.15-10.30	Design Evolution of a Cable-Driven Elbow Exoskeleton with Distributed Architecture <i>Authors: Zhetenbayev, N., Bizhanov, D., Maksut, A., Sultan, A.</i>
10.30-10.45	AI-Enabled Modernisation of an Industrial Mobile Robot Built over the Legacy Stack <i>Authors: Vukolov, A., Pugliese, R., De Simone, M., Kourousias, G.</i>
10.45-11.00	Extended Kalman Filter-based estimation of wheel-ground forces in Skid-Steering Mobile Robots <i>Authors: Strano, S., Terzo, M., Tordela, C.</i>

11.00-11.30	<i>Coffee Break (Room Aula Picuti)</i>
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Advances in Vehicle Dynamics and Control

Chairpersons: Carello M., Tordela C.

11.30-11.45	Benchmarking analysis of different NN architectures for vehicle sideslip angle estimation <i>Authors: Mandragora, G., Guidone, A., Romano, M., Aprea, M., Stefanelli, A.</i>
11.45-12.00	Preliminary Experimental Analysis of Bicycle Riding Comfort on Multiple Urban Road Surfaces <i>Authors: Pagano, G., Creazzo, F., Sousa Torres, G., Aprea, M.</i>
12.00-12.15	A preliminary comparative evaluation of bicycle tire damping estimation methods <i>Authors: Aprea, M., Russo, V., Stefanelli, A., Stendardo, A.</i>
12.15-12.30	NVH analysis of a urea-scr and sender unit system for truck vehicle <i>Authors: Carello, M., Berti Polato, D., Bolzoni, M.</i>
12.30-12.45	Role of Surface Free Energy in Dry and Wet Tyre-Road Friction on Smooth Surfaces <i>Authors: Caiazza, A., Romano, M., Mandragora, G., Lenzi, E., Suero, R.</i>
12.45-13.00	Experimental Investigation of the Influence of Surface Roughness on Tire-Road Friction <i>Authors: De Giuli, C., Tambasco, F., Sousa Torres, G., Suero, R., Barbaro, M.</i>
13.00-14.30	<i>Group Photo and Lunch Buffet (Room Aula Picuti)</i>
14.10-14.30	<i>IFTToMM Italy Meeting (Room 2)</i>
14.30	<i>Depart for a Guided Tour of Assisi</i>
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20.30	<i>Gala Dinner at the Delphina Palace Hotel</i>

Room AULA SENSI

Tribology for Life and Sustainability: From Biotribology to Green

Chairpersons: Logozzo S., Mattei L.

09.00-09.15	Regularization of the Coulomb Friction Force Model Using Sigmoid Functions <i>Authors: Flores, P.</i>
09.15-09.30	The role of viscoelasticity in polymer bearings <i>Authors : Santeramo, M., Putignano, C., Carbone, G.</i>
09.30-09.45	Improving Wear Quantification in Retrieved Acetabular Liners Using Independent 3D Scanning and Optical Profilometry <i>Authors: Logozzo, S., Mattei, L., Valigi, M.C.</i>
09.45-10.00	Influence of assembly on the performance of a tilting pad journal bearing and comparison with predictions <i>Authors: Betti, A., Ciulli, E., Forte, P., Nuti, M.</i>
10.00-10.15	Mechanical characterization of materials for non-conventional air lubricated lip seals <i>Authors: Goti, E., Mazza, L., Nohava, J., Trivella, A.</i>
10.15-10.30	Dynamics of an Artificial Finger Compression: a preliminary study. <i>Authors: Chinello, F., Olsen, M.</i>
10.30-10.45	Corrosive behavior of different materials in the framework of dual mobility hip implants <i>Authors: De Stefano, M., Mattei, L., Ruggiero, A.</i>
10.45-11.00	On the design of double acting externally pressurized gas bearings <i>Authors: Lentini, L., Colombo, F., Goti, E., Raviglione, R.</i>

11.00-11.30	Coffee Break (Room Aula Picuti)
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Diagnostics and Experimental Characterization of Machines

Chairpersons: Castellani F., Cocconcelli M.

11.30-11.45	Cavitation Detection in Industrial Boiler using Symmetrized Dot Pattern and Convolutional Neural Network <i>Authors: Spirito, M., Melluso, F., Cosenza, C., Niola, V.</i>
11.45-12.00	Fatigue Assessment of an Ultrasonic Plate Sonotrode for the Application in Needle-Punching of Nonwovens <i>Authors: Bolk, J., Corves, B.</i>
12.00-12.15	Unsupervised Ball Bearings Fault Diagnosis using Statistical Features and One-Class Support Vector Machine <i>Authors: Spirito, M., Melluso, F., Cosenza, C., Savino, S., Niola, V.</i>
12.15-12.30	Reliability-Oriented Multi-Level Shaft Crack Severity Classification Using Experimental Vibration Data with Group-Stratified Validation and POD Assessment <i>Authors: Melluso, F., Castejon, C., Gomez Garcia, M., Spirito, M., Niola, V.</i>
12.30-12.45	Early Detection of Wind Turbine Generator Faults Using a Semi-Supervised Transformer and SCADA Data <i>Authors: Puruncajas, B., Belcastro, F., Astolfi, D., Castellani, F.</i>
12.45-13.00	Design method to reduce whine noise in gear transmission based on meshing phase <i>Authors: Cristofori, G., Battarra, M., Mucchi, E., Dalpiaz, G.</i>

13.00-14.30	Group Photo and Lunch Buffet (Room Aula Picuti)
14.10-14.30	IFTToMM Italy Meeting (Room 2)
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20.30	Gala Dinner at the Delphina Palace Hotel

Friday 11th September

Day 3

CENTRO STUDI

Via Oberdan 123

Room 1

I4SDG: Engineering Solutions for Global Challenges

Chairpersons: Maffiodo D., Tonan M.

09.30-09.45	Toward Adaptive Grasping: A Flexible Joint with Embedded Stiffness Modulation Using Twisted String Actuation <i>Authors: Saeed, A., Dragusanu, M., Salviotti, G., Malvezzi, M.</i>
09.45-10.00	Three-Dimensional Hand Trajectory Estimation from MIMUs during a Hand-Tapping Task <i>Authors : Digo, E., De Vito, C., Gastaldi, L.</i>
10.00-10.15	Design parameters affecting the performance of galloping harvesters <i>Authors: Tonan, M., Pasetto, A., Doria, A.</i>
10.15-10.30	A hybrid electric-mechanical energy storage system to improve the health of the batteries in electric vehicles <i>Authors: Brancati, R., Petrillo, A., Pagano, S., Redi, L., Santini, S., Di Massa, G.</i>
10.30-10.45	Statistical identification of the global resistive coefficient in automatic machines <i>Authors: Battarra, M., Cristofori, G., Canini, G., Mucchi, E., Dalpiaz, G.</i>
10.45-11.00	Environmental Monitoring System for Rescue Operations in Artesian Wells <i>Authors: Maffiodo, D., Raparelli, T., Astuti, S.</i>
11.00-11.15	On-Board Observer and Digital Twin based System for Safety in Human-Robot Collaboration <i>Authors: Tiboni, M., Perani, C.</i>
11.15-11.30	

11.30-12.00	<i>Closing ceremony</i>
12.00-13.00	Brunch (Room Aula Picuti)

Room 2

Mechanism and Machine Design II

Chairpersons: Minto R., Lovato S.

09.30-09.45	Balancing Mechanism for Driving a Carousel Rotary Table <i>Authors: Bílkovský, A., Busek, M.</i>
09.45-10.00	Model Predictive Control for Marine Litter Collection Device <i>Authors: Lazzerini, G., Bucci, A., Liverani, G., Della Valle, A., Gelli, J., Topini, A., Ridolfi, A.</i>
10.00-10.15	Dynamic analysis of the IRT indexing rotary table <i>Authors: Ondrášek, J., Bílkovský, A.</i>
10.15-10.30	How many mechanisms can be designed? <i>Authors: Cocconcelli, M., Ceccarelli, M.</i>
10.30-10.45	A Genetic-Algorithm based Approach to Maximize Robot's Capabilities of Generating Forces <i>Authors: Manzardo, M., Galli, D., Gualtieri, L., Vidoni, R.</i>
10.45-11.00	Coordinated Multi-Arm Robotic System for Reducing Inter-Layer Drift in 3D Textile Sewing <i>Authors: Antoš, J., Soukal, M.</i>
11.00-11.15	A lightweight design formulation for combined design and command optimization of planar manipulators with flexible links <i>Authors: Gufler, V., Wehrle, E., Giusti, A.</i>
11.15-11.30	Experimental validation of piston kinematics in an unconventional slider-crank mechanism using vision systems <i>Authors: Brancati, R., Cosenza, C., Gimelli, A., Spirto, M., Savino, S., Tufano, F., Della Corte, G.</i>

11.30-12.00	<i>Closing ceremony</i>
12.00-13.00	Brunch (Room Aula Picuti)

Room AULA SENSI

Robotics and Collaborative Robotics

Chairpersons: Bottin M., Brückmann, N., Scoccia C.,

09.30-09.45	A 5-dimension Digital Twin framework for collision detection in open PLC-based collaborative robots <i>Authors: Boscariol, P., Sinico, T., Boschetti, G.</i>
09.45-10.00	Dynamic Assessment and Mitigation of the Impact of Collaborative Applications <i>Authors: Rosati, G., Callegari, M., Giberti, H., Bottin, M., Carnevale, M., Cesaro, A., Costa, D., Doria, A., Fabiocchi, D., Giulietti, N., Lettera, G., Neri, F., Scoccia, C., Zhou, D.</i>
10.00-10.15	Experimental evaluation of a human-mobile robot interaction algorithm using radar and lidar <i>Authors: Neri, F., Palmieri, G., Sambath, P., Zangl, H.</i>
10.15-10.30	Planar underactuated flexible robot: collision avoidance in pick and place operations <i>Authors: Giraldi, D., Tonan, M., Bottin, M., Doria, A., Rosati, G.</i>
10.30-10.45	Towards Robotic Assembly of Perfusion Tubing Systems: Task Clustering and an Order-Driven Skill-Based Cell Architecture <i>Authors: Terlizzi, S., Palmieri, G., Scalise, L.</i>
10.45-11.00	Concept of Macro-Micro Manipulator for Precise Large-Scale Surface Processing Using the Example of Inkjet Printing <i>Authors: Brückmann, N., Knobloch, T., Mirz, C., Schicks, F., Hüsing, M., Corves, B., Tanaka, T., Miura, S., Akatani, K., Kato, K., Takeda, Y.</i>
11.00-11.15	Residual Convolutional LSTM Networks to Enhance sEMG-Based Gesture Recognition <i>Authors: Calamai, R., Vangi, M., Bucci, A., Topini, A., Secciani, N.</i>
11.15-11.30	Design and validation of a tendon-driven continuum robot with a shape-memory alloy backbone <i>Authors: Quattrucci, L., Ulfi di Giovenale, A., Russo, M., Tata, M., Costanza, G.</i>
11.30-12.00	Closing ceremony
12.00-13.00	Brunch (Room Aula Picuti)