ICCS16 - 16th International Conference on Composite Structures

University of Porto, Faculty of Engineering (FEUP)
June 28-30, 2011

FINAL Program

Sponsored by:
University of Porto, Faculty of Engineering
INEGI
IDMEC
Office of Naval Research
(Solid Mechanics Programme, Dr. Yapa Rajapakse as the Program Manager)

Pre-Conference Course

26 June 2011	**FEM COURSE (Hotel Axis, Porto)**
08h00	Registration desk open
09h00	Finite element course by Professor J. N. Reddy
10h30	Coffee-Break
11h00	Finite element course by Professor J. N. Reddy
13h00	Lunch
14h00	Finite element course by Professor J. N. Reddy
16h00	Coffee-Break
16h30	Finite element course by Professor J. N. Reddy
18h00	End First day of FEM course
20h00	Dinner (FEM participants only)

27 June 2011	**FEM COURSE (Hotel Axis, Porto)**
08h00	Registration desk open
09h00	Finite element course by Professor J. N. Reddy
10h30	Coffee-Break
11h00	Finite element course by Professor J. N. Reddy
13h00	Lunch
14h00	Finite element course by Professor J. N. Reddy
16h00	Coffee-Break
16h30	Finite element course by Professor J. N. Reddy
18h00	End, FEM course

27 June 2011	**ICCS16: Pre-registration (FEUP, Porto)**
14h00-18h00	Registration

Short Version of the ICCS16 Program

28 June 2011 - **FIRST DAY - ICCS16**

07h30	Registration desk open
08h30	**Opening Ceremony (AUDITORIUM)**
	Welcome Address by Professor Sebastião Feyo de Azevedo
	Dean of the Faculty of Engineering, University of Porto (FEUP, Portugal)
09h00	**Plenary lectures (AUDITORIUM) - Chair: António Torres Marques (FEUP)**
09h00	Plenary lecture 1: **Yapa Rajapakse** (Office of Naval Research, USA) ONR Research on Marine Composite Structures
09h30	Plenary lecture 2: **J. N. Reddy** (Texas A&M, USA) MODELLING OF COMPOSITE AND FUNCTIONALLY GRADED STRUCTURES: THEORIES AND COMPUTATIONAL MODELS
10h00	Plenary lecture 3: **Anthony Waas** (University of Michigan, USA) Computational Modeling of Damage Propagation in Fiber Reinforced Laminates
10h30	**Coffee-Break**
11h00	**Parallel Sessions**
12h40	**Lunch**
14h00	**Plenary lectures (AUDITORIUM) - Chair: Anthony Waas (Univ. of Michigan, USA)**
14h00	Plenary lecture 4: **Erasmo Carrera** (Politecnico di Torino, Italy) Computational Models of Laminated Structures based on Unified Formulation
14h30	Plenary lecture 5: **Riadh Al-Mahaidi** (Swinburne University of Technology, Australia) Innovations in Strengthening of Concrete Bridges using FRP Composites: The Australian Experience
15h00	Plenary lecture 6: **Zafer Gurdal** (TU Delft, Netherlands)
15h30	Plenary lecture 7: **Ole Thomsen and Kasper Koops Kratmann** (Aalborg University, Fiberline Composites A/S, Denmark) Compressive failure of pultruded unidirectional carbon fibre composites - Experimental characterisation of CONTROLLING parameters
16h00	**Coffee-Break**
16h30	**Parallel Sessions**
19h00	**Poster Session and Reception at FEUP, near the Auditorium**

07h30	Registration desk open
08h00	**Plenary lectures (AUDITORIUM) - Chair: Erasmo Carrera** (Politecnico di Torino, Italy)
08h00	Plenary lecture 8: **Arun Shukla** (Univ. Rhode Island, USA) Blast Mitigation: Experimental Evaluation of Novel Sandwich Composite Structures
08h30	Plenary lecture 9: **Shuki Frostig** (Technion, Israel) Thermo-Mechanical Non-Linear Response of Sandwich Panels with a Compliant Core - High-Order Approach
09h00	Plenary lecture 10: **Richard Degenhardt** (DLR, Germany) Future structural stability design for composite space and airframe structures
09h30	Plenary lecture 11: **Mark Robinson** (Univ. Newcastle, UK), TRANSPORT OF DE-LIGHT:THE DESIGN AND PROTOYPING OF A LIGHTWEIGHT CRASHWORTHY RAIL VEHICLE DRIVER'S CAB
10h00	Plenary lecture 12: **Mohamad Qatu** (Mississipi State Univ., USA) MECHANICS OF LAMINATED COMPOSITE THICK STRUCTURES WITH DEEP CURVATURE
10h30	**Coffee-Break**
11h00	**Parallel Sessions**
12h40	**Lunch**
14h00	**Plenary lectures (AUDITORIUM) - Chair: Christian Mittelstedt (Airbus, Germany)**
14h00	Plenary lecture 13: **Pedro Camanho** (FEUP, Portugal) Simulation of inelastic deformation and fracture of composites at different length scales
14h30	Plenary lecture 14: **Simon Wang** (Loughborough Univ., UK) A Theory of One Dimensional Fracture
15h00	Plenary lecture 15: **Gerhard Ziegmann** (Clausthal Univ., Germany) Processing Concepts for Series Production of Composites
15h30	Plenary lecture 16: **Rui Moreira** (Aveiro Univ., Portugal) PASSIVE VIBRATION DAMPING TREATMENTS FOR LIGHT STRUCTURES: SOLUTIONS, DESIGN.OPTIMIZATION AND TRENDS.
16h00	**Coffee-Break**
16h30	**Parallel Sessions**
19h00	**Buses leave FEUP to Banquet**
19h30	**ICCS16 Banquet at CAVES FERREIRA**
23h00	**Buses leave Banquet to Hotels**

30 June 2011 - **Third and Last DAY - ICCS16**

08h00	Registration desk open
08h30	**Parallel Sessions**
10h30	**Coffee-Break**
11h00	**Parallel Sessions**
12h40	**Lunch**
14h00	**Parallel Sessions**
16h00	**Coffee-Break**
16h30	**Parallel Sessions**
19h00	**CONFERENCE CLOSURE**

Detailed ICCS16 Program - Parallel Sessions

1. ONR Session on Composite and Sandwich Structures

Session Organizers: Yapa Rajapakse, Serge Abrate

(yapa.rajapakse@navy.mil, abrate@engr.siu.edu)

Room: AUDITORIUM

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 1.1 - Chairs: Yapa Rajapakse, Serge Abrate

11h00 (Abstract #743)
Kazi A Imran, Mohammad K Hossain, Mahesh V Hosur and Shaik Jeelani
SEAWATER EFFECT ON MECHANICAL PROPERTIES OF CONVENTIONAL AND NANOPHASED CARBON/EPOXY COMPOSITES

11h20 (Abstract #751)
R. Massabo and A. Cavicchi
DAMAGE PROGRESSION IN LAMINATED AND SANDWICH STRUCTURES SUBJECTED TO DYNAMIC PULSE LOADS

11h40 (Abstract #536)
H.N. Krishna Teja Palleti, O. T. Thomsen, S. T Taher and J. M. Dulieu-Barton
NONLINEAR THERMO-MECHANICAL FINITE ELEMENT ANALYSIS OF POLYMER FOAM CORED SANDWICH STRUCTURES INCLUDING GEOMETRICAL AND MATERIAL NONLINEARITY

12h00 (Abstract #734)
Serge Abrate
WAVE PROPAGATION IN METAMATERIALS

12h20 (Abstract # 20)
H. Arora, P. Hooper and J. P. Dear
UNDERWATER BLAST RESISTANCE OF COMPOSITES AND SANDWICH STRUCTURES FOR MARINE APPLICATIONS

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 1.2 - Chairs: Yapa Rajapakse, Serge Abrate

16h30 (Abstract #735)
J. Obradovic, S. Boria, G. Belingardi
LIGHTWEIGHT DESIGN AND CRASH ANALYSIS OF COMPOSITE FRONTAL IMPACT ENERGY ABSORBING STRUCTURES

16h50 (Abstract #736)
R. Panciroli, S. Abrate, G. Minak and A. Zucchelli
HYDROELASTICITY EFFECT IN WATER-ENTRY PROBLEMS: COMPARISON BETWEEN EXPERIMENTAL AND SPH RESULTS

17h10 (Abstract #733)
Serge Abrate
SHOCK WAVE INTERACTIONS WITH FLUID-FILLED SHELLS

19h00 (Poster Session and Reception at FEUP)

2. Damage in Composite Structures

Session Organizers: Branca Oliveira

(branca@ufrgs.br)

Room: B023

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 2.1 - Chairs: Branca Oliveira, Ralf Cuntze

11h00 (Abstract #349)
I. Smojver and D. Ivancevic
HYBRID APPROACH IN BIRD STRIKE DAMAGE PREDICTION ON AERONAUTICAL COMPOSITE STRUCTURES

11h20 (Abstract #119)
R. Cuntze
APPLICATION OF CUNTZE'S FAILURE MODE CONCEPT IN STATIC AND CYCLIC DESIGN VERIFICATIONS OF UD FRP LAMINATES

11h40 (Abstract #120)
R. Cuntze
MAPPING OF TRANSVERSELY-ISOTROPIC TEST DATA BY FMC-BASED FAILURE CONDITIONS - TEST DATA FROM WWFE

12h00 (Abstract #165)
Roberto C. Pavan, Branca F. Oliveira and Guillermo J. Creus
BUCKLING ANALYSES OF VISCOELASTIC STRUCTURES CONSIDERING AGEING AND DAMAGE EFFECTS

12h20 (Abstract #690)
Julio Cesar Pinheiro Pires, Branca Freitas de Oliveira
FAILURE ANALYSIS OF A HORIZONTAL AXIS WIND TURBINE BLADE MADE OF COMPOSITE MATERIAL

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 2.2 - Chairs: Sérgio Almeida, Valentina Lopresto

16h30 (Abstract #206)
Mariano A. Arbelo, Mauricio V. Donadon, Sergio F. M. de Almeida
NUMERICAL PREDICTION OF THE RESIDUAL STRENGTH OF STIFFENED COMPOSITE PANELS SUBJECTED TO BIRD STRIKE LOADING

16h50 (Abstract #346)
Marcelo Leite Ribeiro, Volnei Tita and Dirk Vandepitte
DAMAGE MODEL PROPOSAL FOR COMPOSITE LAMINATES

17h10 (Abstract #256)
Murat Gunel and Altan Kayran
COMPARATIVE STUDY OF LINEAR AND NON-LINEAR PROGRESSIVE FAILURE ANALYSIS OF COMPOSITE AEROSPACE STRUCTURES

17h30 (Abstract #283)
Oliver J. Myers, George Currie, Jonathan Rudd and Dustin Spayde
DAMAGE DETECTION OF UNIDIRECTIONAL CARBON FIBER REINFORCED LAMINATES WITH EMBEDDED MAGNETOSTRICTIVE PARTICULATES: A PRELIMINARY STUDY

17h50 (Abstract #332)
Claudio Leone, Valentina Lopresto, Ilaria Papa, Giancarlo Caprino
TRIANGULATION METHOD AS A VALID TOOL TO LOCATE THE DAMAGE IN UNIDIRECTIONAL CFRP LAMINATES

18h10 (Abstract # 33)
Werner Hufenbach, Bernd Gruber, Martin Lepper, Robert Gottwald and Bingquan Zhou
AN ANALYTICAL METHOD FOR THE DETERMINATION OF STRESS CONCENTRATIONS IN NOTCHED TEXTILE REINFORCED GF/PP-COMPOSITES WITH FINITE OUTER BOUNDARY

18h30 (Abstract #179)
M.S. Goodarzi and N. Hassan Shahi Raviz
Effects of progressive damage of adhesive and composite patch on fracture of single-side repaired panels under monotonic loading

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 2.3 - Chairs: Branca Oliveira

11h00 (Abstract #715)
Aaron Siddens and Javid Bayandor
A SOFT IMPACT DAMAGE PREDICTIVE METHODOLOGY FOR HYBRID/COMPOSITE PROPULSION SYSTEMS

11h20 (Abstract #390)
Ivo Cerny
FATIGUE OF SELECTED GRP COMPOSITE COMPONENTS AND JOINTS WITH DAMAGE EVALUATION

11h40 (Abstract #401)
Emanoil Linul, Liviu Marsavina and Anghel Cernescu
ASSESSMENT OF SANDWICH BEAMS USING FAILURE-MODE MAPS

12h00 (Abstract #423)
Aldebert Gregory, Lachaud Frederic, Huet Jacques, Piquet Robert
PROGRESSIVE DAMAGE OF WOVEN COMPOSITE UNDER BEARING STRENGTH

12h20 (Abstract #429)
Chiachio. M, Chiachio. J and G. Rus
RELIABILITY ASSESSMENT OF COMPLEX MATERIALS UNDER MECHANICAL DEGRADATION

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 2.4 - Chairs: Volnei Tita, Ivo Cerny

16h30 (Abstract #462)
Andre C. Vieira, Rui M. Guedes and Volnei Tita
CONSTITUTIVE MODELS FOR BIODEGRADABLE THERMOPLASTIC ROPES FOR LIGAMENT REPAIR

16h50 (Abstract #468)
R. F. Teixeira, S. T. Pinho, P. Robinson
Translaminar fracture toughness of CFRP: from the toughness of individual plies to the toughness of laminates

17h10 (Abstract #521)
A. Muc and A. Stawiarski
IDENTIFICATION OF DAMAGES IN COMPOSITE MULTILAYERED CYLINDRICAL PANELS WITH DELAMINATIONS

17h30 (Abstract #150)
Sun Guo, Wang Yuxin and Cai Xianhui
LOCAL DAMAGE IDENTIFICATION IN COMPOSITE LAMINATES BY DAMAGE INDICATOR AND INVERSE METHOD

17h50 (Abstract #769)
J.-C Grandidier, P. Casari and C. Jochum
A COMPRESSIVE FAILURE CRITERION FOR LONG FIBRE LAMINATES BASED ON LAMINATE THICKNESS EFFECT AND STACKING SEQUENCE

18h10 (Abstract #718)
M.Mirzaei , H.Akbarshahi , M.Shakeri and M.Sadighi
THEORETICAL MODEL FOR COLLAPSING OF HYBRID CIRCULAR TUBES UNDER AXIAL LOAD

18h30 (Abstract #329)
Fethma M. Nor, Ho Yong Lee and Joong Yeon Lim
FINITE ELEMENT ANALYSIS ON DAMAGE MECHANISM OF CARBON FIBER REINFORCED PLASTIC COMPOSITE LAMINATE USING COHESIVE ZONE MODEL

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

3. Design and application of composite structure

Session Organizers: Bruno Castanie

(bruno.castanie@isae.fr)

Room: B024

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 3.1 - Chairs: Bruno Castanié, Magnus Burman

11h00 (Abstract # 16)
Robert Sekula
ADVANCED SIMULATION AND TESTING TECHNIQUES IN MANUFACTURING OF
THERMOSETTING COMPOSITES FOR ELECTRICAL APPLICATIONS

11h20 (Abstract # 39)
M. Burman and J. Kuttenkeuler
COMPARATIVE LIFE CYCLE ASSESSMENT (LCA) OF THE HULL OF A HIGH SPEED CRAFT

11h40 (Abstract # 50)
Louis Adam, Christophe Bouvet, Bruno Castanie, Alain Daidie, and Elodie Bonhomme
EXPERIMENTAL AND NUMERICAL ANALYSIS OF PULLTHROUGH OF FASTENERS IN LAMINATES

12h00 (Abstract # 98)
Soraya Catche, Robert Piquet, Frederic Lachaud, Bruno Castanie and Audrez Benaben
RELATION BETWEEN SURFACE ROUGHNESS INDICATORS AND
STATIC STRENGTH OF DRILLED LAMINATES

12h20 (Abstract #438)
Suleyman Deveci, Mualla Oner, Zafer Gemici
EFFECT OF PROCESSING PARAMETERS AND COMPOSITE STRUCTURE ON GAS TRANSPORT
PROPERTIES OF MULTILAYERED COMPOSITE PLASTIC PIPES

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 3.2 - Chairs: Bosko Rasuo, Robert Sekula

16h30 (Abstract #459)
Bosko Rasuo, Mirko Dinulovic, Aleksandar Veg and Aleksandar Grbovic
HARMONIZATION OF NEW WIND TURBINE ROTOR BLADES DEVELOPMENT PROCESS

16h50 (Abstract #483)
Michael R. Motley and Yin L. Young
INFLUENCE OF UNCERTAINTIES ON THE RESPONSE AND RELIABILITY
OF SELF-ADAPTIVE COMPOSITE ROTORS

17h10 (Abstract #607)
Mark Capellaro
COMPOSITE COUPLED WIND TURBINE BLADE DESIGN

17h30 (Abstract #511)
M. Filipe D. Fernandes, Miguel Figueiredo
EXPERIMENTAL DEVELOPMENT OF A FULL STRENGTH SANDWICH AND
ITS CONNECTION WITH A STIFF TUBULAR PROFILE

17h50 (Abstract #553)
Philippe Martiny, Veronique Carlier, Andre Bertin and Frederic Lani
MINIMAL EXPERIMENTAL CHARACTERIZATION FOR ACCURATE
NUMERICAL PREDICTION OF THE CURE-INDUCED DEFORMATIONS IN COMPOSITES

18h10 (Abstract #514)
Kentaro Sakoda and Asami Nakai
Mechanical behavior in hybrid textile composite materials

18h30 (Abstract #505)
A.M.A.J.TEIXEIRA, M.S.PFEIL, R.C.BATTISTA
EXPERIMENTAL TESTS ON GFRP TRUSSED BEAM WITH STEEL JOINTS
FOR DISMOUNTABLE BRIDGE

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 3.3 - Chairs: Julio Davalos

11h00 (Abstract #605)
A.Klimpel, M. Burda, A.Rzeznikiewicz, D. Janicki, A. Lisiecki
REGENERATION OF AIRCRAFT TURBINE ENGINE PARTS BY
MODERN TECHNIQUES OF SURFACING AND ALLOYING

11h20 (Abstract #604)
Alberto Lopez-Arraiza, Raul Alberdi, Jose Santos and German Castillo
HIGH PERFORMANCE COMPOSITE NOZZLE FOR THE IMPROVEMENT
OF COOLING IN GRINDING MACHINE TOOLS

11h40 (Abstract #696)
Julio F. Davalos, Ever J. Barbero, Eduardo M. Sosa, Javier Martinez, Wade Huebsch, Ken Means, Larry Banta and Gregory Thompson
DEVELOPMENT OF INFLATABLE SYSTEMS FOR TUNNEL PROTECTION

12h00 (Abstract #757)
Maria De Stefano, Marco Gherlone, Massimiliano Mattone, Marco Di Sciuva and Keith Worden
OPTIMUM SENSOR PLACEMENT FOR IMPACT LOCATION ON MULTILAYERED
COMPOSITE STRUCTURES USING NEURAL NETWORKS

12h20 (Abstract #627)
Su Ju, Dazhi Jiang, Jiayu Xiao and R A. Shenoi
LOCAL BUCKLING OF AN ULTRA-LIGHTWEIGHT COMPOSITE TRUSSES UNDER BENDING

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 3.4 - Chairs: Julio Davalos, Salvatore Russo

16h30 (Abstract #781)
Salvatore Russo
EXPERIMENTAL BEHAVIOUR OF VERY LARGE PFRP STRUCTURE SUBJECTED TO FREE VIBRATION

16h50 (Abstract #703)
Carlos A. Cimini Jr., Jose Daniel D. Melo, Antonio M. Medeiros, Estevam B. Las Casas and Edson A. Ferreira
EXPERIMENTAL FLEXURE CREEP EVALUATION FOR GFRP COMPOSITE ORTHODONTIC ARCHWIRES

17h10 (Abstract #636)
Pedro M. Duarte, Manuel A. Fonte, Virginia I. Infante and Luis M. Simões
EXPERIMENTAL AND COMPUTACIONAL ANALYSIS OF A COMPOSITE CHASSIS

17h30 (Abstract #746)
Giovanni Belingardi, Ermias Gebrekidan Koricho
DEVELOPING COMPOSITE ENGINE SUPPORT SUB-FRAME TO ACHIEVE LIGHTWEIGHT VEHICLES

17h50 (Abstract #765)
Antoine Schenker, Sebastien Vidal, Laurent Risse and Stephane Mahdi
AIRCRAFT COMPOSITE STRUCTURES - FROM IN-DEPTH TESTING TO PHYSICAL MODELLING

18h10 (Abstract #319)
Yoon Ji Yim, Hyun Chul Lee, Yong Sik Chung, Chul Hwan Moon, Seung Soon Im, and Seong Su Kim
DEVELOPMENT OF THE COMPOSITE STRUT TOP PLATE FOR AUTOMOBILES

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

4. Computational Methods for Composite Structures

Session Organizers: Carla Roque, Metin Aydogdu, Oliver Myers

(croque@fe.up.pt,metina@trakya.edu.tr,myers@me.msstate.edu)

Room: B025

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 4.1 - Chairs: Carla Roque, Cécile Chambon

11h00 **KEYNOTE**: (# 19) **J. P. Dear, H. Arora, P. Hooper and I. Palmer**
BLAST AND OTHER HIGH RATE LOADING TO FAILURE OF COMPOSITE SANDWICH STRUCTURES

11h20 (Abstract # 95)
Bruno Faria, Nuno Silvestre, Jose N. C. Lopes
Strength and Stiffness of Carbon Nanotubes Under Combined Axial Force and Torsion via Molecular Dynamics Simulations

11h40 (Abstract # 63)
Michael Winkler and Gerald Kress
INFLUENCE OF CORRUGATION GEOMETRY ON THE SUBSTITUTE STIFFNESS MATRIX OF CORRUGATED LAMINATES

12h00 (Abstract # 89)
Valery V. Vasiliev, Vyacheslav A. Barynin, Alexander F. Razin
ANISOGRID COMPOSITE LATTICE STRUCTURES -DEVELOPMENT AND AEROSPACE APPLICATIONS

12h20 (Abstract # 71)
C. Chambon and S.Diebels
A NUMERICAL HOMOGENISATION METHOD FOR HYBRID SANDWICH COMPOSITES

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 4.2 - Chairs: Metin Aydogdu, Jorge Belinha

16h30 (Abstract #135)
Paul K. Collins and Bernard F. Rolfe
MODELLING THICK CARBON FIBRE COMPOSITES SECTIONS USING SHELL ELEMENTS

16h50 (Abstract #671)
A. Mlyniec, T. Uhl
THE MODELLING OF SHORT FIBRE REINFORCED POLYMER COMPOSITE AGEING : PREDICTION OF THE COMPONENT LIFETIME

17h10 (Abstract #187)
Efstathios E. Theotokoglou and George A. Balokas
STRUCTURAL ANALYSIS AND MATERIALS SELECTION IN CROSSSECTION OF COMPOSITE WIND TURBINE BLADE

17h30 (Abstract #226)
J. Majak, M. Pohlak, M. Eerme, J.Kers, T.Velsker
HAAR WAVELET BASED DISCRETIZATION TECHNIQUE FOR ANALYSIS AND DESIGN OF COMPOSITE STRUCTURES

17h50 (Abstract #297)
Hosseini S.M., Sladek J. and Sladek V.
THERMOELASTIC WAVE PROPAGATION IN FUNCTIONALLY GRADED MATERIALS USING MESHLESS LOCAL PETROV-GALERKIN (MLPG) METHOD

18h10 (Abstract #443)
S.T. Pinho, N.V. De Carvalho and P. Robinson
COMPRESSIVE FAILURE OF 2D WOVEN COMPOSITES: NUMERICAL AND ANALYTICAL MODELLING

18h30 (Abstract #330)
Hyun-Jun Kim, Ho-Joong Jung, Seung-Hwan Chang
THE SIMULATION OF HEALING PROCESS OF FRACTURED LONG BONES APPLIED BY COMPOSITE BONE PLATES BASED ON A MECHANO-REGULATION THEORY

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 4.3 - Chairs: Oliver Myers, Reza Ovesy

11h00 (Abstract #186)
J. Fazilati, H. R. Ovesy
Finite strip dynamic instability analysis of perforated cylindrical shell panels

11h20 (Abstract #375)
Jakob Gager, Heinz E. Pettermann
FEM HOMOGENIZATION OF TEXTILE COMPOSITES BASED ON SHELL ELEMENT DISCRETIZATION

11h40 (Abstract #425)
Hamed Kalhori, S. Marzieh Hoseini and Alireza Shooshtari
NONLINEAR NATURAL FREQUENCY OF A VISCOELASTIC MICROCANTILEVER BEAM WITH A PIEZOELECTRIC LAYER

12h00 (Abstract #451)
S.M.R. Khalili, O. Rahmani and K. Malekzadeh Fard
HIGH-ORDER IMPACT ANALYSIS OF CYLINDRICAL COMPOSITE SANDWICH SHELLS WITH TRANSVERSELY COMPLIANT CORE UNDER LOW-VELOCITIES

12h20 (Abstract #436)
Adam C. Biskner, Jeffry S. Welsh, Richard M. Christensen, Emmett E. Nelson, and Andrew D. Williams
COMPARISON OF ANALYTICALLY AND EXPERIMENTALLY GENERATED BIAXIAL STRENGTHENING RESULTS

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 4.4 - Chairs: Marco di Sciuva, Mohamad Qatu

16h30 (Abstract #478)
Yong-Bin Park, In-Hun Kim, Ik-Hyeon Choi, Jin-Hwe Kweon and Jin-Ho Choi
MECHANICAL BEHAVIOR OF Z-PINNED COMPOSITE LAMINATES USING CARBON FIBERS

16h50 (Abstract # 756)
M. Gherlone, L. Iurlaro and M. Di Sciuva
ANALYSIS OF COMPOSITE LAMINATED AND SANDWICH PLATES USING AN UNSYMMETRIC RADIAL BASIS FUNCTIONS COLLOCATION METHOD: A NOVEL ALGORITHM FOR CHOOSING THE SHAPE PARAMETER

17h10 (Abstract #502)
Hamed Akhavan and Pedro Ribeiro
NATURAL MODES OF VIBRATION OF VARIABLE STIFFNESS COMPOSITE LAMINATES BY THIRD ORDER SHEAR DEFORMATION THEORY

17h30 (Abstract #705)
Wenchao Wang, Mohamad S Qatu
VIBRATIONS OF COMPOSITE HOLLOW CYLINDERS

17h50 (Abstract # 60)
A.P.S. Selvadurai and H. Nikopour
TRANSVERSE ELASTICITY PROPERTIES OF A UNIDIRECTIONALLY REINFORCED COMPOSITE WITH A RANDOM FIBRE ARRANGEMENT

18h10 (Abstract # 783)
S. Fawzia
Stress distribution Analysis of CFRP strengthened steel hollow section

18h30 (Abstract # 85)
Dinesh Kumar and S. B. Singh
LOAD INTERACTION CURVES AND POSTBUCKLING RESPONSE OF COMPOSITE LAMINATE WITH CUTOUT UNDER COMBINED IN-PLANE LOADING

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

5. Robust Design Optimization of Composite Structures

Session Organizers: Carlos Antonio

(cantonio@fe.up.pt)

Room: B024

Date: 30 June 2011

Session 5.1 - Chairs: Carlos Antonio/ Cristian Barbarosie

08h40 (Abstract #702)
Samuele De Guido, H.J.M. Geijselaers and Andre de Boer
CONTINUOUS-DISCRETE VARIABLE OPTIMIZATION ON COMPOSITES
USING KRIGING SURROGATE MODEL

09h00 (Abstract #583)
Carlos C. Antonio
CONTROL OF UNCERTAINTIES IN COMPOSITE STRUCTURES WITH NON-LINEAR BEHAVIOUR

09h20 (Abstract #153)
Meelis Pohlak, Juri Majak, Kaarel Paasuke, Martin Eerme, Risto Koiv
MULTI-OBJECTIVE TOPOLOGY OPTIMIZATION OF WEIGHT CRITICAL STRUCTURES

09h40 (Abstract #154)
T. A. Sebaey, C.S. Lopes, N. Blanco and J. Costa
Ant Colony Optimization for dispersed laminated
composite panels under biaxial loading

10h00 (Abstract #698)
A. Piquer, D. Hernandez-Figueirido, A. Hospitaler and , JM. Portoles
MULTIOBJECTIVE OPTIMIZATION OF STEEL CONCRETE FILLED-TUBE
COLUMNS BASED ON SIMULATED ANNEALING: FUNCTIONAL
, ECONOMIC AND ENVIRONMENTAL OBJECTIVES

10h30 (Coffee-Break)

Session 5.2 - Chairs: Carlos Antonio/ Anca-Maria Toader

11h00 (Abstract #370)
B. Desmorat, A. Jibawy and A. Vincenti
STRUCTURAL RIGIDITY OPTIMIZATION OF THIN LAMINATED SHELLS

11h20 (Abstract #430)
Cristian Barbarosie and Anca-Maria Toader
SENSITIVITY OF THE HOMOGENIZED COEFFICIENTS WITH RESPECT
TO VARIATIONS OF THE MICROGEOMETRY

11h40 (Abstract #582)
Carlos C. Antonio, Luisa N. Hoffbauer
ASSESSMENT MEASURES IN UNCERTAINTY PROPAGATION
ANALYSIS APPLIED TO COMPOSITE STRUCTURES

12h00 (Abstract #540)
Foad Nazari, Hamed Kalhori, Neda Kavyani Malayeri,
S. Marzieh Hoseini and Mohammad A. Rahbarikahjogh
CRACK DETECTION IN FUNCTIONALLY GRADED BEAMS
USING ARTIFICIAL NEURAL NETWORK AND GENETIC ALGORITHM

12h20 (Abstract # 31)
Alvajyan Sh. I., Farmanyan A. J., Hayrapetyan G. S., Margaryan L. M., Sargsyan S. H.
Mathematical models of single- and multi-layered micropolar
elastic anisotropic thin bars and plates

12h40 (Lunch)

Session 5.3 - Chairs: Cristian Barbarosie/ Anca-Maria Toader

14h00 (Abstract #598)
Ehsan Ameri, Mahmoud Shakeri and Mohammad mohammadi aghdam
IMPLEMENTATION OF THE GLOBALIZED NELDER-MEAD METHOD ON FUNDAMENTAL FREQUENCY MAXIMIZATION OF CYLINDRICAL PANELS

14h20 (Abstract #624)
Fabio Luraghi
SURROGATE-BASED SHAPE OPTIMIZATION OF FIBER PATHS IN TOW-STEERED LAMINATES FOR MAXIMUM BUCKLING LOAD

14h40 (Abstract #657)
D.S. Lee, C. Morillo, G. Bugeda, O. Fruitos and S. Oller
MULTILAYERED COMPOSITE STRUCTURE DESIGN OPTIMISATION USING A ROBUST MULTI-OBJECTIVE OPTIMISATION PLATFORM

15h00 (Abstract #699)
Pierre Selva, Olivier Cherrier , Valerie Budinger , Frederic Lachaud and Joseph Morlier
Smart EMI monitoring of thin composite structures

15h20 (Abstract # 35)
Hadi Ghashochi Bargh, Mohammad Homayoun Sadr and Soheil Razavi
OPTIMAL DESIGN BY ELITIST-GENETIC ALGORITHM FOR MAXIMUM FUNDAMENTAL FREQUENCY OF FIBER METAL LAMINATED PLATES

16h00 **(Coffee-Break)**

6. Processing and Characterization of Carbon Nanostructures

Session Organizers: Celeste Pereira

(cpereira@inegi.up.pt)

Room: B013

Date: 29 June 2011

08h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 6.1 - Chairs: Celeste Pereira, Nicoleta Preda

11h00 (Abstract #416)
Tolga Aksencer and Metin Aydogdu
BENDING ANALYSIS OF NANOPLATES USING LEVY TYPE SOLUTION

11h20 (Abstract #422)
Monica Enculescu, Nicoleta Preda, Elena Matei, Ionut Enculescu
WET-CHEMICAL SYNTHESIS OF LUMINESCENT EUROPIUM (III) DOPED NANOFIBERS

11h40 (Abstract # 758)
Russell Binions and Michael E.A. Warwick
NOVEL CHEMICAL VAPOUR DEPOSITION ROUTES TO NANOCOMPOSITE THIN FILMS

12h00 (Abstract #524)
Christian Viets, Evgenij Mannov, Samuel T. Buschhorn and Karl Schulte
Laminate Lay-up Influence on Sensing Properties of
Carbon Nanotube Modified GFRP via Electrical Conductivity Methods

12h20 (Abstract #427)
Denni Kurniawan, Byung Sun Kim, Ho Yong Lee and Joong Yeon Lim
MECHANICAL PROPERTIES OF BASALT FIBER/POLYLACTIC ACID
COMPOSITES-EFFECTS OF VARIOUS TREATMENTS

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 6.2 - Chairs: Celeste Pereira, Robert Pullar

16h30 (Abstract #591)
Mauro C. R. Garcia, Valeria Pettarin, Julio C. Viana, Antonio J. Pontes, Patricia Frontini, Antonio S. Pouzada
SYNERGISTIC EFFECTS OF NANOCLAY AND SHORT GLASS POLYPROPYLENE COMPOSITES

16h50 (Abstract # 6)
Robert C Pullar
COMBINATORIAL HIGH-THROUGHPUT SYNTHESIS AND MEASUREMENT OF COMPOSITE MATERIALS

17h10 (Abstract # 755)
Carolina Fernandez, Gonzalo Pincheira, Camila Scheel, Jaime Vergara, Paulo Flores
DISPERSION EVALUATION OF CARBON NANOTUBES IN GLASS FIBER/EPOXY COMPOSITES

17h30 (Abstract #564)
N.C. Loureiro, J.L.Esteves and J.C. Viana
MECHANICAL CHARACTERIZATION OF PLA/PHA BLENDS

17h50 (Abstract #573)
Eung Soo Kim , Chang Jun Jeon
DIELECTRIC PROPERTIES OF LAYERED $MgTa_2O_6$ AND $MgMoO_4$ / PTFE COMPOSITES AT MICROWAVE FREQUENCY

18h10 (Abstract #148)
S.K. Nikoghosyan, A.A.Sahakyan, V.V.Harutyunyan, E.A.Hakhverdyan, V.B.Gavalyan, G.N,Yeritsyan, A.S.Hovannesyan, N.E Grigoryan, V. A. Atoyan,K.I. Puskulyan, M.Gerchikov
PHYSICAL PROPERTIES OF MODIFIED BASALT FIBER ADSORBENTS

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

Date: 30 June 2011

Session 6.3 - Chairs: Celeste Pereira, J. Zicans

08h40 (Abstract #409)
R. Merijs Meri, J. Bitenieks, M. Knite and R. Maksimov
CARBON NANOTUBES MODIFIED POLYVINYLACETATE COMPOSITE: THEORETICAL AND EXPERIMENTAL ASPECTS

09h00 (Abstract #348)
Barbara C. F. Bonalume, Guilherme W. Lebrão, Jesualdo Luiz Rossi
FUNCTIONALIZED CARBON NANOTUBES FOR NANOCOMPOSITES

09h20 (Abstract #364)
M. G. Navarro-Rojero, F. Rubio-Marcos, J. J. Romero, J. F. Fernandez
PARAMETERS THAT DETERMINE THE ELECTRICAL CONDUCTIVITY BY MEANS OF THE NOT DESTRUCTIVE TECHNOLOGY OF COMPLEX IMPEDANCE IN CERAMICS FERROELECTRICS OF $Bi_4Ti_3O_{12}$

09h40 (Abstract #365)
Evgenij Mannov, Lars Boger and Karl Schulte
HOMOGENEOUS DISTRIBUTION OF CARBON NANOTUBES IN GLASS FIBRE REINFORCED POLYMER COMPOSITES WITH PREPREG TECHNOLOGY

10h00 (Abstract #269)
N. Preda, M. Enculescu, E. Matei, M. E. Toimil-Molares and I. Enculescu
SYNTHESIS OF CdS NANOSTRUCTURES USING TEMPLATE-ASSISTED AMMONIA-FREE CHEMICAL BATH DEPOSITION

10h30 **(Coffee-Break)**

Session 6.4 - Chairs: Celeste Pereira, Abdulhadi A. Al-Juhani

11h00 (Abstract #658)
Celeste M.C. Pereira, Dinis Dias and Ivo Costa
Fire reaction behavior of epoxy/carbon nanotube composites

11h20 (Abstract #233)
P. Slobodian, P. Riha, R. Boruta and P Saha
CARBON NANOTUBE ENTANGLED NETWORK/PS COMPOSITE FOR RESISTANCE-DEFORMATION SENSING

11h40 (Abstract #227)
Abdulhadi A. Al-Juhani
MECHANICAL AND RHEOLOGICAL PROPERTIES OF NANOCOMPOSITES MADE OF POLYPROPYLENE/POLY (ETHYLENE OXIDE) BLENDS AND HYDROXY-TREATED NANOCLAYS

12h00 (Abstract #147)

V.S.Bagdasaryan, V.V.Harutyunyan, N.E.Grigoryan, V.B.Gavalyan, V.A.Atoyan, K.I.Pyuskyulyan, M.Gerchikov

DEPOSITION OF AEROSOL NANOPARTICLES IN FIBROUS FILTERS

12h40 **(Lunch)**

7. Buckling and Postbuckling of stiffened composite plates and shells

Session Organizers: Christian Mittelstedt, Richard Degenhardt

(Christian.Mittelstedt@airbus.com,richard.degenhardt@dlr.de)

Room: B033

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 7.1 - Chairs: Christian Mittelstedt, Haim Abramovich

11h00 (Abstract # 7)
Goichi Ben, Naomi Kishitani and Yuuta Mochizuki
BUCKLING ANALYSIS AND OPTIMUM DESIGN OF CFRP ISOGRID CYLINDRICAL SHELLS

11h20 (Abstract # 22)
H. Abramovich
DYNAMIC BUCKLING OF THIN WALLED STRUCTURES-EXPERIMENTAL AND NUMERICAL RESULTS

11h40 (Abstract # 36)
E. Carrera, S. M. Ibrahim , M. Petrolo and E. Zappino
BUCKLING OF COMPOSITE THIN WALLED BEAMS BY REFINED THEORY

12h00 (Abstract # 49)
Kun Yu, Yin Liu, Heng Hu, Michel Potier-Ferry
A double-scale analysis on buckling and wrinkling phenomena of sandwich structures

12h20 (Abstract #158)
F. Shadmehri, S. V. Hoa, M. Hojjati
BUCKLING OF CONICAL COMPOSITE SHELLS

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 7.2 - Chairs: Suong Hoa, Evgeny Morozov

16h30 (Abstract #313)
Adrien Perret, Sebastien Mistou and Marina Fazzini
NUMERICAL MODELING AND EXPERIMENTAL STUDY IN BUCKLING OF A COMPOSITE STIFFENED PANEL INFUSED WITH INTEGRATED STRUCTURES

16h50 (Abstract #389)
Ivo Cerny, Rayner M. Mayer and George Jeronimidis
EVALUATION OF STATIC STRENGTH AND STRESS-STRAIN ANALYSES OF A REALISTIC FULL-SCALE MODEL OF A GRP RAILWAY FREIGHT BOGIE

17h10 (Abstract # 94)
Benedikt Kriegesmann, Eelco L. Jansen and Raimund Rolfes
SEMI-ANALYTICAL PROBABILISTIC ANALYSIS OF AXIALLY COMPRESSED STIFFENED COMPOSITE PANELS

17h30 (Abstract # 99)
Evgeny V. Morozov, Alexander V. Lopatin and Vladimir A. Nesterov
BUCKLING ANALYSIS OF ANISOGRID COMPOSITE LATTICE CONICAL SHELLS

17h50 (Abstract #105)
Christian Mittelstedt, Henrike Erdmann and Kai-Uwe Schroder
A CLOSED-FORM SOLUTION FOR THE POSTBUCKLING BEHAVIOUR
OF COMPOSITE PLATE STRIPS UNDER INPLANE SHEAR LOAD

18h10 (Abstract #448)
M. Cano, A. Beakou, J.B. Le Cam and V. Verney
ANALYSIS AND MODELLING OF PREPREG BUCKLING DURING AUTOMATED TAPE LAYING PROCESS

18h30 (Abstract # 76)
Tanvir Rahman, Eelco Jansen and Zafer Gurdal
IMPERFECTION SENSITIVITY ANALYSIS OF COMPOSITE SHELLS
USING A FINITE ELEMENT VERSION OF KOITER'S METHOD

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 7.3 - Chairs: Werner Wagner, Hans Reimerdes

11h00 (Abstract #207)
Michael Bruyneel, Jean-Pierre Delsemme, Frederic Duboeuf, Philippe Jetteur
INTERFACE ELEMENT FOR DELAMINATION SIMULATION A GOOD USAGE FOR ACCURACY AND PERFORMANCES

11h20 (Abstract #622)
T. Kuhn, H. Pasternak and C. Mittelstedt
LOCAL WEB BUCKLING OF SHEAR-DEFORMABLE COMPOSITE I, C, Z AND BOX BEAM STRUCTURES

11h40 (Abstract #238)
M. Quatmann and H.-G. Reimerdes
PREDICTION OF CRIPPLING LOADS OF COMPOSITE STRINGERS

12h00 (Abstract #239)
Werner Wagner
ON THE DEVELOPMENT OF ROBUST INTERFACE ELEMENTS FOR THE DELAMINATION ANALYSIS
OF STRUCTURES BASED ON MIXED FE-METHODS

12h20 (Abstract #263)
Ali Khani, Mostafa M. Abdalla and Zafer Gurdal
VARIABLE STIFFNESS DESIGN OF ARBITRARY CROSS-SECTION CYLINDERS FOR
BUCKLING WITH STRENGTH CONSTRAINT

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 7.4 - Chairs: Christian Mittelstedt

16h30 (Abstract #748)
M. Doreille, T. Ludwig, S. Merazzi
Global-Local Post-Buckling Finite Element Analysis
with the Common Mesh Refinement Method

16h50 (Abstract #231)
David Wennberg, Per Wennhage and Sebastian Stichel
SELECTION OF SANDWICH PANELS FOR THE LOAD CARRYING
STRUCTURE OF HIGH-SPEED RAIL VEHICLES

17h10 (Abstract #742)
E. Madenci and E. Oterkus
STRUCTURAL STABILITY AND FAILURE OF COMPOSITE

17h30 (Abstract #623)
Sina Berg, David Chrupalla, Luise Karger, Eelco Jansen and Raimund Rolfes
APPLICATION OF A TWO-WAY MULTISCALE ANALYSIS FOR COMPOSITE STRUCTURES IN ABAQUS

17h50 (Abstract #123)
Wu Zhen, Chen Wanji
BUCKLING AND WRINKLING BEHAVIORS OF SOFT CORE AND SANDWICH STRUCTURES

18h10 (Abstract #336)
M. H. Kargarnovin and M. Hashemi
BUCKLING ANALYSIS OF MULTILAYERED FUNCTIONALLY GRADED COMPOSITE CYLINDERS

18h30 (Abstract # 67)
S. B. Singh and Dinesh Kumar
EFFECT OF CUTOUT ASPECT RATIO ON BUCKLING AND POSTBUCKLING
STRENGTHS OF COMPOSITE PANEL UNDER INPLANE SHEAR

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

Date: 30 June 2011

Session 7.5 - Chairs: Richard Degenhardt

08h40 (Abstract #476)
Ji-Seon Kim, Chul-Jin Moon, Jin-Hwe Kweon , Jin-Ho Choi, Jong-Rae Cho, Sang-Rae Cho and Yoon-Sik Cho
BUCKLING BEHAVIOR OF COMPOSITE SANDWICH
CYLINDERS SUBJECTED TO HYDROSTATIC PRESSURE

09h00 (Abstract #498)
H.Assaee, H.Noroozi, S.Tabatabaei
THE APPLICATION OF DIFFERENT SHELL THEORIES IN BUCKLING ANALYSIS OF
LAMINATED CYLINDRICAL SHELLS UNDER AXIAL COMPRESSION

09h20 (Abstract #499)
H.Assaee, S.Tabatabaei, H.Noroozi
THE INFLUENCE OF FIBER ORIENTATION ON BUCKLING PERFORMANCE OF
LAMINATED CYLINDERS USING DIFFERENT VERSIONS OF FINITE ELEMENT METHOD

09h40 (Abstract #500)
H.Assaee, M.Hajikazemi and H.R.Ovesy
THE EFFECT OF ANISOTROPY ON POST-BUCKLING BEHAVIOR OF LAMINATED PLATES
USING SEMI-ENERGY FINITE STRIP METHOD

10h00 (Abstract #453)
R. Eslami Farsani, S.M.R. Khalili, and M. Mohammadzadeh
BUCKLING ANALYSIS AND MODELING OF SANDWICH BEAMS
WITH ORTHOTROPIC CORE SUBJECTED TO COMPRESSIVE LOADING

10h30 **(Coffee-Break)**

8. Concrete-Polymer Composites: Novelty Approaches

Session Organizers: Cristina Ribeiro, Tomas san Jose, João Reis

(cribeiro@inegi.up.pt, tomas@labein.es, jreis@mec.uff.br)

Room: B023

Date: 30 June 2011

Session 8.1 - Chairs: Cristina Ribeiro, João Reis

09h00 **KEYNOTE**: (# 5) O.Figovsky, E.Gotlib, D.Beilin and N.Blank
NANOSTRUCTURED POLYMER COATINGS FOR REPAIR AND STRENGTHENING
OF CONCRETE STRUCTURES

09h40 (Abstract # 59)
F.J.C. Del Vecchio, J.M.L. Reis and H.S. Costa-Mattos
COMPRESSIVE STRENGTH OF POLYMER CONCRETE AT DIFFERENT STRAIN RATES

10h00 (Abstract #240)
Nicolae G. Angelescu and Ioana F. Ion
POLYESTER RESIN AND CONDENSED SILICA FUME POLYMER CONCRETE

10h30 **(Coffee-Break)**

Session 8.2 - Chairs: Cristina Ribeiro, João Reis

11h00 (Abstract #258)
Pello Larrinaga, Jose T. San-Jose, David Garcia, Leire Garmendia and Carlos Chastre
GLOBAL STUDY OF THE BEHAVIOUR OF TEXTILE REINFORCED MORTAR UNDER TENSILE STRESS

11h20 (Abstract #482)
Peter Ramge, Hans-Carsten Kuehne and Birgit Meng
DEVELOPMENT OF REPAIR MORTARS FOR THE RESTORATION
AND REPROFILING OF NATURAL STONE ELEMENTS IN LISTED BUILDINGS AND MONUMENTS

11h40 (Abstract #361)
M. H. Harajli, H. ElKhatib, J. Tomas San-Jose
Seismic Performance of Masonry Walls Strengthened
Using Basalt Textile - Lime Mortar System

12h00 (Abstract #481)
Peter Ramge, Hans-Carsten Kuehne and Birgit Meng
POTENTIALS AND BORDERS OF THE CUSTOMISATION OF
REPAIR MORTARS BY MIXTURE MODIFICATION

12h20 (Abstract # 754)
A. Nicolau Costa, M.C.S. Ribeiro
COMPARATIVE ANALYSIS OF THE EFFECT OF MILLED GFRP WASTE MATERIALS
AS REINFORCEMENT FOR POLYESTER BASED MORTARS

12h40 **(Lunch)**

Session 8.3 - Chairs: Cristina Ribeiro, Andrzej Garbacz

14h00 (Abstract #507)
João L. Feiteira, Maria S. Ribeiro
POLYMER ACTION ON ALKALI-AGGREGATE REACTION OF CEMENT MORTAR:
REVIEW OF BASIC CONCEPTS AND PRESENTATION OF A RESEARCH PROGRAM

14h20 (Abstract #539)
Andrzej Garbacz, Arkadiusz Lutomirski, Joanna J. Sokolowska
APPLICATION OF ULTRASONIC METHOD FOR QUALITY CONTROL
OF FLY ASHE POLYMER CONCRETES

14h40 (Abstract #545)
Kay A. Bode, Andrea Dimmig-Osburg
USAGE OF POLYMERS FOR POLYMER-MODIFIED SELFCOMPACTING CONCRETE (PSCC)

15h00 (Abstract #556)
Joanna J. Sokolowska, Andrzej Garbacz
COMPARATIVE STUDY OF POLYMER CONCRETES WITH VARIOUS FLY ASHES

15h20 (Abstract #506)
M. C.S. Ribeiro, A. Fiuza, M.L. Dinis, Ana C. Meira Castro, F.J.G. Silva, J.P. Meixedo, C. Costa and F. Ferreira
OPTIMIZATION PROCESS OF POLYESTER POLYMER MORTARS MODIFIED
WITH RECYCLED GFRP WASTE AGGREGATES -APPLICATION OF FACTORIAL EXPERIMENT DESIGN-

15h40 (Abstract #676)
Nikol Zizkova, Rostislav Drochytka, it Petranek
DEVELOPMENT OF ADHESIVE MATERIAL WITH INCREASED ADHESION AFTER HEAT EFFECT

16h00 **(Coffee-Break)**

Session 8.4 - Chairs: João Reis, José Aguiar

16h30 (Abstract #681)
Sandra S. Lucas, Sandra L. Cunha, Martin Rucek, Jose B. Aguiar, Victor M. Ferreira and Luis M. Braganca
PROPERTIES OF LIME BASED THERMAL MORTARS

16h50 (Abstract #721)
Alexey M. Sveshnikov, Pavel Demo and Zdenek Kozisek
NUCLEATION ON A NANOTEXTILE: A PRELIMINARY STUDY

17h10 (Abstract # 23)
J.M.L. Reis
EFFECTS OF RECYCLING PET BOTTLES IN THE FRACTURE PROPERTIES OF POLYMER CONCRETE

17h30 (Abstract #700)
Barbara Ehlers Franke, Jane Proszek Gorninski , Lucas Suriz Schneider , Daniel Felipe Hartz , Amanda Silveira dos Santos
The influence of the aggregate kind on the polymeric mortars made with epoxy resin

17h50 (Abstract # 750)
Mariusz Ksiazek
THE EXPERIMENTAL AND INNOVATIVE RESEARCH ON USABILITY OF
SULPHUR POLYMER COMPOSITE FOR CORROSION PROTECTION OF REINFORCING
STEEL AND CONCRETE

18h10 (Abstract #486)
V. Bria, I.-G. Birsan and A. Circiumaru
THERMAL PROPERTIES OF FABRIC REINFORCED FILLED EPOXY BASED COMPOSITES

9. Modeling, Simulation and Testing of Sandwich and Adaptive Structures

Session Organizers: Cristovão Mota Soares, Aurelio Araujo, and Filipa Moleiro

(cristovao.mota.soares@ist.utl.pt,aurelio.araujo@ist.utl.pt ,
filipa.moleiro@dem.ist.utl.pt)

Room: B032

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 9.1 - Chairs: Cristovão Mota Soares, Filipa Moleiro

11h00 (Abstract # 17)
O. Barrera , A.C.F. Cocks and A.R.S. Ponter
Evaluation of the peak load corresponding to
pre-assigned design criteria in composite laminates by the Linear Matching Method

11h20 (Abstract # 97)
L. Alimonti, L. Dozio and E. Carrera
REFINED FINITE ELEMENTS FOR THE VIBROACOUSTIC RESPONSE OF
SANDWICH PLATES BACKED BY A CAVITY

11h40 (Abstract #311)
D. Carrella-Payan, G. Allegri
STATIC ANALYSIS OF DELAMINATED BEAMS USING A LAYERWISE SPLIT-ELEMENT TECHNIQUE

12h00 (Abstract #708)
R.M. Aguiar, F. Moleiro and C.M. Mota Soares
ASSESSMENT OF MIXED AND DISPLACEMENT-BASED MODELS FOR
STATIC ANALYSIS OF COMPOSITE BEAMS OF DIFFERENT CROSS-SECTIONS

12h20 (Abstract #122)
P. K. Mahato and D. K. Maiti
EFFECT OF HYGROTHERMALLY AND PIEZOELECTRICALLY INDUCED PRELOAD ON STATIC
& DYNAMIC BEHAVIOR OF LAMINATED COMPOSITE STRUCTURES

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 9.2 - Chairs: Cristovão Mota Soares, Filipa Moleiro

16h30 (Abstract #250)
Arief Yudhanto, Naoyuki Watanabe, Yutaka Iwahori and Hikaru Hoshi
IN-PLANE MECHANICAL PROPERTIES OF VECTRAN-STITCHED COMPOSITES BY HOMOGENIZATION METHOD

16h50 (Abstract #525)
L. Ripoll, J. L. Perez-Aparicio and P. Maimi
AXIAL STRESSES IN COMPOSITE MATERIALS FLYWHEELS

17h10 (Abstract #466)
Gabriel Martinez, Carlos Medina, Paulo Flores
NONLINEAR ANALYSIS OF A SANDWICH BEAM UNDER LOCALIZED DEFORMATIONS

17h30 (Abstract #508)
A.L. Araujo, C.M. Mota Soares, C.A. Mota Soares, H. Cortes and J. Herskovits
TOPOLOGICAL APPROACH TO OPTIMAL LOCATION OF PIEZOELECTRIC PATCHES IN SANDWICH PLATES

17h50 (Abstract #309)
Werner A. Hufenbach, Frank Adam, Michael Krahl, Martin Dannemann, Jens Franeck, Sybille Krzywinski, N. Zhao
EXPERIMENTAL AND NUMERICAL INVESTIGATIONS ON THE DRAPABILITY OF HYBRID YARN BASED TEXTILES USING AN ADAPTED HOT PRESSING PROCESS

18h10 (Abstract #730)
Martin Leong, Lars C.T. Overgaard, Ole T. Thomsen, and Erik Lund
PREDICTION OF THRESHOLD LOADS FOR LONG FATIGUE LIFE OF SANDWICH STRUCTURES WITH WRINKLE DEFECTS

18h30 (Abstract #295)
Ehab Hamed
VISCOELASTIC MODELLING AND ANALYSIS OF SANDWICH BEAMS UNDER SUSTAINED LOADING

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 9.3 - Chairs: Filipa Moleiro, Aurelio Araujo

11h00 (Abstract #487)
N. Carrere, F. Laurin, J. Rannou, J.-F. Maire
FROM MATERIAL FAILURE UP TO RUPTURE OF HIGH GRADIENT COMPOSITE STRUCTURES: NUMERICAL ISSUES AND COMPARISON WITH EXPERIMENTAL RESULTS

11h20 (Abstract #314)
S. KAPURIA AND P. KUMARI
THREE DIMENSIONAL ELASTICITY SOLUTIONS OF SANDWICH PANELS USING THE EXTENDED KANTOROVICH METHOD

11h40 (Abstract #400)
J.M. Romera, M.A. Cantera, I. Adarraga and F. Mujika
NUMERICAL ESTIMATION OF THE STRESS FIELD OF ANGLE-PLY COMPOSITE LAMINATES IN TENSILE TESTS

12h00 (Abstract # 64)
Nilanjan Mitra
MARINE GRADE SANDWICH COMPOSITE PANEL WITH SHEAR KEYS

12h20 (Abstract #411)
M. C. R. Garcia, A. C. S. Netto, A. J. Pontes
MODEL TO PREDICT SHRINKAGE AND EJECTION FORCES OF INJECTION MOULDED TUBULAR PARTS OF SHORT GLASS FIBER REINFORCED THERMOPLASTICS

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 9.4 - Chairs: Filipa Moleiro, Aurelio Araujo

16h30 (Abstract #446)
G. Bonnet, T.K. Nguyen, V. Monchiet, J. Yvonnet
A numerical method coupling FFT and NEXP methods for computing the overall response of non linear composites

16h50 (Abstract #467)
Joaquin Rodriguez, Paulo Flores
ARCHED COMPOSITE SANDWICH BEAM WITH VARIABLE SECTION UNDER LARGE DISPLACEMENTS

17h10 (Abstract #218)
H. Mata, R. Valente, M. Parente, A. A. Fernandes, A. Santos, R. Natal Jorge
MECHANICAL CHARACTERIZATION
OF SANDWICH SHELLS WITH METALLIC FOAM CORES

17h30 (Abstract #464)
A. Airoldi, P. Bettini, F.M. Oktem, M. Crespi, G. Sala
DESIGN AND MANUFACTURING OF A COMPOSITE RIB FOR A MORPHING WING WITH A CHIRAL TOPOLOGY

17h50 (Abstract #528)
Thiru Aravinthan and Allan C. Manalo
SIMPLIFIED DESIGN APPROACH FOR FIBRE COMPOSITE SANDWICH STRUCTURES

18h10 (Abstract #510)
P.T.M. Duong, B. Abbes, Y.M. Li, Y.Q. Guo
HOMOGENIZATION OF SANDWICH PLATES WITH CORRUGATED CORES FOR
COUPLED SHEAR - TORSION PROBLEM

18h30 (Abstract #470)
A.R. Ghasemi, I. Razavian
ANALYTICAL AND NUMERICAL STUDY OF STRESS CONCENTRATION
FACTOR IN ISOTROPIC, ORTHOTROPIC PLATES AND COMPOSITE LAMINATES

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

Date: 30 June 2011

Session 9.5 - Chairs: Filipa Moleiro, Aurelio Araujo

08h40 (Abstract #509)
F. Moleiro, C.M. Mota Soares, C.A. Mota Soares and J.N. Reddy
LAYERWISE MIXED LEAST-SQUARES MODELS FOR
THE COUPLED ELECTROMECHANICAL STATIC ANALYSIS OF MULTILAYERED PLATES

09h00 (Abstract #777)
Stijn Debruyne, Dirk Vandepitte, Loujaine Mehrez, Eric Debrabandere
INFLUENCE OF DESIGN PARAMETER VARIABILITY
OF THERMOPLASTIC HONEYCOMB SANDWICH PANELS ON THEIR DYNAMIC BEHAVIOUR

09h20 (Abstract #544)
Y Duan, B Yao, Q Chen
Viscoelastic damper for hollow shaft vibration control

09h40 (Abstract #602)
Jean-Sebastien Gerard, Roger Assaker, Laurent Adam, Michael Bruyneel, Samih Zein and Jean-Pierre Delsemme
ACCURATE MULTI-SCALE MATERIAL MODELING FOR THE ANALYSIS
OF STRUCTURES MADE OF FIBER PLACED UNIDIRECTIONAL PLIES

10h00 (Abstract #761)
Saber Azizi, Mohammad Reza Ghazavi, Ghader Rezazadeh, Farrokh Mobadersani
ON THE DYNAMIC STABILITY OF A COMPOSITE MICROBEAM
EXPOSED TO PIEZOELECTRIC ACTUATION

10h30 **(Coffee-Break)**

Session 9.6 - Chairs: Filipa Moleiro, Aurelio Araujo

11h00 (Abstract #774)
ajid Shahgholi, Saber Azizi, Siamak Esmaeilzadeh Khadem, Gholam Hossein Rahimi
EQUATIONS OF MOTION FOR THICK FUNCTIONALLY GRADED MATERIAL
(FGM) SHELLS WITH VARIABLE THICKNESS FROM A THREE-DIMENSIONAL THEORY

11h20 (Abstract #638)
Alireza Shooshtari, Hamed Kalhori and S. Marzieh Hoseini
NONLINEAR VIBRATION OF A CAPACITIVE RECTANGULAR LAMINATED COMPOSITE PLATE
TO A UNIPOLAR SQUARE WAVE

11h40 (Abstract #577)
Qiao Jie Yang and Brian Hayman
SIMPLIFIED APPROACHES TO BUCKLING AND ULTIMATE STRENGTH OF COMPOSITE PLATES

12h00 (Abstract #531)
M. Sadighi and M. H. Benvidi
EFFECTS OF DIFFERENT BOUNDARY CONDITIONS ON THE BENDING RESPONSE
OF SANDWICH PANELS WITH SOFT CORE

12h20 (Abstract #596)
G. Labeas and V. Ptochos
EXPERIMENTAL AND NUMERICAL ANALYSIS OF SANDWICH STRUCTURES
WITH COMPOSITE SKINS AND CELLULAR CORE

12h40 **(Lunch)**

Session 9.7 - Chairs: W. Larbi, J. F. Deu

14h00 (Abstract #662)
W. Larbi, J.-F. Deu and R. Ohayon
FINITE ELEMENT FORMULATION OF SMART COMPOSITE STRUCTURE COUPLED TO ACOUSTIC FLUID

14h20 (Abstract #663)
J.F. Deu, O. Thomas and A. Lazarus
REDUCE ORDER FINITE ELEMENT MODELS FOR NONLINEAR VIBRATIONS
OF STRATIFIED PIEZOELECTIC BEAMS WITH APPLICATIONS TO MEMS

14h40 (Abstract #688)
J. Reinoso, A. Blazquez, F. Paris and E. Ramm
IMPLEMENTATION OF COMPOSITE 7-PARAMETERS FORMULATION
OF SHELL ELEMENTS APPLYING USER SUBROUTINE UEL

15h00 (Abstract #689)
J. Reinoso, A. Blazquez, F. Paris and F. Cruz
INFLUENCE OF THE MODELIZATION OF FRAMES ON THE ANALYSIS OF
A COMPRESSED CYLINDRICAL STIFFENED PANEL

15h20 (Abstract #784)
Y. Mohammadi, S.M.R. Khalili
Free Vibration Analysis of Sandwich Plates with FGM Face Sheets and
Temperature-Dependent Properties
of the Face Sheet Materials by a New Approach

15h40 (Abstract #228)
H. R. Ovesy, M. Taghizadeh, M. Kharazi
POST-BUCKLING ANALYSIS OF COMPOSITE PLATES CONTAINING EMBEDDED DELAMINATION
WITH ARBITRARY SHAPE BY USING HIGHER ORDER SHEAR DEFORMATION THEORY

16h00 **(Coffee-Break)**

10. Electro-thermal properties of composite materials

Session Organizers: Dai-Gil Lee

(dgl0707@kaist.ac.kr)

Room: B031

Date: 28 June 2011

09h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 10.1 - Chairs: Bu Gi Kim, Dai Gil Lee

11h00 (Abstract #142)
Jin Gyu Kim, Ilbeom Choi, Dai Gil Lee and Il Sung Seo
FLAME AND SILANE TREATMENTS FOR IMPROVING THE ADHESIVE BONDING CHARACTERISTICS OF ARAMID/EPOXY COMPOSITES

11h20 (Abstract #149)
Ilbeom Choi, Jin Gyu Kim, Dai Gil Lee and Il Sung Seo
EFFECTS OF A DAMAGED COMPOSITE FACE TO THE ELECTROMAGNETIC WAVE TRANSMISSION CHARACTERISTICS OF LOW-OBSERVABLE RADOMES

11h40 (Abstract #170)
Yun Jeong Hwang, Soon Ho Yoon and Dai Gil Lee
FRACTURE TOUGHNESS IMPROVEMENT WITH ARAMID FIBERS FOR ADHESIVE BONDED STAINLESS STEEL JOINTS AT CRYOGENIC TEMPERATURE

12h00 (Abstract #192)
Chang Seon Bang and Dai Gil Lee
CRYOGENIC CHARATERISTICS OF CHOPPED GLASS FIBER REINFORCED POLY URETHANE FOAM COMPOSITE

12h20 (Abstract #180)
Ha Na Yu, Jun Woo Lim, Min Kook Kim and Dai Gil Lee
Optimum plasma etching treatment for the composite bipolar plate of polymer electrolyte membrane fuel cells

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 10.2 - Chairs: Ha Na Yu, Dai Gil Lee

16h30 (Abstract #293)
Ki Hyun Kim and Dai Gil Lee
Vibration isolation of cryogenic containment system due to sloshing with glass fiber composite

16h50 (Abstract #296)
Min Kook Kim, Ha Na Yu, Jun Woo Lim and Dai Gil Lee
Electrical conductivity in the through-thickness direction of the carbon composite bipolar plate for the PEMFC

17h10 (Abstract #202)
Jun Woo Lim, Bu Gi Kim, Ha Na Yu, Dai Gil Lee
Carbon composite metal hybrid bipolar plate for high efficiency PEMFC

17h30 (Abstract #204)
Bu Gi Kim, Young Ho Yu and Dai Gil Lee
Fabrication and bonding experiment of nanometer-scale surface modified glass fiber/epoxy composite

17h50 (Abstract #208)

Young Ho Yu, Bu Gi Kim and Dai Gil Lee

Cryogenic reliability of composite sandwich panel of liquefied natural gas (LNG) ships

18h10 (Abstract #290)

Soon Ho Yoon and Dai Gil Lee

Design of the composite sandwich panel of the hot pad for the bonding of large area

18h30 (Abstract #306)

W. S. Lyoo, J. W. Cha, M. J. Kim, S. M. Lee, S. H. Han, M. K. Lee, Y. H. Jang, C. S. Kim, T. H. Oh, Y. S. Gal, S. K. Noh

PREPARATION AND CHARACTERIZATION OF ATACTIC
POLY(VINYL ALCOHOL)/PLATINUM
NANOCOMPOSITES BY ELECTROSPINNING

19h00 **(Poster Session and Reception at FEUP)**

11. Beam, Plate and Shell Theories and Computational Models for Laminated Structures

Session Organizers: Erasmo Carrera, Olivier Polit, Luciano Demasi, Michele D'Ottavio

(erasmo.carrera@polito.it,Olivier.Polit@u-paris10.fr
ldemasi@mail.sdsu.edu,michele.d_ottavio@u-paris10.fr)

Room: B026

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 11.1 - Chairs: Erasmo Carrera, Olivier Polit

11h00 (Abstract # 13)
E. Carrera, G. Giunta, M. Petrolo, and M. Maiaru
REFINED BEAM ELEMENTS FOR THE MULTISCALE ANALYSIS
OF FIBER-REINFORCED COMPOSITE STRUCTURES

11h20 (Abstract # 29)
E. Carrera, P. Nali
AN ASSESSMENT ON THE FAILURE ANALYSIS OF LAYERED STRUCTURES
WITH VARIABLE KINEMATICAL DESCRIPTION

11h40 (Abstract #639)
Chien-Hong Lin and Anastasia Muliana
A MULTI-SCALE MODEL FOR ANALYZING NONLINEAR RESPONSE OF ACTIVE COMPOSITES

12h00 (Abstract #337)
L.M.J.S. Dinis, R.M. Natal Jorge and J. Belinha
THE NATURAL NEIGHBOUR RADIAL POINT INTERPOLATOR METHOD
EXTENDED TO A TRIGONOMETRIC SHEAR DEFORMATION THEORY

12h20 (Abstract #146)
Andrzej Katunin
DISSIPATIVE HEATING TEMPERATURE EVOLUTION DURING RESONANT VIBRATIONS
OF POLYMERIC COMPOSITE PLATES

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 11.2 - Chairs: Luciano Demasi, Michele D'Ottavio

16h30 (Abstract #732)
L. C. M. Cardoso, C. M. A. Vasques and J. D. Rodrigues
VISCOELASTIC DAMPING TREATMENTS APPLIED TO A PLATE IN A COUPLED CAVITY-PLATE SYSTEM

16h50 (Abstract #377)
Olivier Polit, Philippe Vidal and Michele DOttavio
SEVEN PARAMETERS C^0 F.E. FOR HETEROGENEOUS PLATE STRUCTURES

17h10 (Abstract #378)
Michele D'Ottavio, Olivier Polit and Erasmo Carrera
ASSESSMENT OF MODELS FOR THE BUCKLING ANALYSIS OF COMPOSITE PLATES AND SHELLS

17h30 (Abstract #503)
Hamed Akhavan and Pedro Ribeiro
LARGE DEFLECTIONS OF VARIABLE STIFFNESS COMPOSITE LAMINATES BY A HIGHER ORDER DEFORMATION THEORY

17h50 (Abstract #504)
Jose M. F. Lima and Paulo R. L. Lima
ENERGY FINITE DIFFERENCE METHOD FOR NONLINEAR ANALYSIS OF LAMINATED STRUCTURES

18h10 (Abstract #515)
Todd O. Williams
A NEW THEORETICAL FRAMEWORK FOR THE FORMULATION OF GENERAL, NONLINEAR, MULTI-SCALE SHELL THEORIES

18h30 (Abstract #184)
Gaetano Giunta, Anita Catapano, Salim Belouettar and Erasmo Carrera
STATIC ANALYSIS OF LAMINATED AND SANDWICH BEAMS VIA A UNIFIED FORMULATION

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 11.3 - Chairs: Gaetano Giunta, Anastasia Muliana

11h00 (Abstract #543)
Y.F. Xing and B. Liu
EXACT CHARACTERISTIC EQUATIONS FOR SOME OF CLASSICAL BOUNDARY CONDITIONS OF VIBRATING THIN ORTHOTROPIC CIRCULAR CYLINDRICAL SHELLS

11h20 (Abstract #134)
Luciano Demasi
PARTIALLY ZIG-ZAG ADVANCED SHEAR DEFORMATION THEORIES BASED ON THE GENERALIZED UNIFIED FORMULATION

11h40 (Abstract #672)
D.T.Nguyen, M.D'Ottavio, J.F.Caron
A layer-wise stress model for composite materials, benchmark and applications

12h00 (Abstract # 1)
Yao Koutsawa, Olivier Azoti and S. Belouettar
AUXECITY AND DAMPING PROPERTIES OF COMPOSITE MATERIALS AND STRUCTURES

12h20 (Abstract # 17)
Zhangxin Guo, Xiaoping Han, Xiping Zhu, Xizhe Zhi
Numerical analysis of Composite Laminates Stitched around a Circular Hole

12h40 **(Lunch)**

12. Functionally graded structures

Session Organizers: Erasmo Carrera, Salim Belouettar, Maria Cinefra, Gaetano Giunta

(erasmo.carrera@polito.it, salim.belouettar@tudor.lu
maria.cinefra@polito.it,gaetano.giunta@tudor.lu)

Room: B027

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 12.1 - Chairs: Salim Belouettar, Maria Cinefra

11h00 **KEYNOTE**: (#637) Serge Abrate
VIBRATION AND WAVE PROPAGATION IN FUNCTIONALLY GRADED STRUCTURES

11h40 (Abstract #111)
Gaetano Giunta, Daniela Crisafulli, Erasmo Carrera and Salim Belouettar
FREE VIBRATION ANALYSIS OF FGM BEAMS BY MEANS OF CLASSICAL AND ADVANCED THEORIES

12h00 (Abstract # 18)
E. Carrera, M. Cinefra, L. Della Croce and C. Chinosi
REFINED SHELL ELEMENTS FOR THE ANALYSIS OF FUNCTIONALLY GRADED STRUCTURES

12h20 (Abstract #101)
Mesut Simsek, Turgut Kocaturk and Seref Doguscan Akbas
Dynamics of an Axially Functionally Graded Beam Carrying a Moving Harmonic Load

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 12.2 - Chairs: Salim Belouettar, Maria Cinefra

16h30 (Abstract # 55)
Kerimcan Celebi and Naki Tutuncu
EXACT NATURAL FREQUENCIES OF FUNCTIONALLY GRADED BEAMS VIA AN ELASTICITY APPROACH

16h50 (Abstract # 96)
P. K. Mahato and D. K. Maiti
AEROELASTIC ANALYSIS AND CONTROL OF FUNCTIONALY GRADED MATERIAL
PLATE UNDER THERMAL ENVIRONMENT

17h10 (Abstract #103)
Seref Doguscan Akbas, Turgut Kocaturk and Mesut Simsek
LARGE DEFLECTION OF A CANTILEVER BEAM MADE OF FUNCTIONALLY GRADED MATERIAL

17h30 (Abstract #450)
M. Saadatfar, S.M.R. Khalili
Analytical Solution for Electro-magneto-thermo-elastic Behaviors of a
Functionally Graded Piezoelectric Composite Cylinder

17h50 (Abstract #619)
M. Arefi, G. H. Rahimi and M. J. Khoshgoftar
ELECTRO THERMO ELASTIC ANALYSIS OF A THICK SPHERICAL SHELL FOR FGP MATERIALS

18h10 (Abstract #261)
Christopher M. Taylor, Christopher W. Smith, Wayne Miller and Kenneth E.
IN-PLANE HIERARCHY IN HONEYCOMBS

18h30 (Abstract # 52)
M Shakeri, A Chitgarha
A THREE-DIMENSIONAL ELASTICITY SOLUTION OF
FUNCTIONALLY GRADED MATERIAL WITH PIEZOTHERMOELASTIC LAYER

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 12.3 - Chairs: Mesut Simsek, Gaetano Giunta

11h00 (Abstract #441)
B. Uymaz, M. Aydogdu and S. Filiz
VIBRATION ANALYSES OF FGM PLATES WITH IN-PLANE MATERIAL INHOMOGENEITY BY RITZ METHOD

11h20 (Abstract #415)
Pinar Aydan Demirhan, Metin Aydogdu, Vedat Taskin and Nilhan Urkmez Taskin
LARGE DEFLECTION OF CANTILEVER FUNCTIONALLY GRADED FOAM BEAMS SUBJECTED TO AN END MOMENT

11h40 (Abstract #584)
Victor A. Eremeyev and Holm Altenbach
ON THE STABILITY OF FUNCTIONALLY GRADED PLATES

12h00 (Abstract #442)
B. Uymaz, M. Aydogdu
THREE DIMENSIONAL MECHANICAL BUCKLING OF FGM PLATES WITH VARIOUS BOUNDARY CONDITIONS

12h20 (Abstract #268)
S. Momennia, A. H. Akbarzadeh
ANALYSIS OF FUNCTIONALLY GRADED RECTANGULAR
AND CIRCULAR PLATES USING FINITE ELEMENT METHOD

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 12.4 - Chairs: Mesut Simsek, Gaetano Giunta

16h30 (Abstract #387)
A. Fallah, M.M. Aghdam and M.H. Kargarnovin
FREE VIBRATION ANALYSIS OF FUNCTIONALLY GRADED PLATES ON ELASTIC FOUNDATION
USING EXTENDED KANTOROVICH METHOD

16h50 (Abstract #419)
Anindya Bhar, Subir K. Satsangi and Sriman K. Bhattacharyya
STATIC AND NATURAL VIBRATION ANALYSIS OF STIFFENED FUNCTIONALLY GRADED PLATES

17h10 (Abstract #665)
M. J. Khoshgoftar, G. H. Rahimi and M. Arefi
EXACT SOLUTION FOR A ROTATING CYLINDER MADE OF FUNCTIONALLY GRADED
PIEZOELECTRIC MATERIALS

17h30 (Abstract #488)
M. Rafiee, H. Kalhori, S. Mareishi
NONLINEAR RESONANCE ANALYSIS OF CLAMPED FUNCTIONALLY
GRADED BEAMS

17h50 (Abstract #316)
M. Hashemi
BUCKLING ANALYSIS OF FUNCTIONALLY GRADED BEAM WITH LENGTHWISE MATERIAL PROPERTY VARIATIONS

18h10 (Abstract #679)
Hadi Arvin, Walter Lacarbonara and Firooz Bakhtiari-Nejad
A GEOMETRICALLY EXACT APPROACH TO THE DYNAMICS OF COMPOSITE ROTATING BLADES

18h30 (Abstract #449)
S.M.R. Khalili, A. Veysi Gorg Abad
DYNAMIC RESPONSE OF FUNCTIONALLY GRADED PLATES UNDER LOW VELOCITY IMPACT-A NEW METHOD

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

13. Auxetic composites and structures

Session Organizers: Fabrizio Scarpa

(f.scarpa@bristol.ac.uk)

Room: B028

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 13.1 - Chairs: Fabrizio Scarpa

11h00 (Abstract #116)
Hong Hu, Zhaoyang Ge and Bingang Xu
DEVELOPMENT OF THREE-DIMENSIONAL AUXETIC TEXTILE STRUCTURE FOR COMPOSITE REINFORCEMENT

11h20 (Abstract #117)
Kazuya Saito, F. Scarpa and Robin Neville
ORIGAMI COMPOSITE AUXETIC HONEYCOMB

11h40 (Abstract #125)
Romeo Ciobanu, Radu Damian and Cristina Schreiner
ELECTROMAGNETIC ENERGY PHENOMENA AT GHz IN CHIRAL DIELECTRIC STRUCTURES WITH DISTRIBUTED NANO-CONDUCTIVE INSERTIONS

12h00 (Abstract #127)
Hong Jie, Zhu Bin, Ma Yanhong, Chen Lulu, F. Scarpa
MECHANICAL PROPERTY OF METAL RUBBER PARTICLES FOR AN AUXETIC STRUCTURAL DAMPER

12h20 (Abstract #614)
G.Cicala, G.Recca, L.Oliveri, D.J.Grube, F.Scarpa and Y. Perikleous
AUXETIC HEXACHIRAL TRUSS CORE REINFORCED WITH TWISTED HEMP YARNS: OUT OF PLANE SHEAR PROPERTIES

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 13.2 - Chairs: Fabrizio Scarpa, Romeo Ciobanu

16h30 (Abstract #172)
Andrew Alderson, Kim L. Alderson and Naveen Ravirala
DESIGN AND MODELLING OF MECHANICAL AND THERMAL RESPONSES OF NOVEL AUXETIC HONEYCOMB CORES FOR STRUCTURAL COMPOSITES

16h50 (Abstract #131)
T.A. Aparecida, T.H. Panzera, F. Scarpa, A.L. Christoforo, L.C. Brandao, C.H. Lauro
NUMERICAL AND EXPERIMENTAL ANALYSES OF AUXETIC STRUCTURES BASED ON RECYCLED RUBBER

17h10 (Abstract #362)
M-A Boucher, W Miller, Z Ren, CW Smith and KE Evans
A STIFF NEGATIVE POISSON'S RATIO FIBROUS COMPOSITE

17h30 (Abstract #270)
Barnes D.L., Miller W., Marmier A., Evans K.E.
FE and Analytical study of Linear Compressibility in a Tetragonal beam structure

17h50 (Abstract #523)

Andrew Alderson, Kim L. Alderson and Khaled M. Zied

THE USE OF AUXETIC FIBRES TO CONTROL THERMAL EXPANSION
IN CARBON-FIBRE REINFORCED COMPOSITE LAMINATES

18h10 (Abstract #445)

Joseph N. Grima, Daphne Attard, Brian Ellul, Reuben Cauchi, and Ruben Gatt

ON THE PROPERTIES OF COMPOSITES INCORPORATING AUXETIC
AND NON-AUXETIC SYSTEMS WITH PARTICULAR EMPHASIS ON THEIR POISSON'S RATIOS

19h00 **(Poster Session and Reception at FEUP)**

14.Periodic materials

Session Organizers: Filipe Teixeira Dias, Alexandre Pinho da Cruz

(ftd@ua.pt,jpc@ua.pt)

Room: B032

Date: 28 June 2011

15. Rehabilitation of bridges with composite materials

Session Organizers: Henk Kolstein

(M.H.Kolstein@tudelft.nl)

Room: B026

Date: 29 June 2011

16. Wood Composites

Session Organizers: J.M. Cabrero

(jcabrero@unav.es)

Room: B028

Date: 30 June 2011

Session 16.1 - Chairs: José Cabrero

09h00 (Abstract # 48)
Raul D.S.G. Campilho, Mariana D. Banea and Lucas F.M. da Silva
TECHNIQUES FOR THE REPAIR OF WOOD MEMBERS BY USING
ADHESIVELY-BONDED CARBON-EPOXY PATCHES

09h20 (Abstract #345)
Allan C. Manalo and Thiru Aravinthan
FLEXURAL BEHAVIOUR OF GLULAM BEAMS FROM NOVEL SANDWICH PANELS

09h40 (Abstract #383)
J.G. Fueyo, M.P. Rubio, J.A. Cabezas and M. Dominguez
INFLUENCE OF THE SLOPE IN THE APEX ZONE STRESSES OF GLULAM PITCHED CAMBERED BEAMS

10h00 (Abstract #527)
Marcela Karmazinova, Jindrich J. Melcher and Jan Prokes
FIBRE-REINFORCED COMPOSITES BASED ON CFRP AND GFRP
USED AS THE EXTERNAL BONDED REINFORCEMENT FOR
THE STRENGTHENING OF STEEL AND TIMBER BEAMS

10h30 **(Coffee-Break)**

Session 16.2 - Chairs: José Cabrero

11h00 (Abstract #565)
N.C.Loureiro, P.Cardoso, J.L.Esteves and D.F.Jorge
WOOD-CORE-PLASTIC: THE POLYMERS USED INTO THE PRODUTION
OF WOOD SANDWICH STRUCTURES

11h20 (Abstract #729)
V. Carvelli, G. Fava and C. Poggi
GLUED-IN FRP STRIPS FOR CONNECTIONS IN GLULAM TIMBER STRUCTURES

11h40 (Abstract #723)
J.M. Cabrero , A. Heiduschke, P. Haller
ON THE DESIGN OF STRUCTURAL WOOD PROFILES REINFORCED
WITH COMPOSITE FIBERS: PARAMETRIC ASSESSMENT

12h00 (Abstract #659)
Celeste M.C. Pereira, Ivo Costa, Elmo Couras, Luisa M. H. Carvalho
FIRE REACTION PROPERTIES OF WOOD BASED COMPOSITES MADE WITH BIOPOLYMERS

12h40 **(Lunch)**

17. Thermomechanical behaviour of composite materials and sandwich structures

Session Organizers: Janice Barton, Ole Thomsen

(J.M.Barton@soton.ac.uk,ott@me.aau.dk)

Room: AUDITORIUM

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 17.1 - Chairs: Janice Barton, Ole Thomsen

11h00 **KEYNOTE**: (#560) B. L. KARIHALOO
Why and how do honeybees stiffen and strengthen their combs:
A new paradigm for cellular materials

11h40 (Abstract #740)
R.K. Fruehmann, S. Zhang, J. M. Dulieu-Barton and O. T. Thomsen
EXPERIMENTAL INVESTIGATION OF THERMOMECHANICAL INTERACTION
EFFECTS IN FOAM CORED SANDWICH STRUCTURES

12h00 (Abstract #271)
W. Hufenbach, M. Gude, R. Bohm and M. Zscheyge
MECHANICAL BEHAVIOUR OF HYBRID YARN TEXTILE-REINFORCED THERMOPLASTIC
COMPOSITES UNDER THERMOMECHANICAL LOADING CONDITIONS

12h20 (Abstract #291)
S. Momennia, A. H. Akbarzadeh
ANALYTICAL SOLUTION FOR THERMOMECHANICAL BEHAVIOR OF HIGHER-ORDER LAMINATED COMPOSITE
PLATES UNDER STATIC AND DYNAMIC LOADINGS

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 17.2 - Chairs: Janice Barton, Ole Thomsen

16h30 (Abstract #225)
K. R. JAGTAP, ACHCHHE LAL, B.N.SING
THERMOMECHANICAL ELASTIC BUCKLING OF FUNCTIONALLY GRADED MATERIALS
PLATE WITH RANDOM MATERIAL PROPERTIES

16h50 (Abstract #380)
Jorg Hohe, Carla Beckmann
NUMERICAL ANALYSIS OF DISORDER EFFECTS IN THE THERMO-MECHANICAL
BEHAVIOUR OF SOLID FOAMS

17h10 (Abstract #107)
N.M.A. Palumbo, C.W. Smith, W. Miller and K.E. Evans
MECHANICS AND THERMAL EXPANSIVITY IN 2D LATTICE STRUCTURES;
MINIMAL MASS AND STIFFNESS PENALTIES

17h30 (Abstract #108)
N.M.A. Palumbo, C.W. Smith, W. Miller and K.E. Evans
HIGH PERFORMANCE 3D TRUSSES; MECHANICS & THERMAL EXPANSIVITY

17h50 (Abstract #469)

A.R. Ghasemi, R. Baghersad

ANALYTICAL AND EXPERIMENTAL STUDY OF THERMAL CYCLE LOADING EFFECTS ON ELASTICITY CONSTANTS AND FRACTURE STRENGTH OF COMPOSITE LAMINATES

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

18. Joints in Composite Structures

Session Organizers: Raul Campilho

(raulcampilho@hotmail.com)

Room: B029

Date: 28 June 2011

09h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 18.1 - Chairs: Raul Campilho

11h00 (Abstract # 24)
Tien-Cuong Nguyen, Yu Bai, Xiao-ling Zhao, and Riadh Al-Mahaidi
TIME-TO-FAILURE OF STEEL/CFRP DOUBLE STRAP JOINTS UNDER
COMBINED THERMAL AND MECHANICAL LOADING

11h20 (Abstract #477)
Khanh-Hung Nguyen , Yong-Bin Park , Jin-Hwe Kweon and Jin-Ho Choi
FAILURE BEHAVIOR OF FOAM-BASED SANDWICH JOINTS
UNDER PULL-OUT AND BEARING TESTS

11h40 (Abstract # 47)
Raul D.S.G. Campilho, Arnaldo M.G. Pinto and Mariana D. Banea
NUMERICAL MODELLING OF SINGLE-LAP JOINTS BY COHESIVE ZONE MODELS:
INFLUENCE OF COHESIVE LAW PARAMETERS

12h00 (Abstract # 79)
Haider Al-Zubaidy, Riadh Al-Mahaidi and Xiao-ling Zhao
EXPERIMENTAL INVESTIGATION OF BOND CHARACHERISTICS BETWEEN CFRP FABRICS
AND STEEL PLATE JOINTS UNDER IMPACT TENSILE LOADS

12h20 (Abstract #138)
Yang Hong, Y. X. Zhang and Xiaoshan Lin
STRESS ANALYSES OF COMPOSITE JOINTS AT ELEVATED TEMPERATURE

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 18.2 - Chairs: Raul Campilho, Jin-Ho Choi

16h30 (Abstract #322)
Jorg Feldhusen, Stephanie Dallmeier, Benedikt Gunther and Liliane G. Ngahane Nana
EXPERIMENTAL VALIDATION OF BLIND RIVET JOINING
ELEMENTS FOR SANDWICH PANELS

16h50 (Abstract #357)
P. Colombi and G. Fava
FATIGUE PERFORMANCE OF THE ADHESIVE JOINT IN STEEL/CFRP TENSILE MEMBERS

17h10 (Abstract #439)
Carolina Mattedi Co, Guilherme Chagas Cordeiro and Janine Domingos Vieira
PHYSICAL AND MECHANICAL BEHAVIOR OF PULTRUDED GFRP
SINGLE-BOLT TENSION JOINTS EXPOSED TO DIFFERENT ENVIRONMENTAL CONDITIONS

17h30 (Abstract #474)
Kang-Woo Jeong, Jin-Ha Park, Jin-Ho Choi and Jin-Hwe Kweon
A STUDY ON THE FAILURE MECHANISM AND STRENGTH EVALUATION OF
THE MECHANICAL KEY JOINT

17h50 (Abstract #475)
Mun-Gyu Jeong , Hyeon-Jeong Yang, Jin-Hwe Kweon and Jin-Ho Choi
STRENGTH OF CARBON-EPOXY BONDED JOINTS WITH VARIOUS MOISTURE CONTENTS AND ENVIRONMENTS

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 18.3 - Chairs: Raul Campilho, Jin-Hwe Kweon

11h00 (Abstract #479)
Yong-Bin Park, In-Hun Kim, Bae-Hyun Choi, Ik-Hyeon Choi, Jin-Hwe Kweon and Jin-Ho Choi
STRENGTH OF COMPOSITE BONDED JOINTS TRANSVERSELY REINFORCED BY CARBON PINS

11h20 (Abstract #581)
Maria V. Fernandez, Marcelo F. S. F. de Moura, Lucas F. M. da Silva, Antonio T. Marques
CHARACTERIZATION OF COMPOSITE BONDED JOINTS UNDER PURE MODE II FATIGUE LOADING

11h40 (Abstract #749)
J.Renart, J.Costa, A.Turon, S.Mahdi and A.Rodriguez-Bellido
EFFECT OF THE MOISTURE CONTENT OF THE ADHERENTS ON THE FATIGUE BEHAVIOUR OF COMPOSITE BONDED JOINTS

12h00 (Abstract #745)
Werner A. Hufenbach, Frank Adam, Robert Kupfer, Martin Dannemann, Martin Pohl
INVESTIGATION OF THE LONG-TERM BEHAVIOUR OF BOLTED JOINTS IN TEXTILE THERMOPLASTIC COMPOSITES

12h20 (Abstract #701)
I. Singh, H. Singh, A. Dvivedi, P. Kumar
TENSILE AND COMPRESSIVE BEHAVIOR OF COMPOSITE JOINTS: EXPERIMENTAL AND FINITE ELEMENT STUDY

12h40 **(Lunch)**

19. Delamination and debonding in composite structures

Session Organizers: Jiye Chen

(Jiye.Chen@port.ac.uk)

Room: B029

Date: 29 June 2011

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 19.1 - Chairs: Jiye Chen, L. Gornet

16h30 (Abstract # 93)
Philipp Weissgraeber and W. Becker
EFFECTIVE STRENGTH PREDICTION OF BONDED LAP JOINTS
USING FINITE FRACTURE MECHANICS

16h50 (Abstract # 40)
Jiye Chen
PREDICTION OF MULTI-DELAMINATION OF COMPOSITE T-PIECE SPECIMEN UNDER
MIXED LOADING CONDITIONS

17h10 (Abstract # 42)
Chao Wu, Xiao-Ling Zhao, Riadh Al-Mahaidi and Wenhui Duan
FATIGUE BEHAVIOUR OF CRACKED STEEL PLATES
REINFORCED WITH UHM CFRP LAMINATE

17h30 (Abstract # 74)
Shokrieh M.M., Heidari-Rarani M. and Ayatollahi M.R.
AN ANALYTICAL MODEL TO PREDICTION OF INTERLAMINAR
FRACTURE TOUGHNESS IN LAMINATED COMPOSITES

17h50 (Abstract # 3)
M. Jin
Mode-I Crack Control by SMA Fiber with a Special Configuration

18h10 (Abstract #106)
Francesca Campi and Ilaria Monetto
NUMERICAL SOLUTIONS OF THREE-LAYER BEAMS WITH INTERLAYER SLIP AND
MULTI-LINEAR INTERFACE LAW

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

Date: 30 June 2011

Session 19.2 - Chairs: Jiye Chen, Vincent Monchiet

08h20 (Abstract #706)
Burak Gozluklu and Demirkan Coker
MODELING OF THE DYNAMIC DELAMINATION BEHAVIOR OF
L-SHAPED COMPOSITE LAMINATE BEAMS

08h40 (Abstract #132)
J. Bonhomme, V. Mollon, A. Arguelles, J. Viña
Influence of the crack plane assymetry
over G_{II} results in carbon-epoxy ENF specimens

09h00 (Abstract #190)
L.M.P. Durão, Daniel J. S. Goncalves, João Manuel R. S. Tavares, Victor Hugo C. de Albuquerque, A. Aguiar Vieira, Antonio Monteiro Baptista
DRILLING DELAMINATION STUDY ON CARBON REINFORCED LAMINATES - TOOL AND FEED RATE EFFECTS

09h20 (Abstract #198)
P. Coronado, A. Arguelles, J. Viña and A. F. Canteli
INFLUENCE OF TEMPERATURE ON MODE I DELAMINATION IN A CARBON-FIBER EPOXY COMPOSITE UNDER STATIC AND FATIGUE LOADING

09h40 (Abstract #397)
Maria Candida Magalhaes de Faria, Pedro Carlos de Oliveira, Edson Cocchieri Botelho
INFLUENCE OF TEMPERATURE ON THE INTERFACIAL PROPERTIES OF CARBON FIBER/PPS LAMINATES

10h00 (Abstract #151)
Rui-xiang Bai, Liang Wang, Cheng Yan,Hao-ran Chen
VISCOELASTIC BEHAVIOR OF INTERFACIAL DELAMINATION FRACTURE FOR PIEZOELECTRIC LAMINATED PLATES

10h30 **(Coffee-Break)**

Session 19.3 - Chairs: L. Gornet, Jiye Chen

11h00 (Abstract #324)
Akin Atas, Constantinos Soutis
EFFECT OF THE CLAMPING TORQUE ON THE INTERLAMINAR CRACKING AROUND A BOLT HOLE IN A CFRP PLATE SUBJECTED TO INPLANE TENSILE LOADING

11h20 (Abstract #321)
E. Ahci-Ezgi, H. Konig and M. Schulz
ANALYSIS AND SIMULATION OF DAMAGE IN FIBER REINFORCED BOLTED JOINTS

11h40 (Abstract #395)
C. Santiuste, X. Soldani and M.H.Miguelez
NUMERICAL MODELING OF DELAMINATION DURING MACHINING OF LFRP COMPOSITES

12h00 (Abstract #351)
L. Ma, Z.-Y. Wang and L.-Z. Wu
THE INTERACTION BETWEEN CRACKS AND PARTICLES IN REINFORCED COMPOSITE MATERIALS

12h20 (Abstract #360)
R.Palazzetti, A.Zucchelli, C.Gulandi, M.L.Focarete, L.Donati, G. Minak, and S. Ramakrishna
Study of the delamination behaviour of epoxy matrix composite laminates reinforced with electrospun polymer nanofibres

12h40 **(Lunch)**

Session 19.4 - Chairs: L. Gornet, Vincent Monchiet

14h00 (Abstract #709)
Amilcar Quispitupa, Christian Berggreen, Marcello Manca, Leif A. Carlsson
MIXED MODE FACE/CORE INTERFACE FATIGUE CRACK PROPAGATION IN SANDWICH COMPOSITES

14h20 (Abstract #433)
V. Monchiet, G. Bonnet
Interface models for viscoplastic composites

14h40 (Abstract #495)
L. Gornet, H. Ijaz and Pubudu Sampath Ranaweera
PREDICTION OF DELAMINATION UNDER QUASI-STATIC AND FATIGUE LOADINGS WITH LOCAL AND NON-LOCAL DAMAGE EVOLUTION LAWS

15h00 (Abstract #710)

Ramin Moslemian, Christian Berggreen

A NUMERICAL AND EXPERIMENTAL STUDY OF FACE/CORE INTERFACE FATIGUE CRACK GROWTH IN A SANDWICH BEAM

15h20 (Abstract #410)

Fabio C. da Rocha, Wilson S. Venturini, and Humberto B. Coda

REINFORCED DOMAINS ANALYSIS THROUGH BOUNDARY ELEMENT METHOD AND FINITE ELEMENT METHOD COMBINATION CONSIDERING BOND-SLIP MODEL

15h40 (Abstract #426)

A. Chiminelli, B. Garcia, M. Lizaranzu, M.A. Jimenez

NUMERICAL MODELLING OF DELAMINATION AND FIBER-BRIDGING IN COMPOSITE MATERIALS

16h00 **(Coffee-Break)**

20. Impact and fatigue in composites

Session Organizers: John Botsis

(john.botsis@epfl.ch)

Room: B030

Date: 28 June 2011

09h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 20.1 - Chairs: John Botsis

11h00 (Abstract #112)
Volnei Tita, Ricardo Afonso Angelico, Marcelo Leite Ribeiro and Dirk Vandepitte
NUMERICAL AND EXPERIMENTAL ANALYSES OF LOW VELOCITY IMPACT ON THIN COMPOSITE LAMINATES

11h20 (Abstract #308)
C. Colombo, L. Vergani and M. Burman
STATIC AND FATIGUE CHARACTERIZATION OF BASALT FIBRE REINFORCED COMPOSITES

11h40 (Abstract #137)
Sen Liang, Y.X. Zhang
IMPACT PERFORMANCE OF EMBEDDED AND CO-CURED COMPOSITE DAMPING PANELS

12h00 (Abstract #141)
Giancarlo Caprino, Valentina Lopresto, Claudio Leone
AN INDEX FOR THE INDENTATION SENSITIVITY OF COMPOSITE LAMINATES

12h20 (Abstract #155)
Franziska Regel, Ferrie W.J. van Hattum and Gustavo R. Dias
IMPROVED CRUSHING BEHAVIOUR OF GFRP BOX-BEAM STRUCTURES UNDER LATERAL LOADING

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 20.2 - Chairs: Chiara Colombo, Laura Vergani

16h30 (Abstract #178)
Markus Wolfahrt, Swen Zaremba, Tjark von Reden and Gerald Pinter
EFFECT OF THE PROCESS PARAMETER YARN WIDTH ON THE MECHANICAL AND FATIGUE BEHAVIOUR OF BRAIDED COMPOSITE MATERIALS

16h50 (Abstract #621)
Jeannot Frieden, Joel Cugnoni, John Botsis and Thomas Gmur
LOW-VELOCITY IMPACT DAMAGE IDENTIFICATION IN CFRP PLATES U
SING INVERSE NUMERICAL-EXPERIMENTAL OPTIMIZATION

17h10 (Abstract #285)
C. Menna, D. Asprone, G. Caprino, V. Lopresto, and A. Prota
NUMERICAL SIMULATIONS OF LOW VELOCITY IMPACT TESTS ON GFRP COMPOSITE LAMINATES

17h30 (Abstract #286)
C. Menna, A. Zinno, D. Asprone, and A. Prota
FINITE ELEMENT MODELING OF IMPACT BEHAVIOR OF PHENOLIC SANDWICH STRUCTURES

17h50 (Abstract #174)
Kwek-Tze Tan, Naoyuki Watanabe, Yutaka Iwahori and Takashi Ishikawa
INFLUENCE OF STITCH DENSITY AND STITCH THREAD THICKNESS ON COMPRESSION AFTER IMPACT STRENGTH OF STITCHED COMPOSITES

18h10 (Abstract #341)
Jian Xiong, Li Ma, Linzhi Wu, Ashkan Vaziri, Sha Yin
QUASI STATIC COMPRESSION AND LOW-VELOCITY IMPACT RESPONSE OF CARBON FIBER SANDWICH PANELS WITH 8-TRUSS KAGOME CORES

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 20.3 - Chairs: Carlos Santiuste

11h00 (Abstract #315)
Ines Ivanez, Carlos Santiuste, Sonia Sanchez-Saez
Numerical modelling of low-velocity impact on honeycomb cored sandwich beams with composite face-sheets

11h20 (Abstract #685)
Tim B. Block, Johannes Prescher and Axel S. Herrmann
INVESTIGATION OF THE IMPACT BEHAVIOR OF COMPOSITE SANDWICH STRUCTURES REINFORCED BY LONGITUDINAL PROFILES

11h40 (Abstract #382)
Shirley K. Garcia-Castillo, Carlos Santiuste, Sonia Sanchez-Saez and Enrique Barbero
IMPACT ON TUBULAR COMPOSITE STRUCTURES

12h00 (Abstract #399)
Myriam Kaminski and Christos Kassapoglou
FAILURE OF COMPOSITE LAMINATES UNDER CYCLIC LOADS

12h20 (Abstract #366)
Yakov B. Unigovski, Ariel Grinberg, Emmanuel M. Gutman, Roni Shneck
THE EFFECT OF THERMAL CYCLING ON LOW-CYCLE FATIGUE BEHAVIOR OF A CARBON-EPOXY COMPOSITE

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 20.4 - Chairs: Carlos Santiuste, Joel Cugnoni

16h30 (Abstract #461)
C. Garnier, ML. Pastor and B. Lorrain
FINITE ELEMENT MODEL FOR IMPACT ON COMPOSITE STRUCTURES

16h50 (Abstract #533)
P. Santos, P.N.B. Reis, J.A.M. Ferreira, M.O.W. Richardson and B.C.H. Richardson
IMPACT RESPONSE OF KEVLAR COMPOSITES WITH FILLED EPOXY MATRIX

17h10 (Abstract #549)
M. Gude, W. Hufenbach, I. Koch and R. Protz
CHARACTERISATION AND MODELLING OF THE MEAN STRESS EFFECT ON TEXTILE-REINFORCED COMPOSITES UNDER TENSION-COMPRESSION FATIGUE LOADING

17h30 (Abstract #779)
H. N. Dhakal, Z. Y. Zhang, N. Bennett
Impact resistance behaviour of hemp fibre reinforced polymer composites: Effect of tup geometry

17h50 (Abstract #496)
Igor V. Pavelko, Maxim P. Smolyaninov and Sergey V. Kuznecov
IMPACT DAMAGES OF COMPOSITE MATERIAL AND
STUDY OF THEIR EFFECT ON THE RESIDUAL STRENGTH OF CONSTRUCTIONS

18h10 (Abstract #342)
Sha Yin, Linzhi Wu, Li Ma, Jian Xiong
CARBON FIBER COMPOSITE PYRAMIDAL LATTICE STRUCTURE WITH WOOD-CORE TRUSSES

18h30 (Abstract #420)
Kiran Kumar Namala, Puneet Mahajan, Naresh Bhatnagar
EXPERIMENTAL DETERMINATION OF MECHANICAL PROPERTIES
OF UNIDIRECTIONAL LAMINATES AND SIMULATION OF IMPACT OF LAMINATES

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

21. Dynamics of Composite Materials

Session Organizers: Joseph Morlier, Philippe Viot

(joseph.morlier@isae.fr, philippe.viot@lamef.bordeaux.ensam.fr)

Room: B029

Date: 30 June 2011

Session 21.1 - Chairs: Joseph Morlier

16h30 (Abstract # 66)
Jose Gonilha, Ana Aquino, Joao R. Correia, Fernando A. Branco and Joaquim Barros
EVALUATION OF THE DYNAMIC BEHAVIOUR OF A GFRP-SFRSCC HYBRID FOOTBRIDGE

16h50 (Abstract #124)
Guoyan Wang
A STUDY OF FLEXURAL-FLEXURAL-TORSIONAL COUPLED VIBRATIONS OF COMPOSITE EULER-BERNOULLI BEAMS WITH BI-ASYMMETRIC CROSS SECTIONS

17h10 (Abstract #185)
H. R. Ovesy, J. Fazilati
Buckling and free vibration finite strip analysis of composite plate with cutout based on two different modelling approaches

17h30 (Abstract #413)
Seckin Filiz and Metin Aydogdu
VIBRATION OF BI-MATERIAL TIMOSHENKO BEAMS

17h50 (Abstract #414)
Metin Aydogdu and Seckin Filiz
VIBRATION ANALYSIS OF SYMMETRIC LAMINATED COMPOSITE PLATES WITH ATTACHED MASS

18h10 (Abstract #126)
S. M. Ghoneam, A. A. Hamada and M. I. EL-Elamy
DYNAMIC ANALYSIS OF A ROTATING COMPOSITE SHAFT

18h30 (Abstract #215)
Alireza Shooshtari, Mohammad Homayoun Sadr, Hadi Ghashochi Bargh, Soheil Razavi
NONLINEAR FREE AND FORCED VIBRATIONS OF SYMMETRIC LAMINATED PANELS

22. Health Monitoring Techniques in Composite Structures

Session Organizers: Jyoti K. Sinha

(Jyoti.Sinha@manchester.ac.uk)

Room: B028

Date: 29 June 2011

Session 22.1 - Chairs: Jyoti K. Sinha

16h30 (Abstract # 72)
Israr Ullah, Jyoti K. Sinha
VIBRATION BASED METHOD TO DETECT DELAMINATION IN COMPOSITE

16h50 (Abstract #168)
Zhifang Zhang, Krishna Shankar, Murat Tahtali, Evgeny V. Morozov
VIBRATION BASED DELAMINATION DETECTION OF COMPOSITE STRUCTURES

17h10 (Abstract #181)
Hui-Yun Hwang
FINITE ELEMENT ANALYSIS FOR THE PIEZOELECTRIC DAMAGE MONITORING OF GLASS FIBER EPOXY COMPOSITE MATERIALS

17h30 (Abstract #274)
Matthieu Gresil, Lucy Yu and Victor Giurgiutiu
FINITE ELEMENT MODELING OF ELECTROMECHANICAL IMPEDANCE FOR DAMAGE DETECTION IN COMPOSITE MATERIALS

17h50 (Abstract #157)
Margarida Fernandes, Joana Catarina Mendes and Dinis M. Santos
SURFACE ACOUSTIC WAVE DEVICES AS PASSIVE, WIRELESS TRANSDUCERS FOR MECHANICAL TESTS

18h10 (Abstract #512)
ZHANJUN WU, DONGYUE GAO, MINJING LIU AND SHUANGQING KONG
A DAMAGE DETECTION SCHEME FOR COMPOSITE STRUCTURES USING GUIDED WAVE PHASE ARRAYS

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

23. Natural Fiber Composites

Session Organizers: Karen Cheung

(khyc2@cam.ac.uk)

Room: B004

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 23.1 - Chairs: Karen Cheung, Alexis Beakou

11h00 (Abstract #391)
Agnes ROUDIER, Alexis BEAKOU and Evelyne TOUSSAINT
MODELLING OF THE HYGRO-MECHANICAL BEHAVIOR OF FLAX FIBERS

11h20 (Abstract # 90)
Gilbert Lebrun, Lotfi Toubal and Luc Laperriere
TENSILE BEHAVIOUR OF UNIDIRECTIONAL COMPOSITES MADE
OF NATURAL FIBERS BACKED TO THIN PAPER LAYERS

11h40 (Abstract # 91)
K. Tanaka, H. Miyabe, T. Katsura, T. Katayama and K. Uno
INFLUENCE OF ANNEALING PROCESS ON CRYSTALLIZATION OF JUTE FABRIC REINFORCED PLA

12h00 (Abstract #213)
Lionel Gilson, Johan Gallant, Luc Rabet, Jan Van Roey, Nicolas Vekony and Jerome Maillet
USE OF FLAX AS A LOW COST PROTECTION AGAINST BLAST AND FRAGMENTS

12h20 (Abstract #167)
Andressa C. Milanese, Maria Odila H. Cioffi and Herman J. C. Voorwald
MECHANICAL BEHAVIOR OF PHENOLIC COMPOSITES:
COMPARISON OF SISAL AND GLASS REINFORCEMENTS

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 23.2 - Chairs: Karen Cheung, Alexis Beakou

16h30 (Abstract #490)
E. Frollini, C. G. Silva, E. C. Ramires, F. Oliveira
BIO-BASED COMPOSITES DERIVED FROM THERMOSET PHENOLIC-TYPE
MATRICES AND LIGNOCELLULOSIC FIBERS

16h50 (Abstract #292)
Ian Fulton, Mohamad S Qatu and Sheldon Shi
MECHANICAL PROPERTIES OF KENAF-BASED NATURAL FIBER COMPOSITES

17h10 (Abstract #379)
Karine Charlet and Alexis Beakou
INTERFACES WITHIN A FLAX FIBRE BASED COMPOSITE: CHARACTERISATION AND MODELISATION

17h30 (Abstract #249)
Robert G. Reid, Oscar M.L. Asumani and Ratnam Paskaramoorthy
THE EFFECT ON THE MECHANICAL PROPERTIES OF KENAF FIBRE REINFORCED POLYPROPYLENE
RESULTING FROM ALKALI-SILANE SURFACE TREATMENT

18h10 (Abstract #343)
Vinay Kumar, Shishir Sinha, Manohar Singh Saini, and B K Kanungo
Studies of Mechanical and Chemical Properties of
Rice Husk Polypropylene (RHPP) Composites

18h30 (Abstract # 11)
B. Kord
Study of thermal and morphological behaviour of HDPE/wheat straw
flour/monmorillonite hybrid composite

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 23.3 - Chairs: Karen Cheung, E. Frollini

11h00 (Abstract #578)
Ezequiel Perez, Lucia Fama, Santiago Garcia P., Maria J. Abad and Celina Bernal
MECHANICAL BEHAVIOUR OF PP/WOODFLOUR COMPOSITES

11h20 (Abstract #113)
Tulio Hallak Panzera, Leandro Jose da Silva, Andre Luis Christoforo,
Vania Regina Velloso Silva and Antonio J. M. Ferreira
NUMERICAL AND EXPERIMENTAL ANALYSES OF POLYMERIC COMPOSITES REINFORCED
WITH NATURAL FIBRES

11h40 (Abstract #722)
A. Bourmaud, A. Le Duigou and C. Baley
TECHNICAL AND ENVIRONMENTAL INTEREST TO REUSE A RECYCLED POLY(PROPYLENE)
ï¿½ HEMP FIBRE COMPOSITE

12h00 (Abstract #465)
Diana Paez, Camila Monroy, Alicia Porras, Alejandro Maranon
CHARACTERIZATION OF CHAMBIRA (CUMARE - ASTROCARYUM CHAMBIRA),
A COLOMBIAN-AMAZONIAN NATURAL FIBER

12h20 (Abstract #668)
Baosheng Ren, Junji Noda and Koichi Goda
RELATION BETWEEN FLUCTUATION IN FIBER ORIENTAION AND TENSILE PROPERTIES
OF GREEN COMPOSITES

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 23.4 - Chairs: Karen Cheung, Koichi Goda

16h30 (Abstract #595)
Jose Daniel Diniz Melo and Luiz Fernando Meneses Carvalho
A BIODEGRADABLE COMPOSITE MATERIAL BASED ON
POLYHYDROXYBUTYRATE (PHB) AND CARNAUBA FIBERS

16h50 (Abstract #675)
U. MEEKUM and Y. MINGMONGKOL
EXPERIMENTAL DESIGN ON LAMINATED VENEER LUMBER FIBER REINFORCED COMPOSITE:
PROCESSING PARAMETERS AND ITS DURABILITY

17h10 (Abstract #669)
Junji Noda, Yujiro Terasaki and Koichi Goda
EFFECT OF VARIATION IN CROSS-SECTIONAL AREA ON TENSILE PEOPERTIES OF NATURAL FIBERS

17h30 (Abstract #678)
Mansur Ahmad, Syaiful Osman
FLEXURAL STRENGTH PROPERTIES AND FAILURE MODE OF
BAMBOO/ALUMINUM SANDWICH COMPOSITE STRUCTURE

17h50 (Abstract #589)
Kamol Dey and Ruhul A. Khan
Study on the Physico-mechanical and Degradation Properties of Gamma Radiated Bamboo Fiber-Reinforced Polypropylene Composites

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

24. Modelling and Characterization of CNT-Polymer Composites

Session Organizers: Mahmood Shokrieh and Constantinos Tserpes

(shokrieh@iust.ac.ir, kit2005@mech.upatras.gr)

Room: B028

Date: 30 June 2011

Session 24.1 - Chairs: Mahmood Shokrieh, Constantinos Tserpes

14h00 (Abstract # 14)
Mahmood M. Shokrieh, R. Rafiee
DEVELOPMENT OF A STOCHASTIC SIMULATION TO PREDICT
ELASTIC PROPERTIES OF CARBON NANOTUBE REINFORCED COMPOSITES

14h20 (Abstract # 65)
Anne-Lise Maillot, Hans Luinge and Karl Schulte
CNT-MODIFIED CARBON-FIBER-REINFORCED COMPOSITES FOR AEROSPACE APPLICATIONS

14h40 (Abstract # 69)
Roham Rafiee, Meghdad Heidarhaei
YOUNG'S MODULUS PREDICTION OF CARBON NANOTUBES USING FULL
NONLINEAR INTERATOMIC POTENTIALS

15h00 (Abstract # 88)
Emmett M. Byrne, Alexis Letertre, Michael A. McCarthy, William A. Curtin and Zhenhai Xia
OPTIMIZING LOAD TRANSFER IN MULTIWALL
NANOTUBES THROUGH INTERWALL COUPLING: THEORY AND SIMULATION

15h20 (Abstract #655)
S. DENNEULIN and P.VIOT
INFLUENCE OF NANOPARTICLES ADDING INTO COMPOSITE MATRIX OVER THE BEHAVIOUR OF THIN PLATE
UNDER A LOW VELOCITY IMPACT.

15h40 (Abstract #201)
Daniel R. Bortz, Cesar Merino and Ignacio Martin-Gullon
BIAXIAL FATIGUE AND CONSTANT LIFE DIAGRAMS OF A CARBON NANOFIBER
BASED-HIERARCHICAL CARBON FIBER/EPOXY BIAXIAL ± 45 LAMINATE

16h00 (Coffee-Break)

Session 24.2 - Chairs: Mahmood Shokrieh, Constantinos Tserpes

16h30 (Abstract #417)
P.N.B. Reis, J.A.M. Ferreira, A.M.S. Pereira and J.D.M. Costa
FRACTURE TOUGHNESS AND WATER UPTAKE OF ENHANCED NANOFILLED EPOXY COMPOSITES

16h50 (Abstract #212)
Masanori Aota, Kimiyoshi Naito and Yasuo Kogo
MECHANICAL PROPERTIEDS OF HIGH MODULUS PITCH-BASED CARBON FIBER
REINFORCED PLASTICS WITH NANOSTRUCTURES

17h10 (Abstract #367)
P. Papanikos, K.I. Tserpes
STIFFESS EVALUATION OF POLYMERS REINFORCED BY SPECIFICALLY OR RADOMLY DISTRIBUTED
CARBON NANOTUBES

17h30 (Abstract #368)
K.I. Tserpes, P. Papanikos and Sp. Pantelakis
NUMERICAL STUDY OF CARBON NANOTUBE-BASED CRACK GROWTH ENHANCEMENT IN POLYMERS

17h50 (Abstract #369)

P. Papanikos, P. Poulin, C. Bartholome, S.K. Kourkoulis and D. Alexopoulos

CHARACTERIZATION of PVA-CNT FIBER'S MECHANICAL BEHAVIOR:
TESTING AND FINITE ELEMENT MODELING

18h10 (Abstract #243)

K. Talukdar and A. K. Mitra

STRENGTH REDUCTION IN THE BUNDLES OF DEFECTIVE SINGLE-WALL CARBON NANOTUBES

25. Probabilistic modeling and reliability of composites

Session Organizers: Marcin Kaminski

(Marcin.Kaminski@p.lodz.pl)

Room: B026

Date: 29 June 2011

Session 25.1 - Chairs: Marcin Kaminski

16h30 (Abstract #224)
Achchhe Lal, and B. N. Singh
STOCHASTIC FAILURE ANALYSIS OF GEOMETRICALLY NONLINEAR LAMINATED COMPOSITE PLATES UNDER COMPRESSIVE LOADING

16h50 (Abstract #727)
M. Kaminski, M. Lesniak
THE IMPACT OF STOCHASTIC AGEING OF FIBER-REINFORCED METALLIC COMPOSITES ON THEIR EFFECTIVE PARAMETERS

17h10 (Abstract #727)
M. Kaminski
STOCHASTIC BOUNDARY ELEMENT METHOD ANALYSIS OF THE INTERFACE DEFECTS IN COMPOSITE MATERIALS

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

26. Composites in Transport Applications

Session Organizers: Mark Robinson

(newrail@newcastle.ac.uk)

Room: B002

Date: 28 June 2011

27. FRP reinforced concrete structures

Session Organizers: Pierluigi Colombi

(colombi@stru.polimi.it)

Room: B034

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 27.1 - Chairs: Pierluigi Colombi

11h00 (Abstract # 43)
V. Carvelli, M.A. Pisani and C. Poggi
HIGH TEMPERATURE EFFECTS ON THE MECHANICAL RESPONSE OF GFRP REINFORCED CONCRETE MEMBERS

11h20 (Abstract # 51)
Bruno Matos, Joao R. Correia
CONCRETE BEAMS REINFORCED WITH GFRP BARS: STRUCTURAL RESPONSE OF HYPERSTATIC BEAMS IN SERVICE AND AT FAILURE

11h40 (Abstract # 25)
Y. SI YOUCEF, M. CHEMROUK, S. AMZIANE
Confinement contribution in the case of buckling instability of high slender reinforced concrete columns

12h00 (Abstract # 44)
H. Akbarzadeh Bengar, S.M. Seyedpoor
Anchorage Device for RC Continuous Beam strengthened with CFRP Laminate

12h20 (Abstract # 45)
S.M. Seyedpoor, Y. Yadolahi, H. Akbarzadeh Bengar
Finite Element Analysis of RC Continuous Beam Strengthened with FRP Laminate

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 27.2 - Chairs: Joao R. Correia

16h30 (Abstract # 54)
Joao P. Firmo, Joao R. Correia, Paulo Franca and S. Cabral-Fonseca
FIRE PROTECTION SYSTEMS FOR REINFORCED CONCRETE BEAMS STRENGTHENED WITH CFRP LAMINATES

16h50 (Abstract # 70)
Christian Dulude, Ehab A. Ahmed and Brahim Benmokrane
DESIGN AND CONSTRUCTION OF A TWO-WAY CONCRETE SLAB PARKING GARAGE REINFORCED WITH GFRP BARS

17h10 (Abstract #109)
Y. L. Wang, Q. D. Hao and J. P. Ou
EXPERIMENTAL INVESTIGATION ON BOND BEHAVIOR BETWEEN GFRP PLATE AND CONCRETE

17h30 (Abstract #110)
Y. L. Wang, Q. D. Hao and J. P. Ou
EXPERIMENTAL INVESTIGATION OF A SMART FRP-CONCRETE COMPOSITE BRIDGE SUPERSTRUCTURE

17h50 (Abstract #118)
Qingduo Hao, Yanlei Wang and Jinping Ou
EFFECT OF REINFORCEMENT RATIO ON FLEXURAL BEHAVIOUR OF CONCRETE BEAMS REINFORCED WITH GFRP/STEEL WIRE COMPOSITE REBARS

18h10 (Abstract #412)
Cristina Barris, Lluis Torres, Marta Baena and Cristina Mias
CONTROL OF STRESSES AND CRACKING OF FRP RC FLEXURAL MEMBERS

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 27.3 - Chairs: Marta Baena, Mariano M. Escobar

11h00 (Abstract #140)
Qian WANG, Yuqing LIU, Jean-Paul LEBET and Weixiang Zhou
STUDY ON HEADED STUDS BEHAVIOR UNDER COMBINED SHEAR AND TENSILE FORCES

11h20 (Abstract #195)
M.Naghipor, J.Vaseghi Amiri, Z.Rahmani
INVESTIGATION OF DUCTILITY AND RESPONSE MODIFICATION FACTOR IN FRAMES EQUIPPED WITH CONCENTRICALLY BRACE(CBF) AND ECCENTRICALLY BRACE(EBF) AND SIDE PLATE CONNECTIONS

11h40 (Abstract #196)
M.Naghipor, J.Vaseghi Amiri, Z.Rahmani
INVESTIGATION OF DUCTILITY AND RESPONSE MODIFICATION FACTOR IN DUAL MOMENT RESISTING FRAMES WITH SIDE PLATE CONNECTIONS

12h00 (Abstract #136)
Amir Khanlou, Mark Holden, Allan Scott, Mofreh Saleh, Gregory MacRae and Stephen Hicks
Fibre and Mesh Concrete Behaviour for Floor and Slab Application

12h20 (Abstract #576)
F. Ceroni, B. Ferracuti, M. Pecce, M. Savoia
DEBONDING LOAD IN MASONRY ELEMENTS EXTERNALLY STRENGTHENED WITH FRP MATERIALS

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 27.4 - Chairs: Marta Baena, Mariano M. Escobar

16h30 (Abstract #211)
J. Li, Y.X. Zhang
EVOLUTION AND CALIBRATION OF NUMERICAL MODEL FOR HYBRID-FIBRE ECC SLAB UNDER DYNAMIC LOADING

16h50 (Abstract #418)
Juan Pablo Morales Arias, Mariano M. Escobar and Analia Vazquez
EVALUATION OF BOND STRENGTH AND DURABILITY PERFORMANCE OF FRP REINFORCING BARS FOR CONCRETE STRUCTURES

17h10 (Abstract #434)
L. Tesser, R. Scotta and R. Vitaliani
COMPOSITE STEEL TRUSS AND CONCRETE BEAMS: MECHANICS AND EXPERIMENTAL TESTS

17h30 (Abstract #281)
Naghipoor. M, Abdollahzade. Gh and Shokri. M
INVESTIGATION OF GUSSET PLATE BEHAVIOR IN FRAMES EQUIPPED WITH DIAGONAL BUCKLING RESTRAINED BRACES

17h50 (Abstract #526)
Hany E. Madkour
THERMO-ELASTOPLASTIC MODELLING FOR CONCRETE STRUCTURES EXPOSED TO HIGH TEMPERATURES

18h10 (Abstract #760)
Jose Ignacio Perez Calero
COMPOSITES IN SPANISH HERITAGE.ANALYSIS AND DESIGNS OF INTERVENTIONS IN HISTORICAL BUILDINGS

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

Date: 30 June 2011

Session 27.5 - Chairs: Marta Baena, , Mariano M. Escobar

09h00 (Abstract #516)
M. Baena, A. Turon, Ll. Torres, C. Barris, and I. Vilanova
CRACKING BEHAVIOUR OF FRP REINFORCED CONCRETE TENSILE MEMBERS

09h20 (Abstract #522)
J. Jurczuk, P. Poneta, A.Muc and A. Stawiarski
DESIGN OF BEAM CROSS-SECTIONS FOR BUILDING CONSTRUCTIONS

09h40 (Abstract #618)
Marika Eik and Heiko Herrmann
MEASURING FIBRE ORIENTATION IN STEEL FIBRE REINFORCED CONCRETE

10h00 (Abstract #517)
N. H. Ramli Sulong, Mahdi Shariati, M. M. Arabnejad. Kh
Behaviour of C Shaped Shear Connectors Embedded in Lightweight Concrete

10h30 **(Coffee-Break)**

Session 27.6 - Chairs: Marika Eik and Heiko Herrmann

11h00 (Abstract #716)
Hugo Biscaia, Manuel A. G. Silva and Carlos Chastre
DEGRADATION OF GFRP-PLATES BONDED TO CONCRETE: AN EXPERIMENTAL APPROACH BASED ON MOHR-COULOMB FAILURE CRITERION

11h20 (Abstract #728)
K.M.A. Sohel, Jia-baoYan, J.Y. Richard Liew, M.H. Zhang and K.S Chia
BEHAVIOR OF STEEL-CONCRETE-STEEL SANDWICH STRUCTURES WITH LIGHTWEIGHT CEMENT COMPOSITE AND NOVEL SHEAR CONNECTORS

11h40 (Abstract #601)
Jesus Ma. Rincon
PRODUCTS AND GLASSCERAMICS PROPOSED AS MATRICES FOR NEW COMPOSITES FOR CONSTRUCTION APPLICATIONS

12h00 (Abstract #554)
M. Sarafraz, F. danesh
FLEXURAL STRENGTHENING OF RC COLUMNS WITH NSM FRP REBARS

12h20 (Abstract #538)
Mohamed N. Mahmood, and Akram S. Mahmoud
TORSIONAL BEHAVIOR OF PRESTRESSED CONCRETE BEAMS STRENGTHENED WITH CFRP SHEETS

12h40 **(Lunch)**

Session 27.7 - Chairs: Jesus Rincon, Julio Davalos

14h00 (Abstract #628)
Heiko Herrmann and Marika Eik
ON THE THEORY OF SHORT FIBRE REINFORCED MATERIALS

14h20 (Abstract #656)
Bernat Csuka, Laszlo P. Kollar
ANALYSIS OF FRP CONFINED COLUMNS UNDER ECCENTRIC LOADING

14h40 (Abstract #667)
Mehdi Rezaei, S.A.Osman, N.E. Shanmugam
PRIMARY AND SECONDARY REINFORCEMENTS IN CORBELS UNDER COMBINED ACTION OF VERTICAL AND HORIZONTAL LOADINGS

15h00 (Abstract #694)
Mehrzad Zahabi, An Chen and Julio F. Davalos
LONG-TERM PREDICTION MODEL FOR INTERFACIAL ENERGY RELEASE RATE OF CRACK PROPAGATION BETWEEN FRP AND CONCRETE UNDER MODE II LOADING CONDITION

15h20 (Abstract #695)
Pengcheng Jiao, An Chen, Julio F. Davalos
COHESIVE ZONE MODEL OF FRP-CONCRETE INTERFACE UNDER THERMAL AND MECHANICAL STRESSES

15h40 (Abstract #673)
R. Abbasnia, J.A. Zakeri , F. Hosseinpour and M. Rostamian
BEHAVIOR OF CONCRETE CIRCULAR SPECIMENS CONFINED WITH FRP UNDER CYCLIC COMPRESSIEVE LOADING

16h00 **(Coffee-Break)**

Session 27.8 - Chairs: Jesus Rincon, Julio Davalos

16h30 (Abstract #767)
M.K. Sharbatdar, M.R. Mohamadian
FLEXURAL BEHAVIOR OF SIMPLE AND FIXED-END BEAMS STRENGTHENED WITH FRP BARS IN NSM METHOD

16h50 (Abstract #770)
M.K. Sharbatdar, A. Kheyroddin, E.Emami
EXPERIMENTAL INVESTIGATION OF COMPOSITE RC- DIAGONAL STEEL PROP JOINTS SUBJECT TO CYCLIC LOAD

17h10 (Abstract #616)
Atul Agarwal and Damodar Maity
EXPERIMENTAL INVESTIGATION ON BEHAVIOUR OF BAMBOO REINFORCED CONCRETE MEMBERS

28. FRP masonry structures

Session Organizers: Roberto Capozucca

(r.capozucca@univpm.it)

Room: B013

Date: 30 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 28.1 - Chairs: Roberto Capozucca

14h00 (Abstract #102)
G. Milani and R. Fedele
FINITE ELEMENT MODEL FOR FRP-FROM-MASONRY DELAMINATION: THREE-DIMENSIONAL EFFECTS AND INTERFACE TRACTION ASSESSMENT

14h20 (Abstract #161)
R. CAPOZUCCA
ANCHORAGE STRENGTH FOR GFRP BONDED TO HISTORIC MASONRY

14h40 (Abstract #223)
G. Tempesta, M. Paradiso and S. Galassi
NON LINEAR ANALYSIS OF FRP REINFORCED MASONRY ARCHES

15h00 (Abstract #529)
A. Caporale, L. Feo, R. Luciano and R. Penna
COLLAPSE LOAD OF MASONRY ARCHES REINFORCED WITH FRP MATERIALS

15h20 (Abstract #407)
I. Carbone, G. de Felice and M. Malena
DELAMINATION OF EXTERNAL BONDED INORGANIC MATRIX COMPOSITES ON CURVED MASONRY SUPPORT

15h40 (Abstract # 26)
G. Giacometti, M. Panizza and M.R. Valluzzi
A DATA WAREHOUSE ON THE STRENGTHENING OF MASONRY STRUCTURES WITH COMPOSITE MATERIALS

16h00 (Coffee-Break)

29. Mechanics of 3D textiles in composites

Session Organizers: Stefan Hallstrom

(stefanha@kth.se)

Room: B032

Date: 29 June 2011

30. Bi-material structures

Session Organizers: Metin AYDOGDU

(metina@trakya.edu.tr)

Room: B032

Date: 29 June 2011

31. Mechanics of biological composite tissues

Session Organizers: Renato Natal Jorge, Marco Parente

(rnatal@fe.up.pt, mparente@fe.up.pt)

Room: B002

Date: 29 June 2011

32. Optimal design of composite structures

Session Organizers: Sarp Adali

(ADALI@ukzn.ac.za)

Room: B031

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 32.1 - Chairs: Sarp Adali

11h00 (Abstract # 84)
H. Toutanji and S. Ueno
OPTIMAL DESIGN OF COMPOSITE STRUCTURES

11h20 (Abstract # 82)
Marco Montemurro, Angela Vincenti, Paolo Vannucci and Ahmed Makradi
CONSTRAINED WEIGHT OPTIMIZATION OF COMPOSITE LAMINATED STRUCTURES

11h40 (Abstract #353)
Helmut Masching, Michael Fischer, Matthias Firl and Kai-Uwe Bletzinger
FINITE ELEMENT BASED PARALLEL STRUCTURAL
OPTIMIZATION OF LIGHTWEIGHT COMPOSITE STRUCTURES

12h00 (Abstract #472)
Ferreira, A. P. C. S., Bonet, G. and Almeida, S. F. M.
COMPOSITE LAMINATE MULTICRITERIA MEMBRANE STIFFNESS MATRIX COMPONENTS OPTIMIZATION

12h20 (Abstract #182)
Tanja Fuehrer, Mircea Calomfirescu
OPTIMIZATION OF COMPOSITE STRUCTURES USING A FIRST FIBRE FAILURE CRITERION

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 32.2 - Chairs: Sarp Adali

16h30 (Abstract #405)
F.-X. Irisarri, M. M. Abdalla and Z. Gurdal
AN IMPROVED SHEPARDS METHOD FOR OPTIMIZATION OF COMPOSITE STRUCTURES

16h50 (Abstract #447)
Jin Woo Lee, Sathya N. Gangadharan and Maj Mirmirani
MULTIDISCIPLINARY DESIGN OPTIMIZATION OF A LARGE SCALE HYBRID COMPOSITE
WIND TURBINE BLADE STRUCTURE

17h10 (Abstract #518)
A. Muc
STRUCTURAL SHAPE OPTIMIZATION PROBLEMS FOR COMPOSITE PLATES AND SHELLS

17h30 (Abstract #519)
A. Muc and A. Ulatowska
LOCAL FIBRE REINFORCEMENT OF HOLES IN COMPOSITE MULTILAYERED PLATES

17h50 (Abstract #520)
P. Kedziora and A. Muc
OPTIMAL SHAPES OF PZT ACTUATORS FOR PLATES SUBJECTED TO DISPLACEMENT
OR EIGENFREQUENCY CONSTRAINTS

18h10 (Abstract #229)

Lina Girdauskaite, Sybille Krzywinski, and Hartmut Rodel

LOCAL STRUCTURE FIXING IN THE PROCESSING CHAIN OF DRY PREFORMS: THE CASE OF DOUBLE-CURVED COMPOSITE PARTS

18h30 (Abstract # 10)

Manoochehr Yazdani Rad, Meghdad Karbalaie Jafar

Optimizing the Impact Resistance of Matrix-free Dyneema Fiber-Reinforced Composites

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

33. Cement-based composites

Session Organizers: Jong-Pil Won

(jpwon111@msn.com)

Room: B031

Date: 30 June 2011

Session 33.1 - Chairs: Jong-Pil Won

08h40 (Abstract #431)
G. Melian, G. Barluenga, F. Hernandez-Olivares, and N. Flores
INNOVATIVE PROPOSALS OF TOUGHENED FIBER REINFORCED SELF COMPACTING POZZOLANIC CONCRETE FOR STRUCTURAL APPLICACIONS

09h00 (Abstract #344)
Deesy G. Pinto, Abilio P. Silva, Tessaleno C. Devezas and Ana M. Segadães
INFLUENCE OF ALUMINATE CEMENT ON HMoR BEHAVIOR OF REFRACTORY COMPOSITES

09h20 (Abstract #580)
Chang Lin, Obada Kayali, Evgeny V. Morozov and David J. Sharp
INTEGRATED PLAIN AND SLURRY INFILTRATED FIBRE CONCRETE (IP-SIFCON) COMPOSITE BEAMS

09h40 (Abstract #273)
N. Flores, G. Barluenga , F. Hernandez-Olivares, G. Melian
CRACKING AND PERMEABILITY BEHAVIOUR OF NATURAL POZZOLAN CEMENT CONCRETES WITH PP FIBERS AND SILICA FUME

10h00 (Abstract #173)
Gisela A. M. Brasileiro, Sandro Griza and Ledjane S. Barreto
EFFECTS OF CHEMICAL TREATMENTS ON MECHANICAL AND PHYSICAL PROPERTIES OF COIR PITH-CEMENT GREEN COMPOSITES

10h30 **(Coffee-Break)**

Session 33.2 - Chairs: Jong-Pil Won

11h00 (Abstract #587)
Byung-Tak Hong, Tei-Joon Choi, Jae-Wan Lee, Su-Jin Lee, Soo-Hwan Kim, and Jong-Pil Won
FLEXURAL BEHAVIOR OF MICRO-STEEL-FIBER-REINFORCED CEMENT COMPOSITES

11h20 (Abstract #287)
Yining Ding, Xiliang Ning, Juan Li and Fernando Pacheco-Torgal
INVESTIGATION OF THE EFFECT OF FIBERS ON BOND PROPERTIES BETWEEN SELF-CONSOLIDATING CONCRETE AND GFRP REBARS

11h40 (Abstract #288)
Yining Ding, Fasheng Zhang and Said Jalali
INVESTIGATION ON SHEAR BEHAVIOR OF SFRSCC BEAMS BASED ON THE MCFT

12h00 (Abstract #289)
J. Kers, A. Aruniit, D. Goljandin, K. Tall, J. Majak, H. Herranen and M. Pohlak
MODELLING OF NEW LIGHTER DISCRETE FILLED COMPOSITE MATERIAL IN BASIS OF RECOVERED GFRP POWDER

12h20 (Abstract #310)
Joo-Ha Lee, Yu-Shin Sohn, Seung-Hoon Lee, and Jong-Pil Won
EXPERIMENTAL STUDY ON BEHAVIOR OF HYBRID FIBER-REINFORCED CEMENT-BASED COMPOSITES SUBJECTED TO FIRE

12h40 **(Lunch)**

Session 33.3 - Chairs: Jong-Pil Won

14h00 (Abstract # 30)
G. Promis, A. Gabor and P. Hamelin
EXPERIMENTAL ANALYSIS OF PRE-STRESSED BEAMS IN TEXTILE REINFORCED MINERAL MATRIX COMPOSITES AND CONFINED BY BRAIDING TECHNOLOGY

14h20 (Abstract #588)
Yi-Na Yoon, Byung-Tak Hong, Bo-Ra Choi, Ji-Sun Han and Jong-Pil Won
DURABILITY OF NANO-GFRP COMPOSITE REINFORCING BARS FOR CONCRETE STRUCTURES IN MOIST AND ALKALINE ENVIRONMENTS

14h40 (Abstract #480)
Paulo R. L. Lima and Romildo D. Toledo Filho
SINGLE AND MULTIPLE CRACKING OF SISAL FIBER REINFORCED CEMENT-BASED LAMINATES

16h00 **(Coffee-Break)**

34. Durability of composite materials

Session Organizers: Antonio Torres Marques, Rui Miranda Guedes

(marques@fe.up.pt, rmguedes@fe.up.pt)

Room: B031

Date: 30 June 2011

Session 34.1 - Chairs: Antonio Torres Marques, Rui Miranda Guedes

16h30 (Abstract #209)
Mari Malmstein, James I. R. Blake, Alan R. Chambers
ADOPTING SUSTAINABLE COMPOSITE MATERIALS FOR STRUCTURAL MARINE APPLICATIONS

16h50 (Abstract #251)
Hossein Ramezani Dana, Annick Perronnet, Sylvain Freour, Pascal Casari, Frederic Jacquemin
IDENTIFICATION OF MOISTURE DIFFUSION PARAMETERS IN ORGANIC MATRIX COMPOSITES

17h10 (Abstract #352)
M. Gigliotti, M. Minervino, J.C. Grandididier and M.C. Lafarie-Frenot
THE EMPLOYMENT OF 0/90 UNSYMMETRIC PLATES FOR THE CHARACTERISATION OF THERMO-OXIDATION PHENOMENA IN COMPOSITE MATERIALS AND STRUCTURES

17h30 (Abstract #372)
M.A. Cantera, J.M. Romera, I Adarraga and F Mujika
INFLUENCE OF ASPECT RATIO ON CURVATURES IN LAMINATED COMPOSITES $[90/-\theta/-\theta]^T$ DUE TO HYGROTHERMAL EFFECTS

17h50 (Abstract #295)
Ehab Hamed
VISCOELASTIC MODELLING AND ANALYSIS OF SANDWICH BEAMS UNDER SUSTAINED LOADING

18h10 (Abstract #635)
Jeongsik Kim, Luciana Arronche, Anais Farrugia, Anastasia Muliana and Valeria La Saponara
TIME DEPENDENT RESPONSE OF SMART SANDWICH COMPOSITES

18h30 (Abstract # 73)
Abozar Akbarivakilabadi, Azman Hassan and Amin Askarizadeh
EFFECT OF EPOXIDIZED NATURAL RUBBER (ENR-50) ON DEGRADATION AND WATER ABSORPTION BEHAVIOR OF POLYLACTID/TALC COMPOSITE

35. Hybrid PMC-Metal Structures and Material

Session Organizers: Joachim Hausmann, Claudio Dalle Donne

(Joachim.Hausmann@dlr.de, Claudio.DalleDonne@eads.net)

Room: B035

Date: 28 June 2011

09h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 35.1 - Chairs: Joachim Hausmann, Claudio Dalle Donne

11h00 (Abstract #241)
A.C. Nogueira, K. Drechsler, E. Hombergsmeier, D. Furfari and M. Pacchione
INVESTIGATION OF A HYBRID 3D-REINFORCED JOINING TECHNOLOGY FOR LIGHTWEIGHT STRUCTURES

11h20 (Abstract #278)
M. Kanerva and O. Saarela
NEAR INTERFACE RESIDUAL AND SURFACE STRESS MEASUREMENTS IN STEEL-EPOXY HYBRIDS

11h40 (Abstract #299)
Calvin D. Rans, Rene C. Alderliesten and Rinze Benedictus
BEHAVIOUR OF HYBRID METALLIC-COMPOSITE STRUCTURES:
LESSONS LEARNT FROM FIBRE METAL LAMINATES

12h00 (Abstract # 57)
Abeysinghe C.M., Thambiratnam D.P. and Perera N.J.
INVESTIGATION OF POLYURETHANE, GLASS GLASS FIBRE REINFORCED CEMENT AND
STEEL LAMINATE HYBRID FOR STRUCTURAL FLOOR PLATE SYSTEMS

12h20 (Abstract #216)
Alireza Shooshtari, Soheil Razavi
Stability and bifurcation analysis of symmetric laminated composite and
fiber metal laminated plates in steady-state motion

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 35.2 - Chairs: Joachim Hausmann, Claudio Dalle Donne

16h30 (Abstract #300)
A. Fink, B. Kolesnikov, D. Stefaniak, Ch. Huhne
LOCAL CFRP/METAL HYBRID MATERIAL IMPROVING COMPOSITE BOLTED JOINTS

16h50 (Abstract #301)
D. Stefaniak, A. Fink, B. Kolesnikov and Ch. Huhne
IMPROVING THE MECHANICAL PERFORMANCE OF CFRP BY METAL-HYBRIDIZATION

17h10 (Abstract #333)
C. Lauter, J. Dau, T. Troester, W. Homberg
MANUFACTURING PROCESSES FOR AUTOMOTIVE STRUCTURES IN MULTI-MATERIAL DESIGN
CONSISTING OF SHEET METAL AND CFRP PREPREGS

17h30 (Abstract #350)
Anna Lang, Patrick Schiebel, Axel S. Herrmann and Kai Schimanski
FRACTURE BEHAVIOUR OF SINGLE CARBONFIBRE-TITANIUM LOOPS FOR
NOVEL FRP-ALUMINIUM COMPOUNDS

17h50 (Abstract #298)
Sergio T. Amancio-Filho, Jorge F. dos Santos
CURRENT ADVANCES IN FRICTION-BASED JOINING OF POLYMER-METAL HYBRID STRUCTURES

18h10 (Abstract #331)
Seong-Hwan Yoo, Seok-won Park and Seung-Hwan Chang
THE DESIGN AND FABRICATION OF A COMPOSITE-ALUMINUM HYBRID VEHICLE WHEEL

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 35.3 - Chairs: Joachim Hausmann, Claudio Dalle Donne

11h00 (Abstract #356)
Pierluigi Colombi and Massimiliano Bocciarelli
PLASTIC DESIGN OF STEEL ELEMENTS REINFORCED BY CFRP STRIPS

11h20 (Abstract #763)
Olga A. Sokolova, Adele Carrado, Heinz Palkowski
Metal-polymer-metal sandwich with local metal reinforcements: a study on formability using the deep drawing and bending process

11h40 (Abstract #559)
Nestler, D.; Steger, H.; Nendel, S.; Troltzsch, J.; Kroll, L.; Wielage, B.
CAPAAL - a new hybrid laminate of aluminium alloy foils and carbon-fibre-reinforced thermoplastic layers

12h00 (Abstract #562)
Karola Schulze, Joachim Hausmann and Bernhard Wielage
ON THE BONDING STRENGTH DEGRADATION BY HUMIDITY OF DIFFERENT TITANIUM-PEEK INTERFACES

12h20 (Abstract #563)
R. A. Sanguinetti Ferreira, Y. Prasad Yadava, J. M. Quenisset, C. Arvieu
MECHANISM OF MATRIX CONSOLIDATION IN 1D-TI/SIC/C COMPOSITES PRODUCED BY CONTINUOUS BINDER-POWDER COATING

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

36. Non-destructive Inspection Techniques for Composite Materials and Structures

Session Organizers: João Manuel R. S. Tavares, Luis Miguel P. Durão, João Marcos A. Rebello

(tavares@fe.up.pt, lmd@eu.ipp.pt, jmarcos@metalmat.ufrj.br)

Room: B014

Date: 28 June 2011

09h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 36.1 - Chairs: João Manuel R. S. Tavares, Luis Miguel P. Durão

11h00 (Abstract # 81)
Waldemar Swiderski
NONDESTRUCTIVE TESTING OF COMPOSITE STRUCTURES BY INFRARED THERMOGRAPHY METHODS

11h20 (Abstract # 83)
Jawdat M. Tashan and Riadh Al-Mahaidi
INVESTIGATION OF THE PARAMETERS THAT INFLUENCE THE ACCURACY OF BOND DEFFECT DETECTION IN CFRP BONDED SPECIMENS USING IR THERMOGRAPHY

11h40 (Abstract #100)
Anthony Sexton, Wesley Cantwell, and Shankar Kalyanasundaram
STRETCH FORMING STUDIES ON A FIBRE METAL LAMINATE BASED ON A SELF-REINFORCED POLYPROPYLENE COMPOSITE

12h00 (Abstract #156)
Lovre Krstulovic-Opara, Branko Klarin, Endri Garafulic and Zeljko Domazet
THE APPLICATION OF PULSE HEATING INFRARED THERMOGRAPHY TO THE WIND TURBINE BLADE ANALYSIS

12h20 (Abstract # 77)
M. Benantar, M.A. Belouchrani, Y. Saadouni and M. Mekadem
THERMOGRAPHY BASED ASSESSMENT OF THERMAL PREDEGRADATION OF CARBON/EPOXY COMPOSITES

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 36.2 - Chairs: João Manuel R. S. Tavares, Luis Miguel P. Durão

16h30 (Abstract #176)
Sudharshan Venkatesan, Shankar Kalyanasundaram
STAMP FORMING OF POLYPROPYLENE HOMOCOMPOSITES FROM PRE-CONSOLIDATED SHEETS

16h50 (Abstract #203)
Amol M Khatkhate, Luis Reis, Fernando Oliveira
USING AGGLOMERATIVE CLUSTERING TECHNIQUES FOR RESOLVING ISSUES IN MEASUREMENTS FROM FIBER BRAGG GRATING (FBG) SENSORS UNDER STATIC LOADS

17h10 (Abstract #221)
Mirko Schade, Andre Matthes and Chokri Cherif
INTEGRATED TEXTILE BASED SENSOR NETWORKS FOR NONDESTRUCTIVE STRUCTURE MONITORING OF FILAMENT REINFORCED COMPOSITES

17h30 (Abstract #222)
M. Carboni, D. Crivelli, M. Giglio, M. Guagliano, A. Manes and F. Rossi
A COMPARATIVE INVESTIGATION OF ACOUSTIC EMISSION AND INFRARED THERMOGRAPHY DURING STATIC TENSILE TESTS OF CFRP TEXTILE LAMINATES

17h50 (Abstract #230)
G.M. Revel, G. Pandarese, A. Cavuto, E.P. Tomasini
NDT ANALYSIS FOR INSPECTION OF CURVED COMPOSITE COMPONENTS FOR CIVIL APPLICATIONS

18h10 (Abstract # 78)
M. Benantar, M.A. Belouchrani, A. Labed and S. Benmedakhene
AUTOMATIC DETECTION AND CLASSIFICATION OF DAMAGE MECHANISMS IN GLASS FIBERS/ EPOXY COMPOSITE USING ACOUSTIC EMISSION ANALYSIS

18h30 (Abstract #785)
Elen Ap. M. Morales, Francisco A. Rocco Lahr, Maria F. do Nascimento and Adriano W. Ballarin
STUDY OF BRAZILIAN COMMERCIAL OSB (ORIENTED STRAND BOARD) PANELS USING STRESS WAVE

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 36.3 - Chairs: Paulo Reis, Luis Durao

11h00 (Abstract #232)
Amaro, A.M., Reis, P.N.B., Antunes, F., Santos, J. B.
MECHANICAL PROPERTIES OF COMPOSITE LAMINATES AFTER LOADS: DETERMINATION BY RESONANT TECHNIQUES

11h20 (Abstract #234)
Mauricio Torres, Bernard Douchin, Francis Collombet, Laurent Crouzeix, Yves-Henri Grunevald, Robert Bazer-Bachi, Thierry Camps
STUDY OF THE PARAMETERS VARIABILITY OF MONITORING PATCH USED IN COMPOSITES INSTRUMENTATION

11h40 (Abstract #264)
Philippe Caperan, Martin Poljansek, Eugenio Gutierrez, Stefano Primi, Carlo Palotto
Optical 3 dimensional measurements on a frp beam submitted to its design limit load

12h00 (Abstract #307)
C. Colombo, F. Libonati and L. Vergani
STUDY OF THE MECHANICAL CHARACTERISTICS OF GFRP BY THERMOGRAPHY

12h20 (Abstract #320)
M. Cannio, D. N. Boccaccini, M. Maioli, C. Leonelli, M. Romagnoli
Nondestructive Inspection Techniques for assessment of failure probability and critical flaw length determination of refractory materials

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 36.4 - Chairs: Paulo Reis, Luis Durao

16h30 (Abstract #340)
Stefano Sfarra, Clemente Ibarra-Castanedo, Carlo Santulli, Alfonso Paoletti, Domenica Paoletti, Fabrizio Sarasini, Abdelhakim Bendada, Xavier Maldague
EFFECT OF FIBER REINFORCEMENT ON THE LOW VELOCITY IMPACT BEHAVIOR OF WOVEN FABRIC REINFORCED COMPOSITES: INTEGRATED CONTRIBUTION OF THE THERMOGRAPHIC, INTERFEROMETRIC AND SPECKLE INSPECTIONS

16h50 (Abstract #358)
J. Ilg, S. J. Rupitsch, F. Wolf and R. Lerch
TEMPERATURE MEASUREMENTS BY MEANS OF ELECTRICAL QUANTITIES OF PIEZOCERAMICS IN SMART MATERIALS

17h10 (Abstract #376)
Pieter-Jan Corthouts, Chris Booth, Peter Verschueren
3D NON-DESTRUCTIVE MICRO-CT-BASED FIBER ORIENTATION QUANTIFICATION

17h30 (Abstract #385)
Henrik Schmutzler, Wilfried V. Liebig , Alejandro Garcia , Julia Knoll, Hans Wittich and Karl Schulte
POTENTIAL AND CHALLENGES OF ACTIVE THERMOGRAPHY FOR COMPOSITE PARTS AND STRUCTURES

17h50 (Abstract #386)
Wilfried V. Liebig, Henrik Schmutzler and Karl Schulte
INFLUENCE OF VOIDS ON COMPOSITE LAMINATES WITH VARYING STACKING SEQUENCE

18h10 (Abstract #335)
Franziska Ritschel, Andreas J. Brunner and Peter Niemz
NONDESTRUCTIVE EVALUATON OF DAMAGE ACCUMULATION IN TENSILE TEST SPECIMENS MADE FROM SOLID WOOD, PLYWOOD AND LAMINATED VENEER LUMBER (LVL)

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

Date: 30 June 2011

Session 36.5 - Chairs: Paulo Reis

09h00 (Abstract #463)
R. Brault, A. Germaneau and M. Fazzini and S. Mistou
EVALUATION OF TRANSVERSE SHEAR IN LAMINATED COMPOSITES PLATES BY DIGITAL VOLUME CORRELATION

09h20 (Abstract #551)
Lopes H. M. R. , Araujo dos Santos J.V., Monteiro J. and Ribeiro J.
IMPROVEMENTS IN DAMAGE DETECTION USING MODAL STRAIN FIELDS MEASURED BY DIGITAL SHEAROGRAPHY

09h40 (Abstract #725)
Maria de la Luz Santamaria, Elisabeth Pagnoux-Lacaze, Pedro Arroyo-Perfumo, Jose Maria Gallardo, Fernando A. Lasagni
ULTRASONIC PHASED ARRAY INSPECTION OF CFRP CURVE LAMINATES

10h00 (Abstract #561)
Marcos P. V. Souza, Joao M. A. Rebello, Sergio D. Soares
ULTRASONIC INSPECTION OF ADHESIVE JOINTS ON FIBERGLASS REINFORCED EPOXY PIPES

10h30 **(Coffee-Break)**

Session 36.6 - Chairs: Malcolm McGugan, Luis Durao

11h00 (Abstract #571)
Malcolm McGugan
DEVELOPMENT AND TESTING OF AN ACOUSTO-ULTRASONIC INSPECTION DEVICE FOR CONDITION MONITORING OF WIND TURBINE BLADES

11h20 (Abstract #579)
M. S. Ferreira, J. C. Vieira, C. Frias and O. Frazao
STRAIN AND TEMPERATURE DISCRIMINATION USING FBG SENSORS EMBEDDED IN HYBRID COMPOSITE LAMINATES

11h40 (Abstract #640)
Boguslaw Mroz and Slawomir Mielcarek
BRILLOUIN SPECTROSCOPY AS A TOOL FOR NANO-COMPOSITES DYNAMIC INVESTIGATIONS

12h00 (Abstract #654)
R. de Oliveira, M. Schukar, K. Krebber and V. Michaud
DISTRIBUTED STRAIN MEASUREMENT IN CFRP STRUCTURES BY EMBEDDED OPTICAL FIBRES: INFLUENCE OF THE COATING

12h20 (Abstract #724)
J. S. Dominguez, L. F. de Oliveira, N. Alves Jr , J. T. Asis
3D TOMOGRAPHIC IMAGE RECONSTRUCTION USING CUDA C

12h40 **(Lunch)**

Session 36.7 - Chairs: Luis Durao

14h00 (Abstract #677)
Georg Mair
Fundamental examination of a new concept of safety surveillance and interactive determination of safe service life for composite pressure vessels by destructive tests parallel to operation

14h20 (Abstract #680)
Amadis Zorrilla, Vladislav Mantic, Pelayo Dominguez and Fernando A. Lasagni
DEFECT DETERMINATION OF FIBRE REINFORCED COMPOSITE MATERIALS BY X-RAY COMPUTED TOMOGRAPHY

14h40 (Abstract #634)
Amadis Zorrilla, Miguel Jimenez, Maria de la Luz Santamaria, Pelayo Dominguez, and Fernando A. Lasagni
A COMPARATIVE STUDY FOR DEFECT DETECTION IN CFRP COMPOSITE MATERIALS DETECTION BY ACTIVE THERMOGRAPHY AND US PHASED ARRAY

15h00 (Abstract #720)
J.T. de Assis, J.R. Pessoa, R.L.B. Breder, H.D.L. Alves, I. Lima, G. Carvalho, P.E. Cruvinel, G.J.O. Rodrigues, R.T Lopes
CONCRETE CHARACTERIZATION USING COMPUTED MICROTOMOGRAPHY IMAGES

16h00 **(Coffee-Break)**

37. Composites in Aerospace Applications

Session Organizers: Claudio Lopes, Marco diSciuva, Nuno Correia, Pedro Camanho, Marco Gherlone

(clopes@inegi.up.pt, marco.disciuva@polito.it,nuno.correia@inegi.up.pt, pcamanho@fe.up.pt, marco.gherlone@polito.it)

Room: B035

Date: 30 June 2011

Session 37.1 - Chairs: Claudio Lopes, Marco diSciuva

08h40 (Abstract #547)
M. Vogler, G. Catalanotti , P.P. Camanho, R. Rolfes
A transversely isotropic elastic-viscoplastic constitutive law with a novel 3D failure criterion for modeling carbon-epoxy composites

09h00 (Abstract # 46)
YC Lee, TH Hyde and EJ Williams
EXPERIMENTAL CHARACTERIZATION OF THE TORSIONAL BEHAVIOUR OF TIMMC TUBES

09h20 (Abstract #775)
G. H. Ercin, P. P. Camanho, S. Mahdi, P. Linde
SIZE EFFECTS ON THE TENSILE AND COMPRESSIVE FAILURE OF NOTCHED COMPOSITE LAMINATES

09h40 (Abstract #780)
Frank A. Leone, Carlos G. Davila
APPLICATION OF MIXED-MODE COHESIVE DAMAGE LAWS TO CONTINUUM DAMAGE MECHANICS

10h00 (Abstract # 53)
Markus Kaden, Rudiger Keck and Heinz Voggenreiter
DEVELOPING A REPAIR CONCEPT, USING THE ADVANTAGES OF CARBON FIBRE REINFORCED THERMOPLASTIC

10h30 (Coffee-Break)

Session 37.2 - Chairs: Pedro Camanho, Marco Gherlone

11h00 (Abstract #242)
Michael Bruyneel and Samih Zein
A NEW STRATEGY AVOIDING GAPS AND OVERLAPS IN THE SIMULATION OF FIBER PLACEMENT TRAJECTORIES

11h20 (Abstract #253)
Julien Aubry, Pablo Navarro, Jean-Francois Ferrero, Steven Marguet and Sandrine Lemaire
NUMERICAL STUDY OF THE BEHAVIOUR OF HELICOPTER BLADES SUBMITTED TO IMPACTS AT VARIOUS ANGLES

11h40 (Abstract #279)
A.J. Comer, W.F. Stanley, T.M. Young, P. Ballocchi, A. George
THERMO-MECHANICAL FATIGUE ANALYSIS OF LIQUID SHIM IN MECHANICALY FASTENED HYBRID JOINTS FOR AEROSPACE APPLICATIONS

12h00 (Abstract #432)
Andrew D. Williams, Gregory T. Busch and R. Lee Underwood
DEVELOPMENT OF MULTIFUNCTIONAL COMPOSITE SATELLITE STRUCTURES WITH INTEGRATED FLUID CHANNELS FOR ENHANCED THERMAL CONTROL

12h20 (Abstract #384)
Kitchanon Ruangjirakit and Lorenzo Iannucci
FLEXIBLE COMPOSITE SKIN FOR ADAPTIVE WING APPLICATION

12h40 **(Lunch)**

Session 37.3 - Chairs: Claudio Lopes, Pedro Camanho

14h00 (Abstract #428)
Ilias G. Tapeinos and Nikolaos D. Alexopoulos
TECHNO-ECONOMICAL EVALUATION OF HYBRID COMPOSITE MATERIALS FOR THE AEROSPACE INDUSTRY

14h20 (Abstract #334)
Bruno Martins, Pedro Camanho
MULTISTABLE LAMINATES WITH STEERED FIBERS. A NEW CONCEPT FOR A MORPHING WING

14h40 (Abstract #586)
Claudio S. Lopes, Vanessa Gomes, Francisco Pires, Pedro P. Camanho and Zafer Gurdal
FIBRE STEERING FOR COMPRESSION AND SHEAR LOADED COMPOSITE PANELS WITH CUTOUTS

15h00 (Abstract #597)
Martin H. Nagelsmit, Christos Kassapoglou and Zafer Gurdal
AP-PLY: A NEW FIBRE PLACEMENT ARCHITECTURE FOR IMPROVED DAMAGE TOLERANCE

15h20 (Abstract #398)
J. Diaz, C. Fagiano, M. M. Abdalla and Z. Gurdal
A METHODOLOGY FOR INTERLAMINAR STRESS ANALYSIS OF VARIABLE STIFFNESS COMPOSITE PANELS

15h40 (Abstract #160)
A. Schnabel, C. Greb, C. Jager, M. Linke and T. Gries
ECONOMIC PRODUCTION TECHNOLOGIES FOR TEXTILE REINFORCEMENT STRUCTURES

16h00 **(Coffee-Break)**

38. Composites using renewable materials - characterization and applications

Session Organizers: Arlindo Silva

(arlindo.silva@ist.utl.pt)

Room: B027

Date: 30 June 2011

Session 38.1 - Chairs: Arlindo Silva

14h00 (Abstract #608)
Ana Q. Barbosa, Ricardo Carbas, Lucas da Silva, Mario A. P. Vaz, Juana Abenojar , Juan Carlos del Real
INFLUENCE OF CORK PARTICLES ON THE IMPACT STRENGH OF DHESIVES

14h20 (Abstract #193)
Irene Carvalho, Ricardo Simões, and Arlindo Silva
EMERGENT PROPERTIES IN ENGINEERED SYSTEM?S MASS REDUCTION: HOW ENVIRONMENTALLY FRIENDLY ARE SOLUTIONS BASED ON NATURAL BASED COMPOSITE MATERIALS

14h40 (Abstract #200)
Koronis G., Silva A., and Fontul M.
GREEN COMPOSITES FOR AN ELECTRIC VEHICLE BODY: A REVIEW OF ADEQUATE MATERIALS' COMBINATION

15h00 (Abstract #548)
Bruno Soares, Luis Reis, Luis Sousa
CORK COMPOSITE BEHAVIOR IN BENDING AND COMPRESSION

15h20 (Abstract #259)
Emanuel M. Fernandes, Vitor M. Correlo, Joao F. Mano and Rui L. Reis
INNOVATIVE BIO-BASED COMPOSITES COMPRISING CORK AND BIODEGRADABLE POLYESTER

15h40 (Abstract #613)
A. Garzon and A. Maranon
EFFECT OF AUTOCLAVE MANUFACTURING PARAMETERS ON THE MECHANICAL PROPERTIES OF BIODEGRADABLE CUMARE - PLA COMPOSITES

16h00 **(Coffee-Break)**

39. Eco-design: recycled and green composites

Session Organizers: Silvestre Pinho, Soraia Pimenta, Steve Pickering, Alexander Bismark

(silvestre.pinho@imperial.ac.uk,soraia.pimenta07@imperial.ac.uk, stephen.pickering@nottingham.ac.uk,a.bismarck@imperial.ac.uk)

Room: B013

Date: 28 June 2011

Session 39.1 - Chairs: Silvestre Pinho, Soraia Pimenta

11h00 (Abstract #666)
A. Le Duigou, A. Bourmaud, P. Davies, C.Baley
INFLUENCE OF BIO-BASED TREATMENTS ON FLAX/PLLA INTERFACIAL BONDING PROPERTIES

11h20 (Abstract #738)
S. Cozien-Cazuc, M.H. Akonda, C.A. Lawrence and B.M. Weager
FIBRECYCLE PROJECT - MANUFACTURING OF SPUN YARN BASED ON RECOVERED CARBON FIBRES

11h40 (Abstract #171)
K. Jiamjiroch, SJ. Pickering, KW. Wong, G. Jiang and E. Peng
THERMAL DEGRADATION - KINETICS MODELLING OF RECYCLING CARBON FIBRE COMPOSITE IN FLUIDISED BED

12h00 (Abstract #189)
Stuart R. Coles, Benjamin M. Wood, James Meredith, Steven Maggs and Kerry Kirwan
USE OF LIGNIN AS A COMPATIBILISER FOR HEMP-EPOXY COMPOSITES

12h20 (Abstract #248)
James Meredith, Sophie Cozien-Cazuc, Ed Collings, Sam Carter, Stewart Alsop, Benjamin M. Wood, Stuart R. Coles, Kerry Kirwan
Recycled carbon fibre in high performance applications

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 39.2 - Chairs: Silvestre Pinho, Soraia Pimenta

16h30 (Abstract #381)
Guozhan Jiang, Stephen J Pickering, Nick A Warrior
ON THE DISPERSION OF RECYCLED CARBON FIBRE FOR MANUFACTURING RANDOM MAT USING WET-LAID PROCESS

16h50 (Abstract #424)
Soraia Pimenta, Silvestre T. Pinho and Paul Robinson
MECHANICAL ANALYSIS AND MODELLING OF RECYCLED CFRPS FOR STRUCTURAL APPLICATIONS

17h10 (Abstract #323)
Koon-Yang Lee, Puja Bharadia, Jonny J Blaker, Alexander Bismarck
Towards green hierarchical composites with improved properties

19h00 **(Poster Session and Reception at FEUP)**

40. Impact on Composites

Session Organizers: Filipe Teixeira Dias, Steven Savage

(ftd@ua.pt, steven.savage@foi.se)

Room: B004

Date: 30 June 2011

Session 40.1 - Chairs: Filipe Teixeira Dias, Steven Savage

14h00 (Abstract #104)
C.J. von Klemperer, G.S. Langdon, B.K. Rowland, A. Ozinsky and G.N. Nurick
RESPONSE OF POLYMER COMPOSITE SANDWICH PANELS SUBJECTED TO AIR-BLAST

14h20 (Abstract # 58)
Daniel Burger, Mauricio V. Donadon, Francisco C. L. de Melo and Sergio F. M. de Almeida
BALLISTIC IMPACT SIMULATION OF AN ARMOUR-PIERCING PROJECTILE ON HYBRID CERAMIC/FIBER REINFORCED COMPOSITE ARMOURS

14h40 (Abstract #484)
Albertino C. Arteiro, Paulo Novoa, Ivo Costa, Paulo Neves and Antonio T. Marques
SANDWICH STRUCTURES UNDER IMPACT: A STATE-OF-THE ART

15h00 (Abstract #177)
Minoo Naebe, James Sandlin, Ian Crouch, Bronwyn Fox
Novel light-weight Polymer-Ceramic Composites for Ballistic Protection

15h20 (Abstract #355)
A. P. Polanco, A. Maranon
A DATA CORRELATION MODEL FOR THE PENETRATION BEHAVIOR OF PROJECTILES INTO UHMWPE COMPOSITES

15h40 (Abstract # 68)
L. Neckel, D. Hotza, A.G.R. Lezana, A. Dias, H.A. Al-Qureshi
NUMERICAL SIMULATION OF IMPACT OVER AEROSPACE PROTECTION

16h00 (Coffee-Break)

Session 40.2 - Chairs: Filipe Teixeira Dias, Steven Savage

16h30 (Abstract # 28)
H. R. Raissi, G. H. Liaghat, H. Raissi
Experimental and Numerical study on the effects of frame shapes and staching sequence of composite plates subjected to high-velocity Impact

16h50 (Abstract #594)
Ali Goodarzi, Hailey Taylor
Analysis of shock response of sandwich composites

17h10 (Abstract #611)
Siddharth S. Avachat, Min Zhou
DYNAMIC RESPONSE OF SUBMERGED COMPOSITE SANDWICH STRUCTURES: EXPERIMENTS AND SIMULATIONS

17h30 (Abstract #550)
Yuxin Wang, Guo Sun and XianHui Cai
NUMERICAL SIMULATION FOR MULTI-LAYER STRUCTURES UNDER IMPACT LOAD BASED ON MATERIAL POINT METHOD

17h50 (Abstract #162)

Hamed Ahmadi, Gholam Hossein Liaghat, Hadi Sabouri and Emad Bidkhouri

AN EXPERIMENTAL STUDY OF THE ALUMINUM SEQUENCE EFFECT ON THE BALLISTIC RESPONSE OF GLARE

18h10 (Abstract #163)

Hamed Ahmadi, Gholam Hossein Liaghat, Hadi Sabouri and Emad Bidkhouri

EXPERIMENTAL AND NUMERICAL INVESTIGATION ON THE HIGH VELOCITY IMPACT RESPONSE OF GLARE WITH DIFFERENT THICKNESS RATIOS

18h30 (Abstract #532)

Hamed Ahmadi, Gholam Hossein Liaghat, Hadi Sabouri and Emad Bidkhouri

AN EXPERIMENTAL STUDY ON THE HIGH VELOCITY IMPACT RESPONSE OF GLASS-EPOXY/ALUMINUM FIBER METAL LAMINATES

41. Composite Pressure Vessels and Pipes

Session Organizers: Hugo Faria

(hfaria@inegi.up.pt)

Room: B014

Date: 30 June 2011

Session 41.1 - Chairs: Hugo Faria

16h30 (Abstract # 61)
Bijan Derisi, Suong Hoa, Duosheng Xu, Mehdi Hojjati, Robert Fews
EFFECTS OF THE LAYUP SEQUENCE ON THE TOUGHNESS AND LARGE DEFORMATION OF COMPOSITE TUBES IN BENDING

16h50 (Abstract #210)
Benoit Gentilleau, Fabienne Touchard and Jean-Claude Grandidier
HIGH PRESSURE HYDROGEN STORAGE VESSELS :
MATERIAL CHARACTERIZATION AND NUMERICAL MODELLING

17h10 (Abstract #252)
Marinucci G., Andrade, A. H. P
MECHANICAL BEHAVIOR AND MICROSTRUCTURAL ANALYSIS OF
FILAMENT WOUND COMPOSITE THIN-WALL PIPES
MANUFACTURED BY TWO DIFFERENT METHODS

17h30 (Abstract #255)
Altan Kayran and Can Serkan Ibrahimoglu
INVESTIGATION OF THE EFFECT OF PRESET FRICTION
ON THE STIFFNESS AND VIBRATION CHARACTERISTICS OF
FILAMENT WOUND COMPOSITE SHELLS OF REVOLUTION

17h50 (Abstract #282)
Fathollah Taheri-Behrooz and Farid Taheri
HYGROTHERMAL EFFECTS ON LOCAL INSTABILITY RESPONSE OF PERFORATED E-GLASS/EPOXY TUBES

18h10 (Abstract #303)
Ahmet Unal, Mustafa Dogu, Zafer Gemici, Aylin Bekem and D. Gulfem Baydar
A NOVEL LIFETIME PREDICTION METHOD FOR REINFORCED THERMOPLASTIC
PIPES UNDER INTERNAL PRESSURE

18h30 (Abstract #731)
Lei Zu, Sotiris Koussios and Adriaan Beukers
THREE-DIMENSIONAL ELASTICITY SOLUTION OF THICKWALLED FILAMENT-WOUND HYDROGEN STORAGE VESSELS

42. Validated Modeling of Damage and Failure in Advanced Fiber Reinforced Composites

Session Organizers: Anthony Waas, Brett Bednaryck

(dcw@umich.edu, Brett.A.Bednarcyk@nasa.gov)

Room: B035

Date: 29 June 2011

Session 42.1 - Chairs: Anthony Waas, Brett Bednaryck

16h30 (Abstract # 27)
A.E. Scott, I. Sinclair, S.M. Spearing, M. Mavrogordato and A. Bunsell, A. Thionnet
ACCUMULATION OF FIBRE BREAKS OCCURING IN A UNIDIRECTIONAL CARBON/EPOXY COMPOSITE. COMPARISON BETWEEN A MULTI-SCALE MODELLING AND HIGH RESOLUTION COMPUTED TOMOGRAPHY

16h50 (Abstract #169)
Thomas W. Murphey, Gregory E. Sanford and Mikhail M. Grigoriev
NONLINEAR ELASTIC CONSTITUTIVE MODELING OF LARGE STRAINS IN THIN CARBON FIBER COMPOSITE FLEXURES

17h10 (Abstract #440)
Gregory E. Sanford, Emil V. Ardelean, Thomas W. Murphey, and Mikhail M. Grigoriev
HIGH STRAIN TEST METHOD FOR THIN COMPOSITE LAMINATES

17h30 (Abstract #641)
Paul Davidson, Anthony M Waas
EFFECTS OF NON-EQUILIBRIUM PHENOMENA IN MODE-I FRACTURE

17h50 (Abstract #687)
Scott E. Stapleton, Anthony M. Waas
FUNCTIONALLY GRADED ADHESIVES FOR ADHESIVELY BONDED COMPOSITE JOINTS

18h10 (Abstract #713)
Evan J. Pineda, Anthony M. Waas, Brett A. Bednarcyk, and Craig S. Collier
A MULTISCALE PROGRESSIVE DAMAGE ANALYSIS AND DESIGN TOOL FOR ADVANCED COMPOSITE STRUCTURES

18h30 (Abstract #759)
Brett A. Bednarcyk and Evan J. Pineda
MULTISCALE ANALYSIS OF DAMAGE PROGRESSION AND FAILURE IN HONEYCOMB SANDWICH PANEL COMPRESSION AFTER IMPACT TESTS

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

43. AIRBUS-Imperial special session on Impact Modelling Strategies for composites

Session Organizers: Lorenzo Iannucci, Michel Fouinneteau

(l.iannucci@imperial.ac.uk , Michel.FOUINNETEAU@airbus.com)

Room: B028

Date: 29 June 2011

16h00 **(Coffee-Break)**

Session 43.1 - Chairs: Lorenzo Iannucci, Michel Fouinneteau

11h00 (Abstract #649)
M. Fouinneteau, J. Ankersen and L. Iannucci
NUMERICAL MODELLING OF TYRE IMPACT ON COMPOSITE PANELS USING A NEW 2D DAMAGE MODEL IMPLEMENTED IN ABAQUS EXPLICIT

11h20 (Abstract #650)
Fabian Ehrich, Lorenzo Iannucci, Jesper Ankersen and Michel Fouinneteau
A 2D DAMAGE MODEL FOR IMPACT ON PRE-STRESSED COMPOSITE PLATES

11h40 (Abstract #651)
Sang Nguyen, Thomas James and Lorenzo Iannucci
LOW, MEDIUM AND HIGH VELOCITY IMPACT ON COMPOSITES

12h00 (Abstract #652)
Lucio Raimondo, Lorenzo Iannucci and Michel Fouinneteau
PREDICTING THE HIGH VELOCITY IMPACT BEHAVIOUR OF LARGE COMPOSITE PANELS WITH ABAQUS/EXPLICIT

12H20 (Abstract #653)
Irene Guiamatsia, Jesper K. Ankersen, Lorenzo Iannucci, Glyn A.O. Davies and Michel Fouinneteau
SHAPE FUNCTION ENRICHMENTS FOR COHESIVE INTERFACE ELEMENTS UNDER DYNAMIC LOADING

12h40 **(Lunch)**

44. Dstl-Imperial special session on Modelling/Testing high performance composites for blast and impact applications

Session Organizers: Lorenzo Iannucci, Paul Curtis

(l.iannucci@imperial.ac.uk , ptcurtis@dstl.gov.uk)

Room: B004

Date: 30 June 2011

Session 44.1 - Chairs: Lorenzo Iannucci, Paul Curtis

09h00 (Abstract #642)
Lorenzo Iannucci , Paul T. Curtis, Daniel J. Pope
A FIBRE MATERIAL MODEL FOR MULTISCALE MODELLING OF HIGH PERFORMANCE COMPOSITES

09h20 (Abstract #643)
Karl Micallef, Arash Soleiman-Fallah, Paul T. Curtis and Luke A. Louca
A STUDY OF EARLY-TIME RESPONSE IN DYNAMICALLY LOADED VISCO-ELASTIC COMPOSITES

09h40 (Abstract #644)
Tomasz K. Cwik, Lorenzo Iannucci , Paul T. Curtis , Daniel J. Pope , Paul Robinson
INFLUENCE OF REINFORCEMENT ARCHITECTURE ON BALLISTIC RESPONSE OF CFRP SUBJECTED TO MEDIUM VELOCITY IMPACT LOADING

10h00 (Abstract #645)
Karl Micallef, Arash Soleiman-Fallah, Paul T. Curtis and Luke A. Louca
A CONSTITUTIVE MODEL FOR STRAIN-RATE SENSITIVE DEFORMATION IN ORTHOTROPIC COMPOSITES

10h30 (Coffee-Break)

Session 44.2 - Chairs: Lorenzo Iannucci, Paul Curtis

11h00 (Abstract #646)
M. Ghajari, L. Iannucci, P. Robinson, P. Curtis
NUMERICAL SOLUTIONS TO FRACTURE MECHANICS PROBLEMS USING THE PERIDYNAMIC THEORY

11h20 (Abstract #647)
Andrew D. Pullen, Karl Micallef, Arash Soleiman-Fallah, Paul T. Curtis and Luke A. Louca
LOW- RATE TENSILE TESTING OF VECTRAN FIBRES TO SUPPORT COMPOSITE CONSITUTIVE MODELLING

11h40 (Abstract #648)
Lucio Raimondo, Lorenzo Iannucci, Paul Robinson and P.T. Curtis
BALLISTIC IMPACT MODELLING OF COMPOSITE TARGETS WITH LS-DYNA3D

12h00 (Abstract #739)
M. L. Longana, J. M Dulieu-Barton, F. Pierron and S. Syngellakis
Identification of constitutive properties of composite materials under high strain rate loading using optical strain measurement techniques

12h40 (Lunch)

45. Mechanical testing of General Composites

Session Organizers: Nicolae Cranic

(ncrainic@flumag2.mec.upt.ro)

Room: B007

Date: 28 June 2011

09h00 (Plenary Lectures)

10h30 (Coffee-Break)

Session 45.1 - Chairs: Nicolae Cranic

11h00 (Abstract # 38)
M. C. Serna Moreno and J. J. Lopez Cela
BIAXIAL PLANAR TESTING OF CHOPPED POLYMER MATRIX FIBERGLASS REINFORCED COMPOSITES

11h20 (Abstract # 87)
Gustavo VARGAS and Faustino MUJIKA
NOVEL BENDING METHODS FOR DETERMINING IN-PLANE SHEAR PROPERTIES
BASED ON ELASTIC COUPLING EFFECTS

11h40 (Abstract #220)
Natalie Barbakadze, Sven Wagner, Ursula Weidig and Kurt Steinhoff
STRUCTURAL AND MECHANICAL PERFORMANCE OF LAMINATED
COMPOSITE PLATES DESIGNED BY THERMO-MECHANICAL FORMING TECHNOLOGY

12h00 (Abstract #197)
M. Giglio, A. Gilioli, A. Manes
VIRTUAL TESTING OF THREE POINT BENDING TEST FOR SANDWICH PANELS
WITH NOMEX^{TM} HONEYCOMB CORE

12h20 (Abstract #237)
Kim L. Alderson, Richard J. Day, Peter Myler, Arthur N. Wilkinson and Mohsen Zakikhani
RESIN DEVELOPMENT FOR RAPID COMPOSITE PROCESSING
BY FLUID-CONTROLLED HEAT TRANSFER

12h40 (Lunch)

14h00 (Plenary Lectures)

16h00 (Coffee-Break)

Session 45.2 - Chairs: Nicolae Cranic

16h30 (Abstract #262)
Andrzej Posmyk, Tomasz Wegrzyn and Abilio P. Silva
EFFECT OF ALUMINUM MATRIX COMPOSITES ON LUBRICATED PAIRINGS

16h50 (Abstract #205)
Kimiyoshi Naito, Jenn-Ming Yang and Yutaka Kagawa
TENSILE PROPERTIES OF HIGH STRENGTH PAN-BASED
AND HIGH MODULUS PITCH-BASED HYBRID CARBON FIBER REINFORCED EPOXY MATRIX COMPOSITE

17h10 (Abstract # 2)
B. Vinoth and T. Naveen Prakash
Experimental Study on Manufacture and Analysis of Rubber Nanoclay MWCNT Composite

17h30 (Abstract #188)
R. Rajasekaran, H. Kurt-Elli, J. A. Rongong
On the Estimation of Equivalent Properties for Syntactic Foams

17h50 (Abstract #304)
Rajneesh Sharma, Puneet Mahajan, Ramesh Kumar Mittal and Paramvir Singh
MORPHOLOGICAL AND INTERFACIAL CHARACTERIZATION
OF 3D ORTHOGONAL HYBRID CARBON-CARBON COMPOSITE

18h10 (Abstract # 8)
Mohammad Talha and B. N. Singh
AN IMPROVED HIGHER ORDER THEORY FOR GEOMETRICALLY NONLINEAR BENDING
OF SHEAR DEFORMABLE FUNCTIONALLY GRADED PLATES

19h00 **(Poster Session and Reception at FEUP)**

Date: 29 June 2011

08h00 **(Plenary Lectures)**

10h30 **(Coffee-Break)**

Session 45.3 - Chairs: Nicolae Cranic

11h00 (Abstract #267)
Padovec Zdenek, Ruzicka Milan, Smejkal Martin
and Stavrovsky Vladimir
SPRINGFORWARD PHENOMENON OF ANGLE SECTIONS OF COMPOSITE MATERIALS -
ANALYTICAL, NUMERICAL AND EXPERIMENTAL APPROACH

11h20 (Abstract #302)
Aylin Bekem, Mustafa Dogu, Zafer Gemici, D. Gulfem Baydar and Ahmet Unal
INVESTIGATION OF MECHANICAL PROPERTIES OF BASALT FIBER
REINFORCED THERMOPLASTIC COMPOSITES

11h40 (Abstract #778)
Paulo Henrique Ribeiro Borges, Anna Carolina Oliveira Mendes,
Tulio Hallak Panzera, Andre Luis Christoforo, Ricardo Andre Fiorotti Peixoto
THE MECHANICAL AND DURABILITY PROPERTIES OF GEOPOLYMER
COMPOSITES INCORPORATING RECYCLED GLASS

12h00 (Abstract #609)
Z. Shamsudin, A. Hodzic, C. Soutis, R.J.Hand, I.P Bond, G. P. McCombe
THE INVESTIGATION OF PROPERTIES OF GLASS-CERAMIC FIBER COMPOSITE

12h20 (Abstract # 12)
Raluca Voicu
STRUCTURAL CHARACTERIZATION AND MECHANICAL BEHAVIOR OF CARBON FIBER/EPOXY COMPOSITE
FOR AERONAUTICAL FIELD

12h40 **(Lunch)**

14h00 **(Plenary Lectures)**

16h00 **(Coffee-Break)**

Session 45.4 - Chairs: Nicolae Cranic

16h30 (Abstract #327)
Kaspar Lasn, Aleksander Klauson, Farid Chati, Dominique Decultot
EXPERIMENTAL IDENTIFICATION OF ELASTIC CONSTANTS OF AN ORTHOTROPIC COMPOSITE PLATE

16h50 (Abstract #328)
Mireia Olave, Jian Xu, Stepan Lomov and Dirk Vandepitte
INTERNAL GEOMETRY VARIABILITY EVALUATION OF TWO WOVEN STRUCTURES

17h10 (Abstract #338)
Jorg Feldhusen, Christoph Warkotsch, Benedikt Gunther, Stephanie Dallmeier and Liliane Ngahane Nana
EXPERIMENTAL VALIDATION OF
SANDWICH MATERIAL WITH GAPS IN THE CORE

17h30 (Abstract #363)
Asintha M. Nanayakkara, Adrian P. Mouritz and Stefanie Feih
EXPERIMENTAL ANALYSIS OF THE THROUGH-THICKNESS COMPRESSION PROPERTIES OF
Z-PINNED SANDWICH COMPOSITES

17h50 (Abstract #392)
Abdul Basit, Gildas L'Hostis, Karine Gautier, Bernard Durand
SHAPE MEMORY POLYMER COMPOSITE ACTIVATION WITH INTERNAL HEAT SOURCE

18h10 (Abstract #354)
Xin Wang and Zhishen Wu
ENHANCEMENT OF BASALT FRP TENDON BY HYBRIDIZATION FOR LONG-SPAN BRIDGES

19h00 **(Buses leave FEUP to Banquet)**

19h30 **(ICCS16 Banquet at CAVES FERREIRA)**

23h00 **(Buses leave Banquet to Hotels)**

Date: 30 June 2011

Session 45.5 - Chairs: Nicolae Cranic

08h40 (Abstract #772)
H. Ozturk
FRACTURE MECHANICS INTERPRETATION OF THIN SPRAY-ON LINER ADHESION TESTS

09h00 (Abstract #326)
N. Crainic, A. Torres Marques, N.C. Popa, P.J. Novoa, Oana Marinica, N. Correia, Alina Taculescu, Patricia Perez, Camelia Daia
PARTICULARITIES CONCERNING THE INFLUENCE OF THE MAGNETIC NANOFLUIDS
IN THE FABRICATION PROCESS OF THE NANOCOMPOSITE MATERIALS

09h20 (Abstract #452)
S.M.R. Khalili, M. Najafi, R. Eslami Farsani
Effect of thermal shock cycling on hardness and impact properties of
composites reinforced with basalt and carbon fibers

09h40 (Abstract #460)
F Mujika
A NOVEL APPROACH FOR ANALYSING FLEXURE TESTS OF MULTIDIRECIONAL LAMINATES

10h00 (Abstract #501)
Marco Morgado, João R. Correia, Fernando A. Branco
TENSILE AND COMPRESSIVE BEHAVIOUR OF GFRP PULTRUDED PROFILES
AT ELEVATED TEMPERATURE

10h30 **(Coffee-Break)**

Session 45.6 - Chairs: Nicolae Cranic

11h00 (Abstract # 660)
C. Ramadas, Krishnan Balasubramaniam and Makarand Joshi
REFLECTION AND TRANSMISSION OF LAMB WAVES IN SUBLAMINATES

11h20 (Abstract #670)
Ghayth M. Abed, Marcus M. K. Lee
EFFECT OF TEMPERATURE VARIATION ON BOND BEHAVIOUR OF STEEL BEAMS STRENGTHENED WITH CFRP PLATES

11h40 (Abstract #752)
Nilhan Urkmez Taskin, Vedat Taskin, Ismail Mutlu and Pinar Aydan Demirhan
INVESTIGATION OF THE EFFECT OF HEAT TREATMENT ON MECHANICAL PROPERTIES OF COMPOSITE FOAM MATERIALS

12h00 (Abstract #574)
Ali Nazari and Neda Dideh Var
IMPACT RESISTANCE OF ALUMINUM-EPOXY LAMINATED COMPOSITES IN CRACK DIVIDER CONFIGURATION

12h20 (Abstract #768)
Quentin Govignon, Simon Bickerton and Piaras A. Kelly
HOMOGENISATION OF COMPACTION BEHAVIOUR AND PERMEABILITY FOR MULTI-LAYERED COMPOSITE STRUCTURES MANUFACTURED VIA LCM PROCESSES

12h40 **(Lunch)**

Session 45.7 - Chairs: Nicolae Cranic

14h00 (Abstract #773)
H. Ozturk
UNDERGROUND SUPPORT LINERS AND WORK OF ADHESION

14h20 (Abstract #711)
Marcello Manca, Christian Berggreen and Jan B. Hogsberg
CHARACTERIZATION OF DAMPING PROPERTIES FOR STRUCTURAL SANDWICH COMPONENTS

14h40 (Abstract #771)
J.P. Nobre, A.C. Batista, W. Van Paepegem and B. Scholtes
IMPROVING DRILLING OPERATIONS IN FIBER-REINFORCED POLYMER COMPOSITES

15h00 (Abstract #717)
E. Alcala, R. Grimaldi, A. Martin, F. Badea
THEORICAL-EXPERIMENTAL EVALUATION OF BENDING RESISTANCE OF MULTIMATERIAL JOINTS OF LARGE PASSENGER VEHICLES. APPLICATION TO ROLLOVER STRENGTH OF THE SUPERSTRUCTURE.

15h20 (Abstract #719)
M. David and A.F. Johnson
ANALYSIS OF CRUSHING RESPONSE OF COMPOSITE CRASHWORTHY STRUCTURES

15h40 (Abstract #485)
V. Bria, A. Circiumaru and I.-G. Birsan
A COMPARATIVE STUDY OF PARTICULATE EPOXY COMPOSITES

16h00 **(Coffee-Break)**

Session 45.8 - Chairs: Nicolae Cranic

16h30 (Abstract #726)
Toshio Hattori and Minoru Yamashita
APPLICATIONS OF FRP COMPOSITES ON GEARS

17h10 (Abstract #753)
Vedat Taskin, Nilhan Urkmez Taskin, Pinar Aydan Demirhan and Anil Sahin
ADHESIVE JOINING OF COMPOSITE FOAM MATERIALS

17h30 (Abstract #612)
Karina Guerra Tonet, Jane Proszek Gorninski
Alumina addition influence on the polymer composites properties

17h50 (Abstract #744)

Parya Naghipour, Marion Bartsch, Joachim Hausmann, Heinz Voggenreiter

INFLUENCE OF FIBER DIRECTION & STACKING SEQUENCE
ON DELAMINATION FAILURE OF CFRP AND HYBRID TI/CFRP LAMINATES IN MIXED MODE BENDING

Poster Session, during Poster Session and Reception at FEUP

Session Organizers: Paulo Neves

(pneves@idmec.up.pt)

Room:

Date: 28 June 2011

(Abstract #569)
Mohammad Dahmardeh Ghalehno, Morteza Nazerian, Hossien Rangavar
FEASIBILITY OF USING SALTWORT (SALSOLA KALLI L.) STALKS IN THE PRODUCTION OF PARTICLEBOARD COMPOSITES

(Abstract #570)
Morteza Nazerian, Mohammad Dahmardeh Ghalehno, Hossien Rangavar
INFLUENCE OF HEAT TREATMENT AND PROPORTION OF JUVENILE WOOD ON THE SOME OF THE PROPERTIES OF LAMINATED VENEER LUMBER

(Abstract #631)
Igor V. Pavelko, Maxim P. Smolyaninov and Valery I. Zhigun
ASSESSMENT OF SPATIALLY-REINFORCED CARBON COMPOSITES EXFOLIATION AFTER A LOW-SPEED IMPACT

(Abstract #194)
Tsutomu Oishi, Naohisa Hayamizu, Yukio Isobe, Kazuhiro Yamabuki and Kenjiro Onimura
Synthesis of New Organic-Inorganic Hybrid Type Liquid Phenol Resin

(Abstract #489)
P.C.Neves, L.Carlden, L.Hjertonsson, A.A.Fernandes, G.Bjorkman, T.Tomasson
PUBLIC SERVICE VEHICLE WEIGHT OPTIMIZATION USING SANDWICH COMPOSITE MATERIALS

(Abstract #491)
Daniele O. Castro, Adhemar Ruvolo-Filho and Elisabete Frollini
HYDROXYL-TERMINATED POLYBUTADIENE AND CASTOR OIL: IMPACT MODIFIER AND COUPLING AGENTS IN BIOPOLYETHYLENE CURAUA FIBERS COMPOSITES

(Abstract #492)
C. G. Silva and E. Frollini
THERMOSET MATRICES REINFORCED WITH SUGARCANE BAGASSE FIBERS

(Abstract #493)
Fernando de Oliveira, Elaine C. Ramires and Elisabete Frollini
IMPACT PROPERTIES OF SISAL FIBER REINFORCED COMPOSITES: POLYURETHANE AND PHENOLIC MATRICES BASED ON SODIUM LIGNOSULFONATE

(Abstract #494)
Elaine C. Ramires, Elisabete Frollini
RESOL AND NOVOLAC GLYOXAL-PHENOL RESINS: USE AS MATRICES IN BIO-BASED COMPOSITES

(Abstract #513)
M. M. Banerjee and J. Mazumdar
...

(Abstract #546)
Munir TASDEMIRA, Ebru ULUG
Effects of PS on the mechanical, thermal and morphological properties of SBS, SEBS, SIS and SBR type elastomers

(Abstract #764)
Luiza de C. Folgueras and Mirabel C. Rezende
MICROWAVE ABSORPTION OF NANOCOMPOSITE MATERIAL AS USE WITH RAS

(Abstract #615)
Ebrahim Farmand Ashtiani, Joel Cugnoni and John Botsis
EXPERIMENTAL STUDY OF THE PLY THICKNESS EFFECT ON DELAMINATION RESISTANCE OF UNIDIRECTIONAL CARBON EPOXY LAMINATES

(Abstract # 41)
K.H. Safari, J. Zamani
POLYMER BEHAVIOUR CHARACTERISATION USING SHPB TESTS AND SIMULATIONS

(Abstract #325)
Mototsugu Tanaka, Tomoki Hama, Yasuhisa Seto, Hideaki Kusano, Yoshiyasu Hirano, Yuichiro Aoki, Hiroshi Saito and Isao Kimpara
ULTRA-HIGH-SPEED IN-SITU OBSERVATION OF MECHANICAL INTERACTION BETWEEN MESOSCOPIC FRACTURE EVENTS IN TENSILE FRACTURE PROCESS OF UD MODEL COMPOSITES

(Abstract #691)
P.K. Rakesh, I. Singh, D. Kumar
FATIGUE BEHAVIOR OF GLASS FIBER REINFORCED PLASTIC LAMINATES WITH DRILLED HOLE

(Abstract #530)
Carolina Garbe, Fernanda Gentil, Marco Parente, Renato Natal and João Paco
BIOMECHANICAL STUDY OF CENTRAL LAYER OF THE TYMPANIC MEMBRANE OF THE HUMAN EAR

(Abstract #568)
Haider K. Ammash
Large Displacement Dynamic Analysis of Laminated Composite Plates with Variable Fiber Spacing Under in-Plane Loads

(Abstract #585)
Haider K. Ammash
Geometrically Nonlinear Finite Element Analysis of Imperfect Laminated Composite Plate with Variable Fiber Spacing

(Abstract #359)
Ahmed Hakem
Composites based unsaturated polyester matrix: UP/aluminim fibres

(Abstract #633)
A. RAHMANE, A. BEZAZI, N. OUELAA and F. SCARPA
STACKING SEQUENCE EFFECT OVER THE MODAL DAMPING RATIOS IN AUXETIC COMPOSITE LAMINATES

(Abstract #674)
A. Benkhedda, A.Bezazi , E.A Adda Bedia, F. Scarpa
POISSON'S RATION EFFECT ON HYGROTHERMAL STRESSES DURING MOISTURE DESORPTION FOR AGEING LAMINATED COMPOSITE PLATES

(Abstract #408)
J. Zicans, T. Ivanova, S. Strode, I. Zalite, and A.K. Bledzki
MANUFACTURING AND STRUCTURE-PROPERTY RELATIONSHIPS OF POLYCARBONATE COMPOSITES WITH NANOSTRUCTURED METAL OXIDE MODIFIERS

(Abstract #219)
Sivaldo L. Correia, Adilson Schackow and William E. Lee
MODELLING MECHANICAL AND PHYSICAL PROPERTIES FOR CONCRETES WITH FIRED CLAY BRICK WASTE USING FRACTIONAL FACTORIAL DESIGN

(Abstract #272)
Teresa M. Pique, Mariano Escobar, Analia Vazquez
PORTLAND CEMENT MORTAR MODIFIED WITH WATER SOLUBLE POLYMER AND MONTMORILLONITES

(Abstract #393)
Catalina Gomez Hoyos, Mariano Escobar, Analia Vazquez
FIQUE FIBER COMPOSITES DURABILITY IN ALKALINE CONDITION FOR CONSTRUCTION APPLICATION

(Abstract #402)
A. Dolata-Grosz, M. Dyzia, J. Sleziona
ALUMINIUM ALLOY INTERACTION WITH CARBON TEXTILE PREFORM AT GAS PRESSURE INFILTRATION PROCESS

(Abstract #403)
A. Dolata-Grosz, M. Dyzia, J. Wieczorek
STRUCTURE OF HETEROPHASE COMPOSITE AT PERMANENT MOULD CAST PISTON

(Abstract #404)
A. Dolata-Grosz, M. Dyzia, J. Wieczorek
SURFACE GEOMETRY OF HETEROPHASE COMPOSITE AFTER MACHINING

(Abstract #260)
A. Sahli, A. Hakem, Y. Bouafia
COMPOSITES BASED POLYMERIC MATRIX GPPP-EPDM AND GPPP-(EPR-EPDM): CONTRIBUTION TO POLYMER RECYCLING

(Abstract #275)
Nara O. Yokoyama, Eduardo H. de C. Biase, Mauricio V. Donadon and Sergio F M de Almeida
THE DELAMINATION EFFECTS ON THE IMPACT RESISTANCE OF COMPOSITE PLATES: EXPERIMENTAL AND NUMERICAL RESULTS