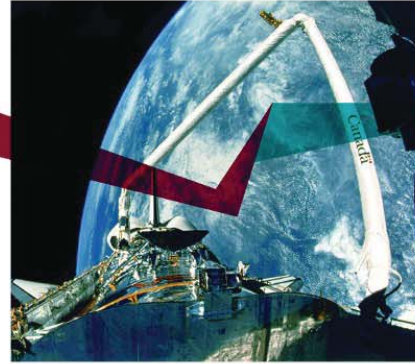


ICCM19
MONTREAL 2013

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Composite Materials: The Great Advance



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Editors

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Guodong Fang (Harbin Institute of Technology)

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Yalin Yu (Beihang University)

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MANUFACTURING OF COMPOSITE LAMINATES WITH PERFORATED CARBON NANOTUBE FOREST CORE

Sei jin Park (University of Michigan - Ann Arbor), Sameh H. Tawfick (Massachusetts Institute of Technology), Anna Christine Brieland-shoultz (University of Michigan - Ann Arbor), A. john Hart (University of Michigan - Ann Arbor)

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Nicholas Heeder, Arijit Bose, Arun Shukla, Indrani Chakraborty (U. of Rhode Island), Fei Guo, Michael Godfrin, Robert Hurt, Anubhav Tripathi (Brown U.)

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Iosif Daniel Rosca (Concordia University), Suong Hoa (Concordia University)

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Qianli Liu, Min Li, Jing Guo, Yizhuo Gu (Beihang University), Yanxia Li, Zuoguang Zhang (Beijing University of Aeronautics and Astronautics)

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Yanan Liu, Yizhuo Gu, Min Li (Beihang University), Kun Wang, Zuoguang Zhang (Beijing U. Aeronautics and Astronautics), Dongmei Hu, Qingwen Li (Chinese Academy of Sciences)

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Muchun Liu (Beihang University), Meihong Ge (Beijing Oriental Hanson Curtain Wall Technology Co. Ltd.), Song Yang (Beijing UFT Conference&Exhibition Co. Ltd)

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Warintorn Thitsartarn (Institute of Materials Research and Engineering)

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Yong Tae Park (University of Minnesota - Twin Cities Campus), Jaime C Grunlan (Texas A&M University)

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Edith Justine Grippon (Institut de Mecanique et d'Ingenierie de Bordeaux), Stéphane Baste (Universite Bordeaux I), Eric Martin (Universite Bordeaux I), Christophe Aristégui (Universite Bordeaux I), Guillaume Couégnat (Universite Bordeaux I)

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Luis Antonio Díaz (CINN-CSIC)

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Alessandro Airoidi, Paolo Iavarone, Luca Di landro, Gabriele Imbalzano (Polytechnic Institute of Milan), Marco Orlandi (Brembo SGL Carbo Ceramic Brakes), Massimiliano Valle (Petroceramics spa)

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Camille Rabache (Ecole Centrale de Paris), Guillaume Bouchet (), Guillaume De calan (), Jean-michel Kiat (Ecole Centrale de Paris), Nicolas Guiblin (Ecole Centrale de Paris), Florence Porcher

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Jerome Roger (Universite Bordeaux I), Laurence Maillé (Universite Bordeaux I), Marie-anne Dourges (Universite Bordeaux I)

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Lucyna Renata Jaworska, Piotr Klimczyk, Marcin Henryk Rozmus (Institute of Advanced Manufacturing Technology), Wojciech Zebala (Cracow University of Technology), Pawel Rutkowski (AGH University of Science and Technology)

FRACTURE TOUGHNESS BEHAVIOR OF ALUMINA MATRIX COMPOSITES AT ELEVATED TEMPERATURE.

Magdalena Szutkowska (Institute of Advanced Manufacturing Technology), Barbara Smuk (Institute of Advanced Manufacturing Technology), Marek Boniecki (Institute of Electronic Materials Technology)

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N. Shirshova, A. Bismarck, E. Smith Greenhalgh, M. S p Shaffer, J. Hg Steinke (Imp. Col. of Sci.), S. Carreyette (Cytec), P. Johansson, M. Marczewski, P. Jacobsson (Chalmers U. Tech.), G. Kalinka, M. Wienrich (BAM Fed. Inst. for Mat. Res.& Testing)

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Henrik Herranen (Tallinn University of Technology), Alar Kuusik (Tallinn University of Technology), Henri Lend (Tallinn University of Technology), Steffen Czichon (Elan-Ausy GmbH), Jaan Kers (Tallinn University of Technology), Marko Piirlaid (Tallinn University of Technology)

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Navid Zobeiry (University of British Columbia), Reza Vaziri (University of British Columbia), Anoush Poursartip (University of British Columbia)

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Jozsef Gabor Kovacs (Budapest University of Technology and Economics), Andras Suplicz (Budapest University of Technology and Economics)

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Harald Berger (Otto-von-Guericke Universitat Magdeburg)

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George Zhenghong Zhu (York University), Shen Gong (York University)

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Anita Olszowka-myalska, Jerzy Myalski

GLASSY CARBON PARTICLES AS A COMPONENT

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Paul Octavian Stanescu, Catalin Zaharia, Veronica Fratila,, Eugeniu Vasile (University Politehnica of Bucharest) Bianca Galateanu (University of Bucharest)

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Michael Lengersdorf (Rheinisch Westfälische Technische Hochschule Aachen), Thomas Gries (Rheinisch Westfälische Technische Hochschule Aachen), Jörg Bernhard Multhoff (ISATEC GmbH), Markus Linke (Fachhochschule Hamburg)

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Marcel Siegfried (Katholieke Universiteit Leuven), Carmen Tola (), Stepan V. Lomov (Katholieke
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Marino Quaresimin (University of Padua), Paolo Andrea Carraro (University of Padua)

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Giovanni Belingardi (Polytechnic Institute of Turin), Alem Tekalign Beyene (Polytechnic Institute of Turin), Ermias Gebrekidan Koricho (Polytechnic Institute of Turin)

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Kuangyi Zhang (University of Manchester)

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Audrey Favre (Ecole Polytechnique de Montreal), Edith Roland Fotsing (Ecole Polytechnique de Montreal), Edu Ruiz (Ecole Polytechnique), Martin Lévesque (Ecole Polytechnique de Montreal), Clémentine Fellah (Ecole Polytechnique de Montreal)

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Per Johan Hallander (Saab AB)

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Shen hin Lim (University of New South Wales), Donald Wainwright Kelly (University of New South Wales), Garth Morgan Kendall Pearce (University of New South Wales), B. gangadhara Prusty (University of New South Wales), Alan Crosky (University of New South Wales)

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Ignaas Verpoest (Katholieke Universiteit Leuven), Yentl Swolfs (Katholieke Universiteit Leuven), Larissa Gorbatiikh (Katholieke Universiteit Leuven)

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Sindy Engel (Technische Universitat Bergakademie Freiberg), Christian Boegle (BMW Group), Dirk Lukaszewicz (BMW Group)

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Damoon Motamedi (University of British Columbia), Abbas Milani (University of British Columbia)

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Michaël Guy Callens, Larissa Gorbatikh, Ellen Bertels, Bart Goderis, Mario Smet, Ignaas Verpoest
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MIXED MODE THROUGH THICKNESS FRACTURE OF POLYMER MATRIX COMPOSITE

Jamal Jamali (University of Western Ontario), Jeff Wood (University of Western Ontario)

STACKING SEQUENCE EFFECTS IN OVER-HEIGHT COMPACT TENSION TESTS OF QUASI-ISOTROPIC LAMINATES

Xiaodong Xu, Michael R Wisnom, Stephen Richard Hallett (University of Bristol), Navid Zobeiry, Steven A Leslie, Anoush Poursartip, Reza Vaziri (University of British Columbia)

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THE WORLD WIDE FAILURE EXERCISE- STRENGTH PREDICTION IS NOT EASY - BUT WE ARE GETTING THERE

Keynote: Michael John Hinton (National Composites Centre), Sam Kaddour (QinetiQ Ltd)

MODELLING COMPRESSIVE DAMAGE IN CFRP: COMBINING FRICTION WITH DAMAGE

Renaud Gutkin (Swerea SICOMP)

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Gergely Czel (University of Bristol), Michael R Wisnom (University of Bristol)

EFFECT OF SUBSTRATE SURFACE MORPHOLOGY ON FATIGUE BEHAVIOUR OF ADHESIVELY BONDED CARBON FIBRE REINFORCED PEEK COMPOSITES

Michelle Salvia (Ecole Centrale de Lyon), Réda el hak Ourahmoune (Ecole Centrale de Lyon), Nadir Mesrati (Ecole Nationale Polytechnique), Thomas Mathia (Ecole Centrale de Lyon)

MIXED-MODE TRANSLAMINAR FRACTURE: EXPERIMENTAL RESULTS AND NUMERICAL MODELLING

Matthew John Laffan (Imperial College of Science), Silvestre T Pinho (Imperial College of Science), Paul Robinson (Imperial College of Science)

MULTI-SCALE ANALYSIS OF EFFECTS OF CONSTITUENT PROPERTIES ON OPEN-HOLE TENSION PERFORMANCE OF COMPOSITE LAMINATES

Xing Li, Zhidong Guan, Bin Xue, Lu Liu, Wei He, Junwu Mu (Beijing University of Aeronautics and Astronautics)

NUMERICAL AND EXPERIMENTAL ANALYSES OF MULTIPLE DELAMINATIONS IN CURVED COMPOSITE LAMINATES

Andrea Baldi, Alessandro Airoidi, Paolo Belotti, Paolo Bettini, Giuseppe Sala (Polytechnic Institute of Milan)

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Martin Reiter, Anna Maria Hartl, Zoltan Major, Reinhold W. Lang (Johannes Kepler University Linz), Michael Jerabek, Simon Gastl (Borealis Polyolefine GmbH)

MIXED MODE COHESIVE LAW FOR FIBRE/MATRIX INTERFACE- A COUPLED EXPERIMENTAL AND NUMERICAL STUDY

Karolina Martyniuk (Technical University of Denmark), Bent F Sørensen (Technical University of Denmark), Qingda Yang (University of Miami), Wei Liu (University of Miami)

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Pradchar Pradyawong (Tokyo Institute of Technology), Masatoshi Kubouchi (Tokyo Institute of Technology), Saiko Aoki (Tokyo Institute of Technology)

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Samit Roy (University of Alabama - Tuscaloosa)

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Nelson Madalai Muthu (Indian Institute of Technology, Bombay), Brian George Falzon (Queen's University Belfast), Surjya Kumar Maiti (Indian Institute of Technology, Bombay), Shahin Khoddam (Monash University)

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Yu Yang (University of Nottingham), Xiasheng Sun (China Aviation Industry Corp), Shuguang Li (University of Nottingham)

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Hideaki Kusano (Shimadzu Corporation), Yoshiyasu Hirano (Japan Aerospace Exploration Agency), Akinori Yoshimura (Japan Aerospace Exploration Agency), Yuichiro Aoki (Japan Aerospace Exploration Agency), Yutaka Iwahori (Japan Aerospace Exploration Agency)

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Carla Canturri (Imperial College of Science), Emile Smith Greenhalgh (Imperial College of Science), Silvestre T Pinho (Imperial College of Science)

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Maria Kashtalyan (University of Aberdeen), Maryam Heidari (University of Aberdeen), Igor Guz (University of Aberdeen)

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John Botsis (Ecole Polytechnique Federal de Lausanne)

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Hari Arora (Imperial College of Science), Maria Charalambides (Imperial College of Science), Edmund Tarleton (University of Oxford), David M Williamson (University of Cambridge), Claire L Leppard

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Shawn A English (Sandia National Labs), Timothy Briggs (Sandia National Labs)

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Tonny Nyman (Saab AB), Alann Andre (), Malin Akermo (Royal Institute of Technology), Sören Nilsson (Swerea SICOMP), Monica Norrby (Royal Institute of Technology)

THE EFFECT OF RUBBER THICKNESS AND LOAD RATE ON THE INTERFACIAL FRACTURE ENERGY IN STEEL/RUBBER/COMPOSITE HYBRID STRUCTURES

Essi Sarlin (Tampere University of Technology), Jyrki Vuorinen (Tampere University of Technology), Minnamari Vippola (Tampere University of Technology), Toivo Lepistö (Tampere University of Technology)

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Vadim V. Silberschmidt (Loughborough University)

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Amirhossein Hajdaei (University of Manchester Institute of Science and Technology), Paul Jonathan Hogg (Royal Holloway and Bedford New College), Constantinos Soutis (University of Manchester)

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Arief Yudhanto (Tokyo Metropolitan University)

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Yat-tarng Shyng (University of Exeter), Oana Ghita (University of Exeter)

DAMAGE CHARACTERIZATION OF A THIN PLATE MADE OF ABS UNDER UNIAXIAL SOLICITATION

Hicham Farid, fouda erchiqui, fouda slaoui hasnaoui (University of Quebec Abitibi-Temiscamingue), hassan ezzaidi (University of Quebec at Chicoutimi), mohamed elghorba, hkalid elhad (Universite Hassan II - Ain Chock)

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FATIGUE DELAMINATION GROWTH OF ENVIRONMENTALLY AGED/DEGRADED ADHESIVELY BONDED COMPOSITE JOINTS UNDER MODE I LOADING

Chun Li (National Research Council Canada), Tim Teng (National Research Council Canada), Gang Li (National Research Council Canada), Marko Yanishevsky (National Research Council Canada)

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Dinh chi Pham (Institute of High Performance Computing A*STAR)

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Zhi Sun (Dalian University of Technology), Shiyong Sun (Dalian University of Technology), Shanshan Shi (Dalian University of Technology), Haoran Chen (Dalian University of Technology), Xiaozhi Hu (University of Western Australia)

PREDICTING THE THROUGH-THICKNESS ENHANCEMENT OF Z-PINNED COMPOSITE LAMINATES

Galal F.a. Mohamed (University of Bristol), Fabrice Helenon (National Composites Centre), Stephen Richard Hallett (University of Bristol), Mehdi Yasaee (University of Bristol), Giuliano Allegri (University of Bristol)

DELAMINATION INITIATION DUE TO INTERLAMINAR TENSION IN FIBRE REINFORCED PLASTICS

Jamie Peter Blanchfield (University of Bristol), Giuliano Allegri (University of Bristol)

EXPERIMENTAL AND NUMERIC MULTISCALE ANALYSES OF FAILURE MECHANISMS ON PULTRUDED POLYMERIC COMPOSITE MATERIAL

Henri-alexandre Cayzac (Ecole Nationale Supérieure des Mines de Paris), Sébastien Joannès (Ecole Nationale Supérieure des Mines de Paris), Lucien Laiarinandrasana (Ecole Nationale Supérieure des Mines de Paris)

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Amine El mourid (Ecole Polytechnique de Montreal), Martin Lévesque (Ecole Polytechnique de Montreal), Rajamohan Ganesan (Concordia University)

MODELING OF MECHANICAL RESPONSE IN CFRP ANGLE-PLY LAMINATES

Shinji Ogihara (Tokyo University of Science), Hayato Nakatani (Osaka City University)

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Federico Paris (Universidad de Sevilla), Alberto Barroso (Universidad de Sevilla), Elena Correa (Universidad de Sevilla), Maria Dolores Pérez (Universidad de Sevilla), David Vega (Universidad de Sevilla)

FRACTURE MECHANICS OF COMPOSITE PLYS ON MICROSCALE

Christian Marotzke (BAM-Federal Institute for Materials Research & Testing), Titus Feldmann (BAM-Federal Institute for Materials Research & Testing)

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Shigeki Aratama (Kawasaki Heavy Industries Ltd.), Yusuke Tsumura (Kyoto University), Masaaki Nishikawa (Kyoto University), Masaki Hojo (Kyoto University)

OPTIMISATION OF CARBON-FIBER COMPOSITE SHELLS FOR TYPE IV PRESSURE VESSELS

Clémence Devilliers (Air Liquide - CRCO), Anthony R. Bunsell, Alain Thionnet, Heng-yi Chou, Sébastien Joannès (Ecole Nationale Supérieure des Mines de Paris)

THE MUTUAL EFFECTS OF SHEAR AND TRANSVERSE DAMAGE IN POLYMERIC COMPOSITES

Lloyd Smith (Washington State University), Mohammedmahdi Salavatian (Washington State University)

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Jy-an John Wang (Oak Ridge National Laboratory), Ting Tan (University of Vermont), Hao Jiang (Oak Ridge National Laboratory)

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Lucien Lailarinandrasana (Ecole Nationale Supérieure des Mines de Paris), Wassim Trabelsi (Ecole Nationale Supérieure des Mines de Paris), Alain Thionnet (Ecole Nationale Supérieure des Mines de Paris)

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Shyam Mohan Panamoottil (University of Auckland), Raj Das (University of Auckland), Krishnan Jayaraman (University of Auckland)

DAMAGE ANALYSIS OF ALUMINUM / CFRP HYBRID BEAM UNDER THREE POINT BENDING

Hee chul Kim, Dong kil Shin, Jung goo Kim, Jung ju Lee (Korea Advanced Institute of Science & Technology), Kum cheol Shin (Shin Ansan University)

DAMAGE SUPPRESSION IN THIN PLY ANGLE-PLY CARBON/EPOXY LAMINATES

Jonathan Fuller (University of Bristol), Michael R Wisnom (University of Bristol)

DAMAGE EVOLUTION LAW IN THE FRAMEWORK OF CONTINUUM DAMAGE MECHANICS FOR UD COMPOSITES

Shuguang Li (University of Nottingham), Qing Pan (University of Nottingham), Tian-hong Yu (University of Nottingham)

DAMAGE TOLERANCE OF STIFFENED COMPOSITE STRUCTURES

Joanne Emma Davies (University of Southampton), Adam J. Sobey (University of Southampton), James I.r. Blake (University of Southampton), Ajit Shenoj (University of Southampton)

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Xiaochen Sun (Shandong University), Peng Qu (Shandong University), Yunli Guo (Shandong University), Yuxi Jia (Shandong University)

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Edward David McCarthy, Jae hyun Kim, Nathanael Alan Heckert, Stefan D. Leigh, Gale A Holmes, Jeffrey W. Gilman (National Institute of Standards and Technology (NIST))

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Nelson V De carvalho, James Gordon Ratcliffe

REPRESENTING TRANSLAMINAR FRACTURE AS A COHESIVE CRACK

Rita Teixeira (Imperial College of Science), Silvestre T Pinho (Imperial College of Science)

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Daniel Svensson (University College of Skovde), Ulf Stigh (University College of Skovde), Svante Alfredsson (University College of Skovde)

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Lei Yang (Beihang University), Ying Yan (Beijing University of Aeronautics and Astronautics), Zhiguo Ran (Beihang University)

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Vladimir Alzamora Guzman

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DCB TEST SAMPLE OPTIMIZATION FOR MICRO-MECHANICAL TESTING

Sanita Zike, Lars Pilgaard Mikkelsen

**AN INVESTIGATION INTO MATRIX CRACKING IN TRANSVERSE PLYS LEADING TO
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Daniel J Mortell, David A Tanner, Conor T. Mccarthy

**DIRECT NUMERICAL SIMULATION OF DAMAGE PROGRESSION IN LAMINATED
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Nitesh Kumar Karna, Heejin Kang, Kookjin Park, Kyungmin Nam, Chanhooon Chung, Minkee Kim, Ik-hyeon Choi, Sangjoon Shin

**LOCAL STRAIN RATE EFFECT ON DAMAGE IN GLASS FIBER REINFORCED ETHYLENE-
PROPYLENE COMPOSITE**

Joseph Fitoussi, Michel Bocquet, Fodil Meraghni

MICROMECHANICAL MODELLING OF DAMAGE PROCESSES IN COMPOSITE MATERIALS

Darko Ivancevic, Ivica Smojver

**ORTHOGONAL STITCHING OF 2D FABRICS FOR IMPROVED DELAMINATION
RESISTANCE**

William Richard Kennon, Prasad Potluri, Devrim Goktas

**IN SITU DAMAGE MECHANISMS INVESTIGATION OF POLYAMIDE/SHORT GLASS FIBER
COMPOSITE**

Muhamad fatikul Arif, Nicolas Despringre, Yves Chemisky, Gilles Robert, Fodil Meraghni

**FAILURE ASPECTS OF FIBER METAL LAMINATES AFTER LOW VELOCITY AND LOW
ENERGY IMPACT**

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Richard Murray (University of Birmingham)

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Matthias Arnold (Institut fuer Verbundwerkstoffe GmbH), Massimo Cojutti (Audi AG), Peter Mitschang (Institut fuer Verbundwerkstoffe GmbH)

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David Becker (Institut fuer Verbundwerkstoffe GmbH), Markus Brzeski (Institut fuer Verbundwerkstoffe GmbH), Dominik Linster (Request Pending), Peter Mitschang (Institut fuer Verbundwerkstoffe GmbH)

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Shanglin Gao, Yin hu Deng, Jian wen Liu , Edith Maeder (Leibniz Institute of Polymer Research Dresden)

COMPLIANT MULTIFUNCTIONAL WING STRUCTURES FOR HARVESTING SOLAR ENERGY

Hugh Alan Bruck (University of Maryland at College Park)

SMP FILLED HONEYCOMB AS A RECONFIGURABLE SKIN: MODEL AND EXPERIMENTAL VALIDATION

Richard V Beblo, John P Puttmann (University of Dayton), Nathaniel E Deleon, James J Joo, Gregory W Reich (Air Force Research Laboratory)

ADAPTIVE COMPOSITE PANEL WITH EMBEDDED SMA ACTUATORS: DESIGN, MANUFACTURING AND TESTING

Simon Lacasse (Ecole de Technologie Superieure), Charles Simoneau (Ecole de Technologie Superieure), Patrick Terriault (Ecole de Technologie Superieure), Vladimir Brailovski (Ecole de Technologie Superieure)

FROM ATTACHED SMA WIRES TO INTEGRATED ACTIVE ELEMENTS – A SMALL STEP?

Moritz Hübler (Institut fuer Verbundwerkstoffe GmbH), Martin Gurka (Institut fuer Verbundwerkstoffe GmbH), Ulf Paul Breuer (Institut fuer Verbundwerkstoffe GmbH)

SIMULATIONS OF THERMOMECHANICAL PERFORMANCE OF SMP-BASED MICROVASCULAR SYSTEMS

H. jerry Qi (University of Colorado at Boulder), Kai Yu (University of Colorado at Boulder), Jeffery W. Baur (Air Force Research Laboratory), David M Phillips (Air Force Research Laboratory)

CARBON FIBRE REINFORCED EPOXY COMPOSITES WITH VARIABLE STIFFNESS FOR USE IN MORPHING AEROSTRUCTURES

Paul Robinson (Imperial College of Science), Henry Maples (Imperial College of Science), Alexander Bismarck (Imperial College of Science), Oliver Gaité (Imperial College of Science), Stephen Smith (Imperial College of Science)

TOWARD COMPUTATIONAL SMART MATERIALS WITH CONTROLLABLE STIFFNESS

Michael A Mcevoy (University of Colorado at Boulder), Nicholas D. Farrow (University of Colorado at Boulder), Nikolaus Correll (University of Colorado at Boulder)

HIGH STROKE ACTUATION OF ALIGNED CNT-PARAFFIN COMPOSITE FILMS

Davor Copic (University of Michigan - Ann Arbor), A. John Hart (University of Michigan - Ann Arbor)

REPLICA MOLDING OF LIQUID CRYSTAL POLYMER MICROSTRUCTURES FOR ACTIVE SURFACES

Davor Copic (University of Michigan - Ann Arbor), Assaf Ya'akovovitz (University of Michigan - Ann Arbor), A. John Hart (University of Michigan - Ann Arbor)

MULTIFUNCTIONAL COMPOSITES BY SEGMENTATION AND ASSEMBLY

Thomas Siegmund (Purdue University), Somesh Khandelwal (Purdue University)

HIGH PERFORMANCE, ELECTROLYTE-FREE TORSIONAL AND TENSILE CARBON NANOTUBE YARN COMPOSITE MUSCLES

R. H. Baughman, M. D. Lima, N. Li, M. Jung de andrade, S. Fang, J. Oh, G. Spinks, M. Kozlov, C. S. Haines, D. Suh, J. Foroughi, S. Jeong Kim, Y. Chen, T. Ware, M. Kyoon Shin, L. Dantas Machado, A. F. Fonseca, J. D. w. Madden, W. Voit, D. S. Galvão

HIGHLY TWISTED DOUBLE-HELIX CARBON NANOTUBE YARNS

Yuanyuan Shang (Harbin Institute of Technology)

BENDING AND MECHANICAL BEHAVIORS OF CNF/PPY CONDUCTIVE SINGLE-LAYER COMPOSITE MATERIAL

Cheol Kim (Kyungpook National University)

INTEGRATION OF LINEAR THERMOELECTRIC MODULES COMPOSED OF LOW AND INTERMEDIATE TEMPERATURE P- AND N-TYPE METALLIC SEMICONDUCTORS INTO COMBUSTION CHAMBER WALLS

Minoru Taya (University of Washington)

PROCESS-STRUCTURE-PROPERTY RELATIONSHIP FOR ORGANIC SEMICONDUCTORS GROWN BY ORGANIC VAPOR JET PRINTING

Olga Shalev (University of Michigan - Ann Arbor), Max Shtein (University of Michigan - Ann Arbor), Shaurjo Biswas (University of Michigan - Ann Arbor)

ELECTROMECHANICAL CHARACTERIZATION OF BARIUM TITANATE COATED CARBON FIBERS

Christopher Bowland (University of Florida), Zhi Zhou (University of Florida), Henry Sodano (University of Florida)

LAYER-BY LAYER ASSEMBLED MULTIFUNCTIONAL COMPOSITES

Nicholas A. Kotov, Jian Zhu

CARBON NANOSTRUCTURES FOR FLEXIBLE AND HIGH EFFICIENCY ENERGY APPLICATION

Wonbong Choi (University of North Texas)

TAILORED ALIGNED-CARBON NANOTUBE NANOCOMPOSITES FOR ENERGY STORAGE

Noa Lachman (Massachusetts Institute of Technology), Brian Wardle (Massachusetts Institute of Technology)

MECHANICAL RELIABILITY OF INORGANIC THIN FILM PHOTOVOLTAICS INTEGRATED WITH COMPOSITE LAMINATES

Dimitrios Antartis (University of Illinois at Urbana-Champaign), Ioannis Chasiotis (University of Illinois at Urbana-Champaign)

THE EFFECTS OF STRUCTURAL INTEGRATION AND MECHANICAL DEFORMATION ON THE ELECTRO-MECHANICAL PERFORMANCE OF STRUCTURAL BATTERIES

Salah M Shalouf (Royal Melbourne Institute of Technology)

FROM SMART SENSING TO MULTIFUNCTIONAL MATERIALS: ARE WE READY FOR THE CHALLENGES?

Fu-kuo Chang (Stanford University)

BIO-INSPIRED NEUROMORPHIC NETWORK BASED ON CARBON NANOTUBE/POLYMER COMPOSITES

K. Kim, A. Tudor, C-L. Chen, B. Cho, A. M. Shen, D. Lee, and Y. Chen (University of California)

CARBON NANOTUBES FOR IN SITU THERMOMECHANICAL AND THERMOCHEMICAL SENSING IN COMPOSITES

Kalon L Lasater (University of Delaware), Gaurav Pandey (University of Delaware), Erik T Thostenson (University of Delaware)

CONDUCTIVE POLYANILINE NANOCOMPOSITES: ELECTROCHROMIC BEHAVIOR, ELECTROCHEMICAL ENERGY STORAGE AND GIANT MAGNETORESISTANCE SENSOR

John zhanhu Guo (Lamar University), Huige Wei (Lamar University), Hongbo Gu (Lamar University), Jiahua Zhu (Lamar University), Suying Wei (Lamar University)

USE OF CARBON FIBER SENSORS TO DETERMINE THE RESIN FLOW

Mohsen Bakhshi (Hochschule Munchen), Alexander Horoschenkoff (Hochschule Munchen)

MODELING AND SIMULATION OF SLOTTED WAVEGUIDE ANTENNA STIFFENED STRUCTURES

Woon kyung Kim, Robert A Canfield (Virginia Polytechnic Institute and State University (Virginia Tech)), William G Baron, James M Tuss, Jason E Miller (Air Force Research Laboratory)

DIELECTROPHORETICALLY STRUCTURED PIEZOELECTRIC COMPOSITES

Hamideh Khanbarez (Delft University of Technology), Pim Groen (Delft University of Technology), Sybrand Van der zwaag (Delft University of Technology)

FUNCTIONALIZED GRAPHENE-BATIO₃/FERROELECTRIC POLYMER NANOCOMPOSITES WITH EXCELLENT DIELECTRIC PROPERTIES

Zhi-min Dang (University of Science and Technology Beijing), Dongrui Wang (University of Science and Technology Beijing)

MANUFACTURING OF PREPREG WITH MICROCAPSULES FOR SELF HEALING COMPOSITES

Sang yup Kim (University of Illinois at Urbana-Champaign), Nancy R Sottos (University of Illinois at Urbana-Champaign), Scott R White (University of Illinois at Urbana-Champaign)

MULTILAYER COMPOSITES WITH SELF-HEALING CAPABILITY BASED ON AN EMAA IONOMER

Antonio Mattia Grande, Luca Castelnovo, Luca Di landro Giuseppe Sala (Polytechnic Institute of Milan), Cinzia Giacomuzzo, Alessandro Francesconi (University of Padua)

SELF-HEALING OF A FIBRE REINFORCED POLYMER COMPOSITE MATERIAL USING METAL TRIFLATES AS CATALYTIC CURING AGENTS

Tim S Coope (University of Bristol), Ian P Bond (University of Bristol), Richard S Trask (University of Bristol), Duncan F Wass (University of Bristol)

AUTONOMOUS RESTORATION OF ELECTRICAL INTERFACES

Nancy R Sottos (University of Illinois at Urbana-Champaign)

THERMAL-MECHANICAL BEHAVIOR OF ACTIVELY COOLED VASCULARIZED COMPOSITES

Anthony M Coppola (University of Illinois at Urbana-Champaign), Nancy R Sottos (University of Illinois at Urbana-Champaign), Scott R White (University of Illinois at Urbana-Champaign)

ACTIVELY COOLED BATTERY PACKAGING USING VASCULAR COMPOSITES

Stephen John Pety (University of Illinois at Urbana-Champaign), Nancy R Sottos (University of Illinois at Urbana-Champaign), Scott R White (University of Illinois at Urbana-Champaign)

**A MULTIFUNCTIONAL MICROPOROUS POLYMER NANOCOMPOSITE WITH GRAPHENE
NANOPLATELETS**

Diandra Rollins (Michigan State University), Lawrence T Drzal (Michigan State University)

**TWO-PHASE PORO-VASCULAR LAMINATES WITH STRUCTURE-PLUS-SURFACE
ROUGHNESS CONTROL**

James P. Thomas, Marriner Merrill, Andrew T. Smith, David Kessler, Michael Baur, Siddiq Qidwai,
Alberto Pique (Naval Research Laboratory), Christopher Kindle (Science Applications International, Inc.)

**MULTIFUNCTIONAL COMPOSITE MATERIALS FOR BIO-INSPIRED SYSTEMS ALLOWING
AUTONOMIC RESPONSE**

Keynote: B. Les Lee (US Air Force Office of Scientific Research)

ENERGY HARVESTING AND SHOCK MITIGATION IN COMPOSITE STRUCTURES

Chris Lynch (University of California, Los Angeles)

**AUTONOMIC BIOMOLECULAR MATERIAL SYSTEMS AS MULTIFUNCTIONAL
COMPOSITES**

Donald Joseph Leo

**THROUGH-THICKNESS ELECTRICAL RESISTANCE IN GLASS/EPOXY/CNTS COMPOSITE
LAMINATES SUBJECTED TO MECHANICAL LOADING**

Ali Naghshpour (Concordia University), Suong Hoa (Concordia University)

**CARBON FIBER / EXPANDED POLYPROPYLENE COMPOSITE FOR ISOTROPIC
CONDUCTIVITY**

Jeong u Roh (Seoul National University), Woo il Lee (Seoul National University)

**IMPROVED ELECTRICAL CONDUCTIVITY OF CARBON NANOTUBE MAT COMPOSITE
PREPARED BY IN-SITU POLYMERIZATION**

Seong yun Kim (Korea Institute of Science and Technology)

**A STUDY OF THE ELECTROMAGNETIC PROPERTIES OF IRON-MULTIWALLED CARBON
NANOTUBES COMPOSITES**

Gang Liu (Beijing Institute of Aeronautical Materials BIAM), Jianwen Bao (Beijing Institute of Aeronautical
Materials BIAM), Ming Jian Sun (Beihang University), Yan Zhao (Beihang University)

**SELECTIVE LASER SINTERING FOR MANUFACTURING OF EXFOLIATED GRAPHITE
NANOPLATELETS/POLYAMDI12 MULTIFUNCTIONAL NANOCOMPOSITES**

Mehdi Karevan (Georgia Institute of Technology), Shaun Eshraghi (Georgia Institute of Technology),
Suman Das (Georgia Institute of Technology), Kyriaki Kalaitzidou (Georgia Institute of Technology)

OPTIMAL FIBER PLACEMENT INCLUDING EFFECTS OF EMBROIDERY

Tatsuya Nishida (Nagoya University), Tadashige Ikeda (Nagoya University), Atsuhiko Senba (Nagoya University)

ULTRA STRONG, STIFF AND MULTIFUNCTIONAL CARBON NANOTUBE COMPOSITES

Yuntian T. Zhu (North Carolina State University)

COMPARING ELECTROMECHANICAL CHARACTERISTICS OF POLYMER – CARBON NANOTUBE AND POLYMER – CARBON FIBRE – CARBON NANOTUBE COMPOSITES

Cyrill Cattin (McGill University), Wenjiao Liu (McGill University), Pascal Hubert (McGill University)

MULTI-FUNCTIONAL NANOCOMPOSITES

HOW DO CARBON NANOTUBE FIBERS GAIN THEIR STRENGTH?

Keynote: Tsu-wei Chou (University of Delaware)

EROSIVE AND ABRASIVE WEAR RESISTANCE OF TRANSPARENT NANOCOMPOSITE COATINGS FILLED WITH SILICA NANOPARTICLES

Zhong Zhang (National Center for Nanoscience and Technology)

PREPARATION AND PROPERTIES OF MMT/EPOXY/CARBON FIBER MULTI-SCALE COMPOSITE

Shijie Zhang (Xi'an Aerospace Composite Materials Research Institute)

ANALYSIS OF CARBON NANOTUBE INTEGRATED COMPOSITE STRUCTURES USING MULTISCALE APPROACH

Zeaid Hasan (Arizona State University), Aditi Chattopadhyay (Arizona State University)

EFFECT OF CURRING PARAMETERS ON DISPERSION AND ELECTRICAL CONDUCTIVITY OF EPOXY/CNT COMPOSITES DEFINE BY IMAGE ANALYSIS

Ewelina Ciecierska (Technical University of Warsaw), Anna Boczkowska (Technical University of Warsaw), Krzysztof Jan Kurzydłowski (Technical University of Warsaw)

MULTI-SCALE MODELING OF INTERFACIAL BEHAVIOR OF CNT/POLYMER COMPOSITE BY MD AND CFE METHOD

Qingsheng Yang (Beijing University of Technology), Xia Liu (Beijing University of Technology)

PREPARATION OF GRAPHENE WITH CONTROLLED REDUCTION DEGREE AND STUDY OF ELECTROMAGNETIC PROPERTIES OF THEIR NANOCOMPOSITES

Qi Dong (Beihang University), Yan Zhao (Beihang University), Yijun Jiang (COMAC Sadri), Xionggang Shen (Beihang University)

ELECTROMAGNETIC PROPERTIES OF COBALT-REDUCED GRAPHENE OXIDE (CO-RGO)/EPOXY COMPOSITES

Yan Wang (Beijing University of Aeronautics and Astronautics), Yan Zhao (Beihang University), Yuqin Su (Beihang University), Xiaohua Lu (Tsinghua University)

EFFECT OF HUMIDITY ON ELECTRICAL CONDUCTIVITY OF CARBON NANOTUBE-MODIFIED EPOXY

Behnam Ashrafi (National Research Council Canada)

MULTI-FUNCTIONAL SMART COMPOSITES

CHARACTERIZATION OF MULTI-FUNCTIONAL COMPOSITES WITH PRINTED PRESSURE SENSORS

Dominik Krumm (Chemnitz University of Technology), Marko Iling (Chemnitz University of Technology), Stephan Odenwald (Chemnitz University of Technology)

IN SITU MONITORING OF NANOPARTICLE FILTRATION IN CARBON NANOMATERIAL/GLASS FIBER/ POLYESTER MULTISCALE COMPOSITES DURING VARTM

Joel renaud Ngouanom Gnidakouong, Young Bin Park, Myungsoo Kim, Hyung Wook Park, Ho soon jeong, Young bok Jung, Kyungsik han, Sung Kyu ahn (Ulsan National Institute of Science and Technology), Joung-man Park (Gyeongsang National University)

PIEZORESISTANCE CHARACTERIZATION OF PVDF-MWNT NANOCOMPOSITES

Reza Rizvi (University of Toronto), Hani E Naguib (University of Toronto)

NANOINDENTATION RESPONSE OF PIEZOELECTRIC COMPOSITE MATERIALS

Guang Cheng (State University of New York at Stony Brook), T.a. Venkatesh (State University of New York at Stony Brook)

PREPARATION AND CHARACTERIZATION OF NANOCELLULOSE/PVA GREEN COMPOSITES

Hitoshi Takagi (University of Tokushima)

MAGNETOELASTIC RESPONSES OF A BI-LAYERED COMPOSITE CYLINDER WITH AN EMBEDDED TIME-HARMONIC EIGENSTRAIN

Hamid Akbarzadeh (University of New Brunswick), Armin Abedini (University of New Brunswick), Zengtao Chen (University of New Brunswick)

CARBON FIBRE SENSOR FOR CRACK MONITORING OF COMPOSITE MATERIALS

Tobias Müller (Universität der Bundeswehr Munchen), Alexander Horoschenkoff (Hochschule Munchen), Helmut Rapp (Universität der Bundeswehr Munchen)

BINARY BRUSHES: A NOVEL APPROACH TOWARDS ENHANCED INTERFACIAL TUNABILITY IN MULTIFUNCTIONAL POLYMER NANOCOMPOSITES

Bharath Natarajan, Ying Li, Linda Schadler (Rensselaer Polytechnic Institute), Tony Neely, Atri Rungta, Brian C Benicewicz (University of South Carolina - Columbia)

ADAPTATION OF DEVELOPING TENDON-TO-BONE INSERTION SITE TO OPTIMIZE STRESS ENVIRONMENT

Yanxin Liu, Annie Gitomer Schwartz, Stavros Thomopoulos, Guy M Genin (Washington University in St. Louis), Victor Mark Birman (Missouri University of Science and Technology)

**EFFECTS OF POROSITY SHAPE ON THE ELECTROMECHANICAL RESPONSE OF 3-3
PIEZOELECTRIC FOAMS**

Krishna S Challagulla (Laurentian University), Benjamin V Nguyen (Laurentian University)

**EFFECT OF FOAM SHAPE AND PIEZOELECTRIC MATERIAL PROPERTIES ON THE
ELECTROMECHANICAL RESPONSE OF 3-3 PIEZOELECTRIC FOAMS**

Krishna S Challagulla (Laurentian University), Jaspreet Singh (Laurentian University), T.a. Venkatesh
(State University of New York at Stony Brook)

**THE BEHAVIOUR OF MAGNETO-RHEOLOGICAL ELASTOMERS UNDER EQUI-BIAXIAL
TENSION**

Philip Harrison (University of Glasgow), Gerlind Schubert (University of Glasgow), Zaoyang Guo
(Chongqing University)

**SHAPE MEMORY ALLOY LAMINATE FOR DESIGN OF SELF-FOLDING RECONFIGURABLE
STRUCTURES**

Edwin Alexander Peraza-hernandez (Texas A&M University), Darren John Hartl (Texas A&M University),
Dimitris C Lagoudas (Texas A&M University)

**ANALYTICAL AND NUMERICAL MODELING FOR 3D SMART ORTHOTROPIC GRID-
REINFORCED COMPOSITE STRUCTURES**

Edris Hassan (Dalhousie University)

SHAPE MEMORY POLYMER BASED NANOCOMPOSITE ACTUATORS

Qing-qing Ni (Shinshu University)

ASYMPTOTIC HOMOGENIZATION MODELING OF MAGNETO-ELECTRIC SMART

Alexander L. Kalamkarov (Dalhousie University)

**ELECTRICAL BEHAVIOR OF A CFRP UNIDIRECTIONAL LAMINATE UNDER
TEMPERATURE VARIATION**

Kosuke Takahashi (Tokyo Institute of Technology), Takahiro Fujimura (Tokyo Institute of Technology),
Kazuaki Inaba (Tokyo Institute of Technology), Kikuo Kishimoto (Tokyo Institute of Technology)

MULTI-SCALE MODELING

PARAMETRIC STUDY OF SIMULATION PARAMETERS FOR MOLECULAR DYNAMICS MODELING OF REACTIVE CARBON GASES USING REAXFF

Benjamin D. Jensen (Michigan Technological University), Ananyo Bandyopadhyay (Michigan Technological University), Kristopher E. Wise (NASA), Gregory Odegard (Michigan Technological University)

APPROACH FOR DRY TEXTILE COMPOSITE FORMING SIMULATION

Masato Nishi (JSOL Corporation), Tei Hirashima (JSOL Corporation)

MESO-MECHANICAL INVESTIGATION OF WOVEN CARBON FIBER REINFORCED PLASTIC

Bertram Stier (Rheinisch Westfälische Technische Hochschule Aachen), Jaan Willem Simon (Rheinisch Westfälische Technische Hochschule Aachen), Stefanie Reese (Rheinisch Westfälische Technische Hochschule Aachen)

MOLECULAR MODELING OF PHYSICAL AGING IN EPOXY POLYMERS

Ananyo Bandyopadhyay (Michigan Technological University), Gregory Odegard (Michigan Technological University)

NUMERICAL MODELLING OF THE WEAVING PROCESS FOR TEXTILE COMPOSITE

Jérôme Vilfayeau (ENSAIT), David Crepin, Damien Soulat, François Boussu (Ecole Nationale Supérieure des Arts et Industries Textiles), Philippe Boisse (Institut National des Sciences Appliquées de Lyon)

A NOVEL APPROACH TO MODELLING OF FIBER-REINFORCED COMPOSITES WITH CARBON NANOTUBES

Valentin S. Romanov (Katholieke Universiteit Leuven), Stepan V. Lomov (Katholieke Universiteit Leuven), Larissa Gorbatikh (Katholieke Universiteit Leuven), Ignaas Verpoest (Katholieke Universiteit Leuven)

MULTISCALE ANALYSIS FOR PREDICTION OF STRENGTH IN TEXTILES UNDER COMBINED THERMOMECHANICAL LOADING

Wesley Ross Mclendon (Texas A&M University), John D Whitcomb (Texas A&M University)

MOLECULAR DYNAMICS AND THE CORRESPONDING RHEOLOGICAL RESPONSE OF POLYMER NANOCOMPOSITES

Dong gi Seong (Korea Institute of Materials Science)

NUMERICAL DESIGN OF COMPOSITE MATERIALS THROUGH MULTI-SCALE COMPUTER SIMULATION

John Leach (Battelle Memorial Institute), James Mackiewicz

ESTIMATION OF RESIN FLOW FOR FRP BASE ON MPS METHOD

Shota Nodomi (Osaka University), Tetsusei Kurashiki (Osaka University), Ziming Guo (Osaka University), Gaku Yoshikawa (Osaka University), Fumikazu Miyasaka (Osaka University)

**FREE EDGE ANALYSIS OF CFRP LAMINATES BASED ON A HOMOGENIZATION THEORY
FOR TIME-DEPENDENT COMPOSITES**

Keita Goto (Tsukuba University), Tetsuya Matsuda (Tsukuba University)

NANOCLAYS

HIGH-PERFORMANCE EPOXY HYBRID NANOCOMPOSITES MODIFIED BY NANOCLAY AND PES

Boming Zhang (Beihang University), Yang Wang (Beihang University)

MIXED MODE FRACTURE BEHAVIOR OF EPOXY/NANOCLAY NANOCOMPOSITES

Michele Zappalorto (University of Padua), Marco Salviato (), Marino Quaresimin (University of Padua)

FABRICATION AND PROPERTY STUDY OF POLYMER/FIBER/CLAY TERNARY COMPOSITES

Xu Li (Istitute of Materials research and Engineering)

DEVELOPMENT HIGH TEMPERATURE RESISTANT MATERIALS USING CARBON/PHENOLIC PREPREGS WITH NANOCCLAYS

Exequiel Santos Rodríguez (Universidad Nacional de Mar del Plata)

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ENHANCED MECHANICAL AND ELECTRICAL PROPERTIES OF IN-SITU CROSS-LINKED BUCKYPAPER

Jianwei Zhang (National University of Defense Technology), Dazhi Jiang (National University of Defense Technology), Hua-xin Peng (University of Bristol)

MECHANISMS OF STRAIN INDUCED ALIGNMENT OF CARBON NANOTUBES (CNT): PROCESS SCALE-UP AND QUASI-CONTINUOUS HIGHLY ALIGNED CNT MATERIAL

Richard Liang (Florida State University)

EFFECT OF IRON-DEPOSITED REDUCED GRAPHENE OXIDES ON THE NEAR-FIELD ELECTROMAGNETIC ABSORBING PROPERTY OF COMPOSITE FILMS

Jin woo Yi (Korea Institute of Materials Science)

SWCNT FUNCTIONALIZATION FOR OPTIMIZED ELECTRICAL CONDUCTIVITY OF EPOXY MATRICES

Yadienka Martinez rubi, Christopher Kingston, Benoit Simard (NRC), Jose Miguel Gonzalez-dominguez, Alejandro Anson-casaos, Maria Teresa Martinez (Consejo Superior de Investigaciones Cientificas (CSIC))

ELABORATION AND INVESTIGATION ABOUT THE MECHANICAL PROPERTIES OF REINFORCED ALIGNED MULTI-WALLED CARBON NANOTUBE CARPETS COMPOSITES

Jonathan Bouillonc (Commissariat a lenergie atomique et aux energies alternatives CEA)

ATOMISTIC SIMULATION OF DEFORMATION AND FAILURE MECHANISMS IN CU/SIC NANOCOMPOSITES

Zhenyu Yang (Beijing University of Aeronautics and Astronautics)

SWCNT COMPOSITES, INTERFACIAL STRENGTH AND MECHANICAL PROPERTIES

R. mikael Larsen (Aalborg University), Jing Ma (Aalborg University)

THE ROLE OF NITROGEN ON CARBON NANOTUBES-GRAFTED ACTIVATED CARBON FIBERS

Yu-chun Chiang (Yuan Ze University)

EFFECT OF NANOCLAY ON FIRE PERFORMANCE OF HYBRID NANOCOMPOSITE

Quynh Thuy Nguyen (University of Melbourne), Priyan Mendis (University of Melbourne), Tuan Ngo (University of Melbourne), Debes Bhattacharyya (University of Auckland)

EFFECT OF MORPHOLOGY ON FRACTURE TOUGHNESS OF THERMOPLASTIC/THERMOSET/CLAY HYBRID NANOCOMPOSITES

Sina Chaeichian (Concordia University), Paula Wood-adams (Concordia University), Suong Hoa (Concordia University)

PROCESSING AND TACTICITY EFFECT ON GLASS TRANSITION TEMPERATURE OF PMMA/GRAPHENE NANO-COMPOSITES.

Shigeru Aoyama (University of Minnesota - Twin Cities Campus), Ken-Hsuan Liao (University of Minnesota - Twin Cities Campus), Christopher W. Macosko (University of Minnesota - Twin Cities Campus)

ON SLIDING FRICTION OF PEEL-PLY TEXTURED EPOXY RESIN SURFACES CONTAMINATED BY AIRCRAFT OPERATING FLUIDS

Lennart Weiß (Deutsches Zentrum fuer Luft- und Raumfahrt e.V. (DLR)), Thilo Glaser (Deutsches Zentrum fuer Luft- und Raumfahrt e.V. (DLR)), Christian Hühne (Deutsches Zentrum fuer Luft- und Raumfahrt e.V. (DLR))

HYBRID WOVEN GLASS FIBRE FABRIC-CARBON NANOTUBE-EPOXY COMPOSITES

Tina Lekakou (University of Surrey)

FUNCTIONAL COMPOSITES OF EPOXY / SILVER-FILLER USING SELF-ASSEMBLY PHASE STRUCTURES

Hajime Kishi (University of Hyogo)

ELECTROSPUN NANOFIBROUS COMPOSITES TO CONTROL DRUG RELEASE AND INTERACTION BETWEEN HYDROPHILIC DRUG AND HYDROPHOBIC BLENDED POLYMER MATRIX

Yu Dong (Curtin University of Technology), Hazim J. Haroosh (Curtin University of Technology)

CERAMIC/METAL NANOCOMPOSITES: LYOPHILIZATION AND SPARK PLASMA SINTERING

Carlos Fidel Gutierrez-Gonzalez, Ramon Torrecillas, Sonia Lopez-esteban (Consejo Superior de Investigaciones Cientificas (CSIC)), Said Agouram (Universidad Politecnica de Valencia)

SYNTHESIS OF METAL AND METAL OXIDE/CNTS HYBRID NANOPARTICLES AND THEIR REINFORCEMENTS IN POLYMERS

Vijaya K Rangari (Tuskegee University)

CARBON NANOFIBERS WITH MULTI-CHANNELED SILICON COMPARTMENTS: FABRICATION AND ELECTROCHEMICAL PROPERTIES

Hosung Yang (Seoul National University), Byoung-sun Lee (Seoul National University), Woong-ryeol Yu (Seoul National University)

MICROSCOPIC PROPERTIES AND NUMERICAL SIMULATION OF ALIGNED CNT SHEET COMPOSITES

Tsuda Terumasa (The University of Tokyo)

SELF-DISPERSION OF CARBON NANOTUBES IN THERMOPLAST POLYMER

Ekaterina Pavlenko, Pascal Puech, Wolfgang Bacsá (Universite Paul Sabatier (Toulouse III)), Victoria Tishkova, Philippe Salles (Centre National de la recherche scientifique CNRS)

STIFF AND DUCTILE NANOCOMPOSITES OF EPOXY REINFORCED WITH CELLULOSE NANOFIBRILS

Mohd Farhan Ansari (Royal Institute of Technology), Sylvain Galland (Royal Institute of Technology), Patrik Sven Fernberg (Swerea SICOMP), Lars A. Berglund (Royal Institute of Technology)

MICROSTRUCTURE AND MECHANICAL PROPERTIES OF ISOTACTIC POLYPROPYLENE REINFORCED WITH TiO₂ NANOPARTICLES

Ahmad Zohre vand (Ecole Polytechnique de Montreal), Abdellah Ajji (Ecole Polytechnique de Montreal), Frej Mighri (Laval University)

OPTIMIZING THE PRODUCTION OF NANOCOMPOSITES VIA EXTRUSION TECHNIQUES USING NANOPARTICLE CONTAINING DISPERSIONS AND THEIR DISPERSION QUALITY

Irene Hassinger (Institut fuer Verbundwerkstoffe GmbH), Thomas Burkhart (Institut fuer Verbundwerkstoffe GmbH), Rolf Walter (Institut fuer Verbundwerkstoffe GmbH)

NANOCOMPOSITES - POSTER

**ELECTRICAL PROPERTIES OF SELF-ALIGNED IN-SITU REDUCED GRAPHENE
OXIDE/EPOXY NANOCOMPOSITES**

Nariman Yousefi, Xiuyi Lin, Qingbin Zheng, Xi Shen, Jayaram R Pothnis, Jingjing Jia, Jang-kyo Kim

WRINKLING IN GRAPHENE OXIDE PAPERS: EFFECT ON YOUNG'S MODULUS

Xi Shen, Xiuyi Lin, Nariman Yousefi, Jingjing Jia, Jang-kyo Kim

**THE TOUGHNESS OF EPOXY POLYMERS AND FIBRE COMPOSITES MODIFIED WITH
RUBBER MICROPARTICLES AND SILICA NANOPARTICLES**

Tony Kinloch

**NANOCLAY EXFOLIATION PROCESS FOR EPOXY/ORGANOCLAY NANOCOMPOSITES:
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Wiwat Keyoonwong, Masatoshi Kubouchi, Saiko Aoki

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Keynote: Hiroyuki Hamada (Kyoto Institute of Technology), Asami Nakai (Gifu University)

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Theresa Foerster (Leibniz Institute of Polymer Research Dresden), Edith Maeder (Leibniz Institute of Polymer Research Dresden), David Jesson (University of Surrey), John F. Watts (University of Surrey)

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Zhong-jia Yang (Beihang University), Yizhuo Gu (Beihang University), Xuelin Tan (Beihang University), Min Li (Beihang University), Zuoguang Zhang (Beijing University of Aeronautics and Astronautics)

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Gilbert Lebrun (University of Quebec at Trois-Rivieres)

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Fang Mai (Queen Mary and Westfield College, University of London), Emiliano Bilotti (Queen Mary and Westfield College, University of London), Ton Peijs (Queen Mary and Westfield College, University of London)

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Patrícia Câmara Miléo (Universidade de Sao Paulo)

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Alexander Bismarck (Imperial College of Science), Siti rosminah Shamsuddin (Imperial College of Science),
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Nhan Vo hong, Aart Willem Van vuure , Peter Van puyvelde, Ignaas Verpoest (Katholieke Universiteit
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Michael Scheerer (Aerospace & Advanced Composites GmbH), Daniel Lager (Aerospace & Advanced Composites GmbH), Firat Goeral (Aerospace & Advanced Composites GmbH)

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LASER WELDING MODELLING FOR THERMOPLASTIC COMPOSITE AND DEVELOPMENT OF AN ADAPTED MATERIAL CHARACTERIZATION METHOD

Mylene Deleglise (Ecole des Mines de Douai), Benoit Cosson (Ecole des Mines de Douai)

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Christian Brecher (Fraunhofer Institute for Production Technology), Michael Emonts (Fraunhofer Institute for Production Technology), Joffrey Stimpfl (Fraunhofer Institute for Production Technology)

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Pierre Coulon (École de technologie supérieure - Université du Québec), Martine Dube (École de technologie supérieure - Université du Québec), Jean-françois Chatelain (École de technologie supérieure - Université du Québec)

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Simon Gosselin (University of Ottawa), Francois Robitaille (University of Ottawa), Mohammed Yandouzi (University of Ottawa), Bertrand Jodoin (University of Ottawa)

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Kazufumi Nakazawa (Kyoto Institute of Technology), Toshihiro Motochika (Kyoto Institute of Technology), Mitsuru Takagi (Kaji Group Co. Ltd), Akio Ohtani (Gifu University), Asami Nakai (Gifu University)

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Kazuhiro Sakata (Nihon University), Goich Ben (Nihon University), Hirofumi Nishida

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Julia Studer (Fachhochschule Nordwestschweiz), Kunal Masania (Fachhochschule Nordwestschweiz), Clemens Dransfeld (University of Applied Sciences and Arts Northwestern Switzerland), Nicolas Eguemann (Cross Composite AG)

EFFECT OF FIBER VOLUME FRACTION AND PROCESS ORIENTATION ON MODULES OF POLYETHYLENE GLASS FIBER COMPOSITE FIBER

Amir Khorsand (University of Manitoba), Jayaraman Raghvan (University of Manitoba)

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Ryan J Thorpe (Convergent Manufacturing Technologies Inc.), Anoush Poursartip (University of British Columbia)

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Koichi Bun (Kyoto Institute of Technology), Toshihiro Motochika (Kyoto Institute of Technology), Asami Nakai (Gifu University), Hitoshi Kitamura (Toyobo Co. Ltd.), Hidetoshi Sonoda (Toyobo Co. Ltd.), Satoshi Nagoh (Toyobo Co., Ltd.)

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Takayuki Shimizu (Mitsubishi Heavy Industries, Ltd.), Toshio Abe (Mitsubishi Heavy Industries, Ltd.)

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Mehdi Haghshenas (University of British Columbia), Reza Vaziri (University of British Columbia), Anoush Poursartip (University of British Columbia)

MODELING AND CHARACTERIZATION OF THERMOPLASTIC COMPOSITES PEEK/CARBON

Kouwonou Kodjo Dodji (Ecole de Technologie Superieure), Tan Pham (École de technologie supérieure - Université du Québec), Gilbert Lebrun (University of Quebec at Trois-Rivieres)

PROCESSING – POSTER

**FABRICATION AND MECHANICAL PROPERTIES OF SELF-REINFORCED POLYESTER
DOUBLE COVERED UNCOMMINGLED YARN COMPOSITES**

Chang-mou Wu

**DSC INVESTIGATION OF THE INFLUENCE OF CARBON CONTENT ON PEEK
CRYSTALLISATION**

Olivier De almeida, Emeline Bessard, Gérard Bernhart

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Daniel Brabandt, Gisela Lanza, Patrick Bingemann

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Anais Farrugia(Institut Clément Ader), Gilles Dusserre (Institut Clément Ader), Thierry Cutard (Institut Clément Ader), Magali Rollin, Stephanie Fouquet (Herakles)

POLY (VINYL ALCOHOL)/GRAPHENE OXIDE FIBER PREPARED BY GEL PROCESS

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Andre Antoine Renaud Wilmes (Imperial College of Science), Silvestre T Pinho (Imperial College of Science)

CONTRIBUTIONS TO THE PROCESS MODELLING OF RESIN INFUSION UNDER FLEXIBLE TOOLING (RIFT) MANUFACTURING FOR COMPOSITE AEROSTRUCTURES

Robert Samuel Pierce (Monash University), Brian George Falzon (Queen's University Belfast), Mark Thompson (Monash University), Romain Boman (Universite de Liege)

GAS PERMEABILITY OF PARTIALLY SATURATED FABRICS

Thomas Anthony Cender (University of Delaware), Pavel Simacek (University of Delaware), Suresh G Advani (University of Delaware)

MODELING ELASTIC PROPERTIES OF RANDOMLY ORIENTED FIBER COMPOSITES

Hadi Moussaddy (Ecole Polytechnique de Montreal), Daniel Therriault (Ecole Polytechnique de Montreal), Martin Lévesque (Ecole Polytechnique de Montreal)

**STIMULUS RESPONSIVE POLYMER
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**WATER-INDUCED SHAPE MEMORY EFFECT OF EPOXY-BASED SHAPE MEMORY
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Wenxin Wang (Harbin Institute of Technology), Haibao Lu (Harbin Institute of Technology), Yanju Liu (Harbin Institute of Technology), Jinsong Leng (Harbin Institute of Technology)

SMART COMPOSITE SURFACE WITH IN-SITU TUNABLE ADHESION BEHAVIOR

Tae-hyung Kang (Seoul National University), Seok bin Hong (Seoul National University), Tae-jun Ko (Seoul National University), Kyu hwan Oh (Seoul National University), Woong-ryeol Yu (Seoul National University)

**THERMO-MECHANICAL PERFORMANCE AND FATIGUE CYCLING OF NOVEL
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Gyaneshwar P. Tandon (University of Dayton), Thao T Gibson (University of Dayton), Richard Coomer (Southwestern Ohio Council for Higher Education), Jeff W Baur (Air Force Research Laboratory)

**TRANSMISSION ELECTRON MICROSCOPY CHARACTERIZATION OF EFFECT OF
GRAPHITE IN ZRB2-BASED COMPOSITES**

Liyuan Qin, Songhe Meng, Weihua Xie, Hua Jin, Chenghai Xu (Harbin Institute of Technology)

**STIMULUS RESPONSIVE POLYMER AND MULTIFUNCTIONAL COMPOSITES:
CHALLENGES AND PROSPECTS**

Keynote: Jinsong Leng (Harbin Institute of Technology)

**NANOPAPER ENABLED SHAPE-MEMORY POLYMER COMPOSITE FOR ELECTRICAL
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Haibao Lu (Harbin Institute of Technology)

**DESIGN AND CHARACTERIZATION OF FILAMENT-WOUND COMPOSITE SHELLS
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Zaiwen Lin (Harbin Institute of Technology)

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BENDING DEFORMATION LIMITS FOR CORRUGATED MORPHING SKINS

Andre Schmitz, Peter Horst

EFFECT OF SIZING ON THE INTERFACIAL PROPERTIES OF CARBON FIBER/BMI UNDER DIFFERENT PROCESSING TEMPERATURE

Qing Wu, Min Li, Mingming Zhu, Yizhuo Gu, Yanxia Li, Zuoguang Zhang

EXPERIMENTAL EVIDENCE OF THE INTERFACE/INTERPHASE FORMATION BETWEEN POWDER COATING AND COMPOSITE MATERIAL

Ahmad Fahs, Aurore Lafabrier

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Indrek Must, Alvo Aabloo, Inga Põldsalu, Friedrich Kaasik, Urmas Johanson, Andres Punning

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Larisa Maskaeva, Natalia Forostyanaya, Zinaida Smirnova, Vyacheslav Markov

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Hua Jin, Songhe Meng, Weihua Xie, Chenghai Xu, Liyuan Qin

CONSTITUTIVE THEORY OF YEOH TYPE ELASTIC DIELECTRICS POLYMER

Liwu Liu, Xinghuan Qi, Yinzi Zhao, Yanju Liu

THERMAL DECOMPOSITION OF PBO FIBER AND HIGH THERMAL MECHANICAL PROPERTIES OF PBO COMPOSITE MATERIALS

Liping Bian, Jiayu Xiao, Jingcheng Zeng, Suli Xing, Changping Yin, Jinshui Yang

STRUCTURAL HEALTH MONITORING

DETECTION OF DEFECTS IN COMPOSITE STRUCTURES WITH 3D LASER VIBROMETER

Patrick Peres (ASTRIUM Space Transportation), David Barnoncel (ASTRIUM Space Transportation),
Wieslaw Jerzy Staszewski (Technical University of Cracow)

IMPACT LOCALIZATION IN ANISOTROPIC COMPOSITE PLATES INSTRUMENTED WITH A NETWORK OF PIEZOELECTRIC SENSORS

Andre Luiz De Aguiar Ribeiro (Universidade Estadual de Campinas), Carlos Alberto Cimini Jr (Universidade Federal de Minas Gerais), Niederauer Mastelari (Universidade Estadual de Campinas)

RELEVANCE OF ENVIRONMENTAL INFLUENCES FOR LAMB WAVE BASED SHM WITH PIEZOELECTRIC ELEMENTS

Konstantin Jonas Schubert (Faserinstitut Bremen e.V.), Oliver Focke (Faserinstitut Bremen e.V.), Axel Siegfried Herrmann (Universitat Bremen)

STRUCTURAL HEALTH MONITORING IN COMPOSITE STRUCTURES USING EMBEDDED WIRE SENSORS

Pierre Mertiny (University of Alberta), Martin Ocker (University of Alberta), Christian Hansen (Universitat Hannover), Cagri Ayranci (University of Alberta)

STRUCTURAL OPTIMIZATION

EFFECTS OF VISCOELASTICITY ON THE DEPLOYMENT OF BISTABLE TAPE SPRINGS

Alex W Brinkmeyer (University of Bristol), Sergio Pellegrino (California Institute of Technology), Paul M Weaver (University of Bristol), Matthew Santer (Imperial College of Science)

OPTIMAL DESIGN OF A COMPOSITE STRUCTURE RELEVANT TO LAMINATE DESIGN GUIDELINES

Alexis Lasseigne (ONERA), François-xavier Irisarri (ONERA), Rodolphe Le riche (Ecole Nationale Supérieure des Mines de St-Etienne)

COMPARISON OF RESPONSE OF GROOVED COMPOSITES TO LOADING VIA SPHERICAL AND CYLINDRICAL INDENTERS

Holly K Jeffrey (Massachusetts Institute of Technology), Paul A Lagace (Massachusetts Institute of Technology)

OPTIMIZED FIBER STEERING AND LAYER STACKING FOR ELASTICALLY TAILORED, DAMAGE TOLERANT LAMINATES

Wenli Liu (University of Bath), Richard Butler (University of Bath), Andrew Thomas Rhead (University of Bath)

THE DESIGN OF A PRE-WARPED BUS DOOR FOR LOW COST COMPOSITE MANUFACTURING

Zhi-cheng Yu (Composites Innovation Centre)

OPTIMIZATION OF VARIABLE ANGLE TOW PLATES WITH ONE FREE EDGE USING LAMINATION PARAMETERS

Zhangming Wu (University of Bristol), Gangadharan Raju (University of Bristol), Paul M Weaver (University of Bristol)

ACCOUNTING FOR MANUFACTURABILITY CONSTRAINTS IN THE OPTIMISATION OF COMPOSITE STRUCTURES

Vinay Madhavan (Cenaero), Philippe Martiny (Cenaero)

STACKING SEQUENCE TABLES FOR LAMINATE BLENDING OPTIMIZATION

François-xavier Irisarri (ONERA), Alexis Lasseigne (ONERA), François-henri Leroy (ONERA)

STRUCTURAL RESPONSE & DESIGN

UNEXPECTED TWISTING CURVATURE GENERATION OF BISTABLE CFRP LAMINATE DUE TO THE UNCERTAINTY OF LAY-UP SEQUENCE AND NEGATIVE INITIAL CURVATURE

Junghyun Ryu (Seoul National University), Jong-gu Lee (Seoul National University), Seung-won Kim (Seoul National University), Kyu-jin Cho (Seoul National University), Maenghyo Cho (Seoul National University)

POST-BUCKLING OF DYNAMICALLY LOADED COMPOSITE PANELS USING A REDUCED ORDER MODEL

Eelco Jansen (Universitat Hannover), Tanvir Rahman (TNO DIANA BV), Alexander Meurer (Universitat Hannover), Raimund Rolfes (Universitat Hannover)

A COMPARISON OF CURRENT DESIGN CONCEPTS OF FUSELAGE PANELS UNDER TYPICAL LOAD CONDITIONS

Xiao Cai (Concordia University), Franck Dervault (Borland Software Corporation), Suong Hoa (Concordia University), Ramin Sedaghati (Concordia University)

EXTENDED FINITE ELEMENT METHOD MODELING OF CRACK PATHS IN PARTICLE REINFORCED COMPOSITES

Li MA, Zhi-Yong WANG, Lin-Zhi WU (Harbin Institute of Technology)

NEW DEVELOPMENTS IN STRUCTURE/PROPERTY RELATIONSHIPS

Wendy Wenjun Tian (CSIRO), Buu Dao (CSIRO), Russell John Varley (CSIRO)

OPTIMUM DESIGN OF LAMINATED PLATE WITH DISCRETE PLY ANGLES BASED ON GSPF METHOD

Shutian Liu (Dalian University of Technology)

ROTOR DYNAMICS OF TAPERED COMPOSITE DRIVESHAFT BASED ON A LAGRANGIAN FINITE ELEMENT

Majed Almuslmani (Concordia University), Rajamohan Ganesan (Concordia University)

UNBALANCED AND SYMMETRIC LAMINATES: NEW PERSPECTIVES ON A LESS WELL-KNOWN DESIGN RULE.

Christopher B. York (University of Glasgow)

DAMAGE ACCUMULATION IN A FIBER REINFORCED COMPOSITE FOR SPACE APPLICATIONS

Jihane Ajaja (McGill University), Francois Barthelat (McGill University)

**RESISTANCE OF NICKEL-COATED THERMALLY CYCLED COMPOSITES TO LUNAR DUST
ABRASION**

Marie-josée Potvin (Agence spatiale canadienne Canadian Space Agency), Francis Martin (Agence spatiale canadienne Canadian Space Agency)

EFFECT OF EXTREME TEMPERATURE CYCLES ON DAMAGE IN COMPOSITE LAMINATES

Marie-laure Dano (Laval University), Francis Martin (Agence spatiale canadienne Canadian Space Agency), Marie-josée Potvin (Agence spatiale canadienne Canadian Space Agency), Mathilde Jean-st-laurent (Laval University)

**TENSILE STRENGTH MODELING OF GLASS FIBER-POLYMER COMPOSITES AND
SANDWICH MATERIALS IN FIRE**

Stefanie Feih, Aslina Anjang, Venkata Chevali, Everson Kandare, Adrian Mouritz (Royal Melbourne Institute of Technology)

STRUCTURAL OPTIMISATION OF DISCONTINUOUS FIBRE COMPOSITES

Connie Cheng Qian (University of Nottingham), Lee Thomas Harper (University of Nottingham), Thomas Turner (University of Nottingham), Nicholas Warrior (University of Nottingham)

SYMPOSIUM ON MARINE COMPOSITES

RECENT ADVANCES IN ONR COMPOSITES RESEARCH

Keynote: Yapa D.s. Rajapakse (Office of Naval Research (ONR))

CONSTITUTIVE MODELING OF POLYMERIC MATRIX UNDER MULTI-AXIAL STATIC AND DYNAMIC LOADING

Isaac M Daniel (Northwestern University), Brian Werner (Northwestern University)

STUDY OF FLUID-STRUCTURE INTERACTION ON COMPOSITE STRUCTURAL VIBRATION

Young W Kwon (Naval Postgraduate School)

UNDERWATER RESPONSE OF COMPOSITE PANELS SUBJECTED TO NEAR-FIELD BLAST LOADING

Arun Shukla (University of Rhode Island), Frank Livolsi (University of Rhode Island), Daniel Gracia (University of Rhode Island), James Leblanc (Naval Undersea Warfare Center)

BLAST PARAMETER EFFECTS IN FULL SCALE AIR BLAST ON SANDWICH COMPOSITE PANELS

John Philip Dear (Imperial College of Science)

SNAP-THROUGH INSTABILITY, DELAMINATION AND DAMAGE PROGRESSION IN AIR AND WATER BACKED CURVED SANDWICH STRUCTURES

Romesh Batra (Virginia Polytechnic Institute and State University (Virginia Tech)), Jian Xiao (University of Michigan - Ann Arbor)

RESPONSE OF CYLINDRICAL COMPOSITE STRUCTURES TO UNDERWATER IMPULSIVE LOADING

Siddharth Avachat (Georgia Institute of Technology), Min Zhou (Georgia Institute of Technology)

SANDWICH BEAM WITH INTERNAL RESONATORS SUBJECTED TO BLAST LOADS

Bhisham N Sharma (Purdue University), C.t. Sun (Purdue University)

RESIDUAL STRENGTH OF FULL SCALE GRP LAMINATES WITH RANDOMLY DISTRIBUTED FRAGMENT DAMAGES

Sohrab Kazemahvazi (Royal Institute of Technology), Martin Nilsson (), Dan Zenkert (Royal Institute of Technology)

SHOCK FOCUSING IN WATER IN A CONVERGENT CARBON FIBER COMPOSITE STRUCTURE

Chuanxi Wang (University of Southern California), Veronica Eliasson (University of Southern California)

EFFECT OF FLUID-STRUCTURE INTERACTIONS ON UNDERWATER IMPLOSION DYNAMICS

James Seabury Briscoe (University of Maryland at College Park), Sung Won Lee (University of Maryland at College Park)

STRESS AND STRAIN FIELDS IN SANDWICH T-JOINTS SUBJECTED TO SIMULATED SLAMMING LOADS

Mark Battley (University of Auckland), James Flett (University of Auckland), Tom Allen (University of Auckland)

IMPACT PROPERTIES OF WATER EXPOSED GFRP LAMINATES WITH OUTERMOST STEEL LAYERS

Ezequiel Poodts (University of Bologna), Daniele Ghelli (University of Bologna), Tommaso Maria Brugo (University of Bologna), Riccardo Panciroli (Polytechnic Institute of New York University), Giangiacomo Minak (University of Bologna)

EFFECT OF FOAM CRUSHING IN DOUBLE-CURVATURE SANDWICH PANELS SUBJECTED TO BLAST

Michelle Stephanie Hoo fatt (University of Akron), Dushyanth Sirivolu (University of Akron)

DELAMINATION DAMAGE IN LAMINATED SHELLS

Roberta Massabo (University of Genoa), Francesca Campi (University of Genoa)

INDENTATION AND PENETRATION LAWS VALIDATED FOR COMPOSITE LAMINATES DIFFERENT IN FIBRES AND MATRIX

Valentina Lopresto (University of Naples Federico II), Giancarlo Caprino (University of Naples Federico II), Antonio Langella (University of Naples Federico II)

MODELLING OF THE DELAMINATION OF LAMINATED GLASS RESISTING BLAST LOADING

Paolo Del linz (Imperial College of Science), John Philip Dear (Imperial College of Science)

NON-EXPLOSIVE METHODOLOGY FOR DYNAMIC BLAST LOADING OF WIDE AREA COMPOSITE ARMOR PANELS

Daniel Whisler (University of California, San Diego), Hyonny Kim (University of California, San Diego), Ken-an Lou

EFFECT OF SEA WATER CONFINEMENT ON CYCLIC FATIGUE BEHAVIOR OF MARINE COMPOSITES

Akawut Siriruk (University of Tennessee - Knoxville), Dayakar Penumadu (University of Tennessee - Knoxville)

EFFECT OF WATER ABSORPTION ON TIME-TEMPERATURE DEPENDENT STRENGTH OF UNIDIRECTIONAL CFRP

Yasushi Miyano (Kanazawa Institute of Technology), Syuhei Hara (Kanazawa Institute of Technology), Masayuki Nakada (Kanazawa Institute of Technology)

EFFECT OF COMBINED ENVIRONMENTS ON THE FATIGUE OF CARBON FIBER-VINYLESTER COMPOSITES

Chad S. Korach (State University of New York at Stony Brook), Arash Afshar (State University of New York at Stony Brook), Heng tseng Liao (State University of New York at Stony Brook), Fu-pen Chiang (State University of New York at Stony Brook)

EXPERIMENTAL INVESTIGATION OF THE EFFECT OF UV RADIATION AND SALT WATER ON THE DYNAMIC PROPERTIES AND FAILURE OF CARBON FIBER-VINYLESTER COMPOSITES

Maen Alkhader (State University of New York at Stony Brook), Chad S. Korach (State University of New York at Stony Brook), Fu-pen Chiang (State University of New York at Stony Brook)

EVALUATION OF PROGRESS OF PHYSICAL AGING ON VISCOELASTIC BEHAVIOR OF EPOXY RESIN

Masayuki Nakada (Kanazawa Institute of Technology), Kosuke Hosaki (Kanazawa Institute of Technology), Yasushi Miyano (Kanazawa Institute of Technology)

COMPRESSIVE BEHAVIOUR OF PVC FOAM IN ELEVATED TEMPERATURE USING DIGITAL IMAGE CORRELATION AND A MODIFIED ARCAN FIXTURE

Ole Thybo Thomsen (University of Southampton), Janice Marie Dulieu-barton (University of Southampton), Siavah T Taher (Aalborg University)

THE INFLUENCE OF TEMPERATURE ON THE STABILITY OF POLYMER FOAM CORED SANDWICH STRUCTURES

Janice Marie Dulieu-barton (University of Southampton), Ole Thybo Thomsen (University of Southampton), Shufeng Zhang (University of Southampton)

HOT-WET ENVIRONMENTAL PROPERTIES OF Z-PINNED CARBON-EPOXY COMPOSITES

Adrian Mouritz (Royal Melbourne Institute of Technology)

NONLINEAR BUCKLING OF SYNTACTIC FOAMS WITH IMPERFECT INTERFACE

Adel Shams (Polytechnic Institute of New York University), Matteo Aureli (Polytechnic Institute of New York University), Maurizio Porfiri (Polytechnic Institute of New York University)

PURE MOMENT APPROACH TO DETERMINE MIXED-MODE FRACTURE TOUGHNESS OF SANDWICH FACE/CORE INTERFACES

Christian Berggreen (Technical University of Denmark), George A Kardomateas (Georgia Institute of Technology), Leif A Carlsson (Florida Atlantic University)

G-CONTROL FATIGUE TESTING OF DEBONDED SANDWICH COMPOSITES

Marcello Manca (Technical University of Denmark), Christian Berggreen (Technical University of Denmark), Leif A Carlsson (Florida Atlantic University)

**MANUFACTURING AND IMPACT BEHAVIOR OF SANDWICH COMPOSITES WITH
EMBEDDED GRAPHENE PLATELETS**

Alfred Loos (Michigan State University), Mahmood Haq (Michigan State University), Rehan Umer
(Khalifa University of Science Technology and Research), Lawrence T Drzal (Michigan State University)

**EFFECTS OF NANOCCLAYS AND WOOD FLOUR ON THE PERFORMANCE OF
POLYURETHANE FOAMS**

Mahesh Hosur (Tuskegee University), Gregory Strawder (Tuskegee University), Shaik Jeelani (Tuskegee
University)

**THERMAL AND VISCOELASTIC PROPERTIES OF SC15 EPOXY RESIN COMPOSITES
MODIFIED WITH MONTMORILLONITE NANOCCLAY EXPOSED TO UV RADIATION**

Alfred Tcherbi-narteh (Tuskegee University)

**COMPATIBILITY AND FLAMMABILITY STUDY OF UNSATURATED POLYESTER
/FUNCTIONALISED PHENOLIC RESIN BLEND MATRICES FOR GLASS REINFORCED
COMPOSITES**

Latha Krishnan (University of Bolton), Baljinder Kandola (University of Bolton)

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COMPARISON OF CONSOLIDATED COMPOSITES USING MECHANICAL TESTING AND A MULTI-CRITERIA DECISION MAKING TECHNIQUE UNDER VARIABLE MATERIAL PROPERTIES

Jeremy Leung, Melissa Heinrick, Abbas Milani

SPIN TEST OF THE DISK MADE OF CARBON FIBER REINFORCED THREE-DIMENSIONAL COMPOSITES

Yuichi Nagura, Noboru Hiroshima, Hiroshi Hatta, Ken Goto, Yasuo Kogo

TRANSIENT PLANE WAVES PROPAGATION IN NON-HOMOGENEOUS ELASTIC PLATE

Volodymyr Hutsaylyuk, Heorhiy Sulym, Iaroslav Pasternak, Igor Turchyn

DEGRADATION AND DEFORMATION OF CARBON PHENOLIC ABLATOR UNDER ELEVATED TEMPERATURE PROCESSES

Kohei Fukuda, Yuuki Kubota, Hiroshi Hatta, Yasuo Kogo, Kenichi Hirai, Walter Krenkel, Nico Langhof

MECHANICAL BEHAVIOUR OF GLASS FIBRE-REINFORCED POLYMER THIN RODS

Daxu Zhang, Xiaoyan Wang, Wujun Chen, Fujun Peng, Jinghai Gong, Guozhi Qiu

STUDY OF ELECTROMAGNETIC SHIELD EFFECT OF THE METAL-PLATED CARBON FIBER COMPOSITE

Mee-hye Oh

BENDING STIFFNESS BEHAVIOR OF THICK-WALLED COMPOSITE TUBES

Mohamed El-geuchy, Suong Hoa, Farjad Shadmehri

ON THE ANALYSIS OF A CONTACT FRICTION COMPOSITE-TO-METAL JOINT

Andrei Costache, Konstantinos N. Anyfantis, Christian Berggreen

ADHESIVE STRAIN MEASUREMENT IN PATCH REPAIRED CFRP LAMINATE USING 2D DIC

Mohammad Kashfuddoja, Ramji Manoharan

LUMINESCENT METHOD OF ASSESSING THE STRUCTURAL MODIFICATIONS OF POLYMER MATRICES

Svetlana Karitskaya

MICROSTRUCTURE AND MECHANICAL BEHAVIORS OF THICK-WALLED JOURNAL BEARING GFRP RINGS

Sergei Borisovich Sapozhnikov, Alexandr Viktorovich Bezmelnitsyn, Radii Sergeevich Zinoviev

SURFACE STRESS EFFECT IN THIN FILMS WITH NANOSCALE ROUGHNESS

Mikhail Grekov, Sergey Kostyrko

BLOCK COPOLYMERS ORGANIZATION AT INTERFACE

Diane Fischer, Sophie Bistac, Maurice Brogly

OUT-OF-PLANE TENSILE MODULUS OF UD-CFRP LAMINATE BY 3-POINT BENDING TEST

Eiichi Hara

TEXTILE COMPOSITES

TOWARDS REALISTIC GEOMETRIC MODELING OF WOVEN FABRICS

Guillaume Couégnat (Universite Bordeaux I), Hichem Ayadi (Universite Bordeaux I), Clément Saurat (Universite Bordeaux I), Eric Rohmer (Universite Bordeaux I)

DRAPEABILITY OF GLASS AND STEEL FIBRES KNITTED FABRICS

Marcin Barburski (Technical University of Lodz), Stepan V. Lomov (Katholieke Universiteit Leuven), Kristof Vanclooster (Toray Industries Inc.), Ignaas Verpoest (Katholieke Universiteit Leuven)

MECHANICAL BEHAVIOUR OF 3D WOVEN COMPOSITES UNDER TENSION, COMPRESSION AND BENDING

Shuo Dai (Loughborough University), Paul Cunningham (Loughborough University), Simon Marshall (), Christopher Silva

MODELLING EFFECTS OF GEOMETRIC VARIABILITY ON MECHANICAL PROPERTIES OF 2D TEXTILE COMPOSITES

Mikhail Matveev (University of Nottingham), Andrew C Long (University of Nottingham), Ivor Arthur Jones (University of Nottingham), Guan Lu (First Aircraft institute, AVIC)

OPEN DATA FORMATS AND SCRIPTING IN INTEGRATED MESO-LEVEL TEXTILE COMPOSITE SIMULATIONS

Stepan V. Lomov (Katholieke Universiteit Leuven)

NCF/BMI COMPOSITE MATERIALS: EFFECT OF STITCHING THREADS

Anqi Dong (Beihang University), Xinqing Zhao (Beihang University), Li Zhang (Beihang University), Shan Zhu (Beihang University)

MODELLING OF 3D WOVEN COMPOSITES WITH REALISTIC UNIT CELL GEOMETRY

Steven Daniel Green (University of Bristol), Mikhail Matveev (University of Nottingham), Andrew C Long (University of Nottingham), Stephen Richard Hallett (University of Bristol)

CHARACTERIZATION AND MODELING OF DAMAGE AT THE MESOSCALE OF WOVEN POLYMER MATRIX COMPOSITES.

Christian Fagiano (ONERA), Martin Hirsekorn (ONERA), Gael Grail (ONERA), Vincent Chiaruttini (ONERA)

EVALUATING DEFORMABILITY OF NON-CRIMP FABRIC AND MECHANICAL PERFORMANCE OF NON-CRIMP FABRIC COMPOSITES

Long Li (Beijing University of Aeronautics and Astronautics), Yan Zhao (Beihang University), Lijun Zhang (Beihang University), Wei Li (Hafei Aviation Industry Co. Ltd)

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Tony Kinloch(Imperial College of Science, Technology and Medicine, University of London)

Dear Colleagues,

On behalf of the organizing committee and all of those who have been involved in the preparation for the 19th International Conference on Composite Materials (ICCM19), we wish to welcome all participants of ICCM19. It is a great honor and our great pleasure to host ICCM19 in Montreal for the first time.

We expect about 1600 participants from around the world representing 47 countries. ICCM19 continues to succeed in the tradition of the ICCM as the biggest and the best conference in composite materials with the contribution of all the participants and the related societies from all over the world. Also it will offer the perfect opportunity to meet colleagues and make friends working in the same field.

In ICCM19, the scientific program has been organized into multidisciplinary sessions for specialists in composite materials and its related fields. We have planned 8 plenary lectures and 10 key note lectures. For ICCM19, we have introduced a new format for the poster presentations. This allows the poster presenters more assured audience and more opportunities for presentation. There are about 230 oral sessions (about 1000 oral presentations) and 18 poster sessions (about 250 poster presentations). ICCM19 will provide every participant the best platform to discuss the cutting edge issues which arise from the broad areas of composite materials.

We wish to take this opportunity to thank all the sponsors, and supporters for their generous support for ICCM19. We would like to convey our sincere gratitude to the international members for their valuable support as well as to the members of the ICCM19 organizing committee for their tremendous efforts in making ICCM19 a success.

We wish all of you a fruitful meeting and we hope that you will benefit from the rich scientific discussions, and that your visit to Montreal will last as a pleasant memory.

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