



15th YOUTH SYMPOSIUM
ON
EXPERIMENTAL MECHANICS

08 – 11 June 2016

Rimini
Italy

15th YSESM Conference Programme

	<i>08th June Wednesday Hotel Principe</i>	<i>09th June Thursday SGR Centro Congressi- Hall "Acqua"</i>	<i>10th June Friday SGR Centro Congressi- Hall "Acqua"</i>	<i>11th June Saturday SGR Centro Congressi - Hall "Acqua"</i>
8:00	<i>Arrival</i>	Registration	Registration	
8:30				
9:00		Opening		
9:30		1st Invited Lecture	2nd Invited Lecture	Keynote Lecture
10:00				Keynote Lecture
10:30		Team work organisation	Team work	Team work presentation
11:00		Coffee break	Coffee break	
11:30				<i>YSESM closure event</i>
12:00		Oral Session 1	Oral Session 3	<i>Departure</i>
12:30				
13:00		Lunch break	Lunch break	
13:30				
14:00		Team work	Team work	
14:30				
15:00		Oral Session 2 (AdriaHUB project)	Oral Session 4	
15:30			Oral Session 5 (TIME project)	
16:00		<i>Meet up at foyer of "Hotel Principe"</i>	Oral Session 6 (CARIM project)	
16:30			Coffee break	
17:00		History of University of Bologna	Poster Presentation	
17:30		History of YSESM Conferences	Signing bilateral agreement	
18:00		Oral Session 7 (Onda Solare project)		
18:30		AdriaHUB project closure		
19:00	<i>Welcome cocktail</i>	Kick off Onda Solare		
19:30				
20:00	<i>Night City Tour</i>	<i>Dinner, Music & Dance "Bounty"</i>	<i>Gala Dinner - "La Prua"</i>	

INVITED LECTURES

EXPERIMENTAL MECHANICS FOR LEARNING DESIGN PRINCIPLES AND METHODS

Prof. Alessandro Freddi



Emeritus Professor of the University of Bologna. He taught Experimental Stress Analysis and Systematic Methods of Machine Design. Professor at Bologna and Buenos Aires University in Industrial Design. He has published over 100 articles in the field of Experimental Mechanics, Mechanics of Materials and Mechanical Design and followed several dozen experimental thesis and design for Degrees and Diplomas. His interest has been always oriented to the application of experimental methods of solid mechanics to complex structural components and the solution of non-conventional problems of mechanical design. Founder of the YSESM - Youth Symposium on Experimental mechanics in collaboration with IMEKO - International Measurement Confederation

EXPERIMENTAL TECHNIQUES FOR TESTING AERONAUTICAL MATERIALS AND COMPONENTS

Prof. Carmine Pappalettere



Working life has always had as its reference point the University work is teaching both scientific research, basic and applied to local industrial needs. The activities carried out since the beginning of his career in 1975 led to a full-time commitment every day. He has published some 300 works in magazines and national and international conferences, including 80 of the magazine and international books. It 'been for 4 years EURASEM Chairman, European Association for Experimental Mechanics, an association that brings together all European researchers working in the field of Experimental Mechanics and coordinator of several research projects funded by local authorities, and national industries. He collaborates with numerous universities and research centers and national and international private companies.

KEY NOTE LECTURE

NUMERICAL STUDY OF PLASTICITY EFFECTS IN UNIFORM RESIDUAL STRESSES MEASUREMENT BY RING_CORE TECHNIQUE

Prof. Hossein Heidery



Young Assistan Professor at the Tafresh University of Iran. He is one of the most popular lecturers among the students and trainees and colleagues at the Tafresh University.

FOSTERING THE DIGITAL TRANSFORMATION O FTHE ITALIAN MANUFACTURING INDUSTRY

Prof. Giuseppe Padula



TEAM WORK

A long time ago in a galaxy far far away....

Participants will form teams (5-8 persons/team) during the symposium.

The teams have to propose innovative and new experimental methods to solve a practical problem.

Star Wars technological device will be assigned.

It will be necessary to prepare a presentation to convince a commission to fund your research.

An experimental part must be included.

Every mean to convince the commission will be accepted !!!



ORAL SESSION 1

Chairman: Prof. Giangiacomo Minak

- 1.1 **EXPERIMENTAL INVESTIGATION ON DELAMINATION IN NANOCOMPOSIT DRILLING**
Navid Zarif Karimi, Hossein Heidary, Giangiacomo Minak, Jalal Yousefi
- 1.2 **EXPERIMENTAL CHARACTERIZATION OF METAL-ELASTOMER BONDED JOINTS**
M. Ragni, D. Castagnetti, A. Spaggiari, F. Muccini, E. Dragoni, M. Milelli, S. Girlando, P. Borghi
- 1.3 **RESIDUAL STRESS EVALUATION IN FRICTION STIRE WELDING OF ALUMINUM PLATES BY MEASN OF ACOUSTIC EMISSION AND ULTRASONIC WAVES**
Seyedali Sadeghi, Mohamad Fotouhi, Navid Zarif Karimi, Mehdi Ahmadi Najafabadi, Giangiacomo Minak
- 1.4 **DEVELOPMENT OF FATIGUE DIAGRAMS OF SYNTHETIC YARNS APPLIED TO MOORING ROPES**
Felipe Vannucchi de Camargo, Carlos Eduardo Marcos Guilherme, Felipe Tempel Stumpf
- 1.5 **DAMAGE ANALYSIS FOR LOW VELOCITY IMPACTED COMPOSITE LAMINATES USING ACOUSITC EMISSION TECHNIQUE**
Jalal Yousefi, Ali Mahdian, Navid Zarif Karimi, Mehdi Ahmadi, Giangiacomo Minak
- 1.6 **EXPERIMENTAL TESTS AND FATIGUE STRENGTH ASSESSMENT OF STEEL WELDED JOINTS UNDER BENDING LOADING ACCORDING TO THE PEAK STRESS METHOD**
Daniele Rigon, Alberto Campagnolo, Giovanni Meneghetti
- 1.7 **COMPARISON OF VFM AND PARALLEL NETWORK MATERIAL MODEL FOR MATERIAL PARAMETER DETERMINATION**
Florian Dirisamer, Umut D. Çakmak, Imre Kallai, Zoltán Major

ORAL SESSION 2
(by ADRIA HUB project)

Chairman: Prof. Roberto Zigulic, Prof. Novak Nedic

- 2.1 ANALYSIS OF VIBRATION OF VERTICAL LATHE MACHINING CENTRE**
S. Blazevic, S. Pilicic, A. Skoblar, R. Zigulic, S. Braut
- 2.2 DESIGN OPTIMIZATION OF A TRADITIONAL CHAIR BY USING FEM**
Jelena Jovanović, Aleksandar Vujovic, Zdravko Krivokapic, Rade Grujicic
- 2.3 CONTROL IMPROVEMENT OF A DOUBLE ACTUATOR ELECTROHYDRAULIC SERVO SYSTEM FOR**
Sasa Prodanovic, Novak Nedic
- 2.4 INTEGRATION OF ADDITIVE MANUFACTURING AND VACUUM CASTING IN THE DEVELOPMENT OF RAPID PROTOTYPING OF COMPLEX PARTS - SAFETY GLASSES CASE STUDY**
Milan Sljivic, Ana Pavlovic, Cristiano Fragassa
- 2.5 APPLICATION OF NEW COMPOSITES IN WOOD INDUSTRY USING ADDITIVE MANUFACTURING TECHNOLOGIES**
Milan Sljivic, Nenad Grujovic, Fatima Zivic, Ana Pavlovic, Cristiano Fragassa
- 2.6 DESIGN AND PROCESSING OF WOODEN OBJECTS ON LABORATORY CNC MACHINE**
Marko Milojkovic, Sasa Nikoli, Stanisa Peric, Marko Zivkovic
- 2.7 WOOD PROCESSING INDUSTRY OF BOSNIA AND HERZEGOVINA**
Aleksandar Ljuboja, Jagoda Dedic

ORAL SESSION 3

Chairman: Prof. Alessandro Freddi

3.1 SIGNAL-TO-NOISE RATIO OPTIMIZATION FOR LOW-POWER LASER GENERATED ULTRASOUND

Michelangelo Gulino, Dario Vangi, Antonio Virga

3.2 FAILURE ANALYSIS OF BRAIDED COMPOSITE STRUCTURES IN TORSIONAL LOADING

Emil Pitz, Matei-Constantin Miron, Zoltán Major

3.3 IMAGE ACQUISITION FOR DETECTION DAMAGE OF CONVEYOR BELTS

Paweł Maślak

3.4 TIME LAPSE TOMOGRAPHY OF FRACTURE PROGRESS IN SILICATE-BASED COMPOSITE SUBJECTED TO THE LOADING A COMBINATION WITH ACOUSTIC EMISSION SCANNING

Ivana Kumpová, Tomáš Trčka, Daniel Kytýř, Michal Vopálenský, Tomáš Fíla, Daniel Vavřík

3.5 3D PRINTING OF THERMOPLASTIC ELASTOMERES FOR TECHNICAL APPLICATIONS

Sebastian Lammermann, Markus Kaltenbrunner, Zoltan Major

3.6 CHARACTERISATION AND TESTING OF COMPOSITE MATERIALS AND COMPONENTS FOR DYNCOMP CYCLOOPTER VTOL AIRCRAFT

M.Lackner , T.Distlbacher, Z. Major, M.Reiter

ACOUSTIC EMISSION MONITORING OF THIN PLY HYBRID COMPOSITES UNDER REPEATED QUASI-

3.7 STATIC TENSILE LOADING

Mohamad Fotouhia, Putu Suwartaa, Meisam Jalalvanda, Gergely Czéla,b, Michael R. Wisnoma

ORAL SESSION 4

Chairman: Prof. Carmine Pappalettere

4.1 A COMPARATIVE ANALYSIS OF A BOOM OF THE UNDERGROUND LOADER

Paulina Dzialak

4.2 SEMI-AUTOMATED ASSESSMENT OF MICROMECHANICAL PROPERTIES OF THE METAL FOAMS ON THE CELL-WALL LEVEL

Jan Šleichrt, Nela Fenclová, Tomáš Doktor, Daniel Kytýř, Ondřej Jiroušek

4.3 IMPACT TESTING OF ORDNANCE GELATINE UNDER MODERATE STRAIN RATE CONDITIONS

Tomáš Doktor, Petr Zlámal, Marcel Adorna, Tomáš Fíla, Daniel Kytýř

APPLICATION OF QUALITY TOOLS FOR IMPROVING THE MAINTAINABILITY OF ULTRASOUNDS

4.4 CLEANING PLANTS

Martin Ippoliti, Cristiano Fragassa, Lorenzo Casesa

4.5 INVESTIGATION ON STABILITY OF TEFLON UNDER EXTREME CONDITIONS: ANALYSIS OF SURFACE DEGRADATION

Giorgio Zattini, Loris Giorgini, Cristiano Fragassa

ORAL SESSION 5

(by TIME project)

Chairman: Prof. Beatrice Pulvirenti

5.1 TIME - INTEGRATED TECHNOLOGY FOR ELECTRIC MOBILITY. RESEARCH PROJECT OUTLINE

Oliviero Bocchi

5.2 TRACTION AND ENERGETIC CONTROL SYSTEM OF AN ELECTRIC POWETRAIN

Marco Bertoldi

MECHANICAL INTEGRATION OF AN ELECTRIC POWERTRAIN IN THE CHASSIS OF A USED THERMAL

5.3 CAR

Luca Raimondi

ORAL SESSION 6

(by CARIM project)

Chairman: Prof. Beatrice Pulvirenti

6.1 AUTOMOTIVE CARBON WHEEL

Giangiacomo Minak, Lorenzo Donati, Loris Giorgini, Laura Mazzocchetti, Enrico Troiani, Raffaella Di Sante

ORAL SESSION 7

(by Onda Solare project)

Chairman: Prof. Giangiacomo Minak

7.1 ONDA SOLARE: FROM THE CONCEPT TO THE SOLAR VEHICLE IN 24 MONTHS

Cristiano Fragassa

7.2 SUSTAINABILITY AND SOLAR CAR CHALLENGES FOR A BETTER WORLD

Stefano Maglio

7.3 DESIGN AND DEVELOPMENT OF THE SOLAR MODULE FOR THE ONDA SOLARE PROJECT

Alberto Lucci

7.4 THE SOLAR CAR: STUDY OF THE MECHANISMS OF THE FRONT SUSPENSIONS

Matteo Carpanelli

7.5 STRUCTURAL DESIGN OF SOLAR CAR WITH CARBON FIBER REINFORCED PLASTIC

Alex Leardini

7.6 CFD ANALYSIS OF DIFFERENT SOLAR CAR CONCEPTS

Beatrice Pulvirenti, Marko Lukovic and Alex Palmieri