Preliminary Program of

The 14th Japanese-European Symposium on Composite Materials

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September 16-18, 2015

Kanazawa Institute of Technology, Kanazawa, Japan

Jointly organized by
Japan Society for Composite Materials (JSCM)
and
European Society for Composite Materials (ESCM)
September 16, Wednesday

Facility Tour: Industrial Technology Center of Fukui Prefecture

September 17, Thursday

8:45 Opening

Session 1: Thermoplastic Composites -1 (9:00-10:30)

9:00-9:30 Keynote Lecture
Thermoplastic composites: from raw materials and semi-products to final parts through modelling
1Department of Mechanical Engineering, ESTG, Polytechnic Institute of Leiria
2Department of Mechanical Engineering, ISEP
3Institute of Polymers and Composites/I3N, Minho University
4Faculty of Engineering, University of Porto
5Institute of Mechanical Engineering and Industrial Management
6School of Technology, IPCA

9:30-9:50
Newly designed carbon fibre reinforced thermoplastic stampable sheet
Takeshi Ishikawa and Masao Tomioka
Mitsubishi Rayon Co., Ltd., Toyohashi Research Laboratories

9:50-10:10
Impact resistance of textile composites reinforced with E-glass/PP commingled yarns
Erdem Selver, Prasad Potluri and Costas Soutis
University of Manchester

10:10-10:30
Improvement in interfacial bonding between carbon fibers and polypropylene matrix by atmospheric pressure plasma treatment
M.Tanaka, N.Osawa, T.Kitagawa, M.Kanesaki, H.Saito and S.Osawa
1Department of Mechanical Engineering, Kanazawa Institute of Technology
2Department of Electrical and Electronic Engineering, Kanazawa Institute of Technology
10:30-11:00 Coffee Break

Session 2: Mechanical Properties -1 (11:00-12:20)

11:00-11:20
Recycling of thermoplastic CFRP with electrodynamic fragmentation
M. Roux¹, N. Eguémann², L. Giger¹,², A. Bian¹, and C. Dransfeld¹
¹ FHNW University of Applied Sciences and Arts Northwestern Switzerland, Institute of Polymer Engineering
² Cross Composite AG

11:20-11:40
Accelerated fatigue testing of thermoplastic composite materials at ultrasonic frequencies
D. Backe and F. Balle
Institute of Materials Science and Engineering (WKK), University of Kaiserslautern

11:40-12:00
Thin-ply composites with engineered translaminar fracture behaviour
S. T. Pinho¹, G. Bullegas¹, S. Pimenta²
¹ Department of Aeronautics, Imperial College London
² Department of Mechanical Engineering, Imperial College London

12:00-12:20
Modelling the mechanical response of discontinuous composites
Soraia Pimenta¹, Yizhuo Li¹, and Paul Robinson²
¹ Department of Mechanical Engineering, Imperial College London
² Department of Aeronautics, Imperial College London

12:20-13:20 Lunch

13:30-14:20 Plenary Lecture
Mode I fatigue crack propagation of CFRP laminates toughened with CNF interlayer
Masahiro Arai¹, Hiroaki Ito², Masaomi Nishimura³, Masaki Hojo⁴ and Marino Quaresimin⁵
Session 3: Design and Manufacturing (14:30-16:20)

14:30-15:00 Keynote Lecture
Development of composite fan structural guide vane for turbo fan engine
Tsutomu Murakami, Katsuyoshi Moriya and Yusaku Oikawa
IHI Corporation

15:00-15:20
Resin flow control and energy-efficient curing using interdigital electrode array for VaRTM
Ryosuke Matsuzaki\textsuperscript{1}, Shinya Hatori\textsuperscript{1} and Akira Todoroki\textsuperscript{2}
\textsuperscript{1}Department of Mechanical Engineering, Tokyo University of Science
\textsuperscript{2}Department of Mechanical Sciences and Engineering, Tokyo Institute of Technology

15:20-15:40
Laser assisted cold sprayed copper coatings on carbon fiber reinforced composites
B. Courant\textsuperscript{1}, V. Gillet\textsuperscript{1,2}, W. Knapp\textsuperscript{1,2}
\textsuperscript{1}Université de Nantes
\textsuperscript{2}CLFA Fraunhofer ILT

15:40-16:00
Renaud Gutkin

16:00-16:20
Bond behavior of GFRP bars in concrete: durability aspects
Rolland Arnaud\textsuperscript{1}, Chataigner Sylvain\textsuperscript{2}, Quiertant Marc\textsuperscript{3}, Benzarti Karim\textsuperscript{3} and Augoul Pierre\textsuperscript{3}
\textsuperscript{1}Cerema, Direction Territoriale Nord-Picardie
\textsuperscript{2}LUNAM Université, Materials and Structures Department, IFSTTAR
\textsuperscript{3}Université Paris-Est, Materials and Structures Department, IFSTTAR

17:00 Reception
September 18, Friday

Session 4: Thermoplastic Composites -2 (9:00-10:30)

9:00-9:30 Keynote Lecture
Research on thermoplastic matrix composites at KU Leuven: innovative modelling and out-of-the-box thinking applied to short fibre, woven tape and honeycomb sandwich thermoplastic composites
Ignas Verpoest
KU Leuven

9:30-9:50
Evaluation of interlaminar shear strength in CF/PA6 laminates with delamination repaired by thermal fusion bonding
M.Kanesaki, M.Tanaka, H.Saito, K.Uzawa, M.Hojo, I. Kimpara
1Innovative Composite Materials Research and Development Center, 2Department of Mechanical Engineering, Kanazawa Institute of Technology, 3Department of Mechanical Engineering and Science, Graduate School of Engineering, Kyoto University, 4Research Laboratory for Integrated Technological Systems, Kanazawa Institute of Technology

9:50-10:10
Direct joining of carbon-fiber reinforced plastic to an aluminum alloy using friction lap joining
Kimiaki Nagatsuka, Shoichiro Yoshida, Atsuki Tsuchiya, Masato Honma, Kazuhiro Nakata
Toray Industries Inc.

10:10-10:30
Investigation on the failure mechanisms of thermoplastic composites fasteners in single-lap shear joints under fatigue loading
B.Fiedler, M.Schuet, H.Wittich and K.Schulte
Institute of Polymers and Composites, Technische Universität Hamburg-Harburg

10:30-11:00 Coffee Break

Session 5: Mechanical Properties -2 (11:00-12:50)

11:00-11:30 Keynote Lecture
Composite optimization in the wing design for JAXA’s EcoWing research project
Yuichiro Aoki, Yuichiro Tekesaki, Sunao Sugimoto and Yutaka Iwahori
Structures and Advanced Composite Research Unit, Japan Aerospace Exploration Agency

11:30-11:50
Numerical simulation of the mechanical behavior of a smart composite platform under static & cyclic loading - DECID2 project.
Monssef Drissi-Habti¹, Immanuel David Madukauwa-David¹,²
¹PRES LUNAM IFSTTAR
²Department of Mechanical Engineering, Massachusetts Institute of Technology

11:50-12:10
Micromechanical finite element analysis on compressive strength of carbon fiber reinforced plastics
Masaaki Nishikawa¹, Ichiro Taketa², Kei Ueda¹, Masaki Hojo¹
¹Department of Mechanical Engineering and Science, Kyoto University
²Toray Industries Inc.

12:10-12:30
Observation of kink-band formation in a unidirectional carbon fiber reinforced plastic during longitudinal compression by means of X-ray computed tomography
Masahito Ueda¹, Kento Mimura¹, Akinori Yoshimura²
¹Nihon University
²Japan Aerospace Exploration Agency

12:30-12:50
Nondestructive evaluation and 3-D imaging of impact damage in CFRP/Ti fibre-metal laminates using synchrotron radiation laminography
Hayato Nakatani¹, Kentaro Kajiwara², Koichi Akita³, Shinji Ogihara⁴
¹Department of Mechanical & Physical Engineering, Osaka City University
²Japan Synchrotron Radiation Research Institute (JASRI),
³Japan Atomic Energy Agency (JAEA)
⁴Tokyo University of Science

12:50-13:50 Lunch

13:50-14:50 Plenary Lecture
Assembly of thermoplastic composites by laser welding
J. Renard
Mines Paris Tech
14:50-15:10 Coffee Break

Session 6: Fatigue (15:10-16:10)

15:10-15:30
Prediction of transverse crack initiation in cross-ply CFRTP laminates in low and high cycle fatigue loadings
Atsushi Hosoi\textsuperscript{1}, Taichi Watanabe\textsuperscript{2}, Akira Kobiki\textsuperscript{3}, Masahiro Kotani\textsuperscript{3} and Hiroyuki Kawada\textsuperscript{1}
\textsuperscript{1} Department of Applied Mechanics and Aerospace Engineering, Waseda University
\textsuperscript{2} Graduate School of Fundamental Science and Engineering, Waseda University
\textsuperscript{3} Production Engineering Center, IHI Corporation

15:30-15:50
A damage-based approach to the fatigue of composite materials
P. A. Carraro, M. Quaresimin
Department of Management and Engineering, University of Padova

15:50-16:10
Estimation of fatigue induced disbonded area in CFRP double-lap joints using embedded FBG sensors
Shigeki Yashiro\textsuperscript{1}, Jumpei Wada\textsuperscript{2} and Yoshihisa Sakaida\textsuperscript{1}
\textsuperscript{1} Department of Mechanical Engineering, Shizuoka University
\textsuperscript{2} Department of Mechanical Engineering, Shizuoka University (Currently, Nippi Corporation)

16:10-16:25 Coffee Break

Session 7: Joint (16:25-17:25)

16:25-16:45
Mechanical evaluation of adhesively bonded joint of CFRPs treated by pulsed laser abrasion
Tomohiro Yokozeki\textsuperscript{1}, Masaru Ishibashi\textsuperscript{2}, Yayoi Kobayashi\textsuperscript{1}
\textsuperscript{1} University of Tokyo
\textsuperscript{2} GSI Creos

16:45-17:05
A critical review of designing bonded joints based on singular stresses
F. París, A. Barroso, V. Mantič
Elasticity and Strength of Materials Group, School of Engineering, University of Seville

17:05-17:25
Arresting crack in composite bonded joint using fiber-reinforcement feature
Shu Minakuchi, Nobuo Takeda
Graduate School of Frontier Sciences, The University of Tokyo

17:25 Closing

18:00 Banquet