Detailed Programme

Wednesday, February 22nd

Invited Lecture I

9.30 TIME AND FREQUENCY DEPENDENT FATIGUE IN TITANIUM AND NICKEL ALLOYS
W.J. Evans
Head of Materials Research Centre, University of Wales Swansea, U.K.

Session 1-A: Fracture & Fatigue of Metallic Alloys

10:50 INFLUENCE OF COLD DRAWING ON RESIDUAL STRESSES AND HYDROGEN EMBRITTLEMENT OF PRESTRESSING STEELS
V. Kharin, J.A. Blanco, J.G. Ballesteros, D. Vergara and J. Toribio
Department of Materials Engineering, University of Salamanca, E.P.S., Campus Viriato, Avda. Requejo 33, 49022 Zamora, Spain

11:10 TENSILE TEST FRACTURE ANALYSIS IN Ti-RICH NiTi SHAPE MEMORY ALLOY
A.S. Paula, R.J.C. Silva, J.P.H.G. Canejo, K.K. Mahesh, F.M. Braz Fernandes
CENIMAT – Faculdade de Ciências e Tecnologia – Universidade Nova de Lisboa, Quinta da Torre – 2829-516 – Caparica – Portugal

11:30 ANISOTROPIC FRACTURE CAUSED BY CLEAVAGE ANNULAR STRESS IN COLD DRAWN PEARLITIC STEELS
F.J. Ayaso and J. Toribio
Department of Materials Engineering, University of Salamanca, E.P.S., Campus Viriato, Avda. Requejo 33, 49022 Zamora, Spain

11:50 CRACK PROPAGATION BEHAVIOUR OF SHOT PEENED COMPONENTS AT ELEVATED TEMPERATURE
R.A. Cláudio1, J.M. Silva2, C.M. Benco3 and J. Byrne4
1Department of Mechanical Engineering, Escola Superior de Tecnologia de Setúbal/Istituto Politécnico de Setúbal, Campus do IPS, Esplanada, 2910-761 Setúbal
2Department of Aerospace Sciences, Universidade de Bela Interior, Covilha
3Department of Mechanical Engineering, Instituto Superior Técnico, Av. Rovisco Pais, Lisboa
4Department of Mechanical and Design Engineering, University of Portsmouth, Portsmouth, UK

12:10 QUANTITATIVE FRACTOGRAPHIC ANALYSIS OF THE FRACTURE BEHAVIOUR OF PROGRESSIVELY DRAWN PEARLITIC STEELS
Department of Materials Engineering, University of Salamanca, E.P.S., Campus Viriato, Avda. Requejo 33, 49022 Zamora, Spain

Session 1-B: Fractography & Biomaterials

10:50 TENSILE AND FRACTOGRAPHIC EVALUATION WITH VARYING TEMPERATURES AND MOISTURE CONTENT OF THERMOPLASTIC COMPOSITES
L.A.L. Franco*1, 2, M.L.A. Graça*1, F.S. Silva*
1Centro Técnico Aeroespacial, Instituto de Aeronáutica e Espaço, Brazil;
2Department of Mechanical Engineering, University of Minho, PORTUGAL.
11:10 CHARACTERIZATION OF THE FRACTURE SURFACES OBTAINED IN DIRECT TENSILE TESTS
G. Vasconcelos1, P.B. Lourenço1, M.F.M. Costa2
1University of Minho, Department of Civil Engineering
2University of Minho, Department of Physics

11:30 FRACTURE OF NITI SUPERELASTIC ENDODONTIC FILES
S. Vilaverde Correia1, Rui J.C. Silva2, A.S. Paula2, J.P.H.G. Canejo1,
M.T. Nogueira1, K.K. Mahesh1, C. Mexia de Almeida1, F.M. Braz Fernandes2
1Faculdade de Medicina Dentária, Univ. de Lisboa, Endodontics Department, PORTUGAL
2CENIMAT – Faculdade de Ciências e Tecnologia – UNL – Quinta da Torre – 2829-516 – Caparica – Portugal

11:50 A SURVEY ON THE DIFFERENT WAYS OF FATIGUE DEGRADATION OF MATERIALS
P.S. Silva
Department of Mechanical Engineering, University of Minho, Azurém, 4800-058 Guimarães, PORTUGAL

Session 2-A: Fatigue of Metallic Alloys I

15:00 ON THE PLASTIC CRACK ADVANCE BY FATIGUE IN HIGH STRENGTH STEEL
V. Khairin and J. Toribio
Department of Materials Engineering, University of Salamanca, E.P.S., Campus Viriato, Avda. Requejo 33, 49022 Zamora, Spain

15:20 THE ENVIRONMENT EFFECT ON FATIGUE CRACK GROWTH USING A NEW CHAMBER OF VACUUM
F. Romeiro1, M. Fonte2, M. Freitas3
1E&G, Polytechnic Institute of Leiria, Portugal
2Nautical School, Polytechnic Institute of Lisbon, Portugal
3 fronter University of Lisbon, Av. Rovisco Pais 1096 Lisbon, Portugal

15:40 FATIGUE CRACK GROWTH IN PEARLITIC STEELS
J. Toribio, B. González and J.C. Matos
Department of Materials Engineering, University of Salamanca, E.P.S., Campus Viriato, Avda. Requejo 33, 49022 Zamora, Spain

Session 2-B: Wood Mechanical Behaviour I

14:30 AN INVESTIGATION ON COMPRESSIVE QUASI-STATIC BEHAVIOUR OF PINE WOOD
A.M.P. de Jesus*, A.M.V. Lima, J.J.L. Morais, J.I.C. Louzada
* University of Trás-os-Montes and Alto Douro – Engineering Department, Quinta de Prados, 5000-911 Vila Real, Portugal

14:50 MEASUREMENT OF MODE I FRACTURE PROPERTIES OF WOOD USING THE DCB SPECIMEN
P. Ribeiro*, J Morais*, M. Silva*, N. Dourado*, M.F.S.F. de Moraes**
** CETA/UTAD, Department of Engineering, Quinta de Prados, 5000-911, Vila Real.
** University of Porto, Faculty of Engineering, Department of Mechanical Engineering and Industrial Management, R. Dr. Roberto Frias, 4200-465 Porto
Session 3-A: Fatigue of Metallic Alloys II

16:10  INFLUENCES OF MULTIAXIAL FATIGUE LOADING ON THE CRACK PATH  42
L. Reis, B. Li and M. de Freitas
Department of Mechanical Engineering, Instituto Superior Técnico, 1096 Lisboa Codex

16:30  THE BAUSCHINGER EFFECT AND FATIGUE CRACK GROWTH  43
F.S. Silva
Department of Mechanical Engineering, University of Minho, Azurém, 4800-058 Guimarães, PORTUGAL

16:50  MICROSTRUCTURAL EVALUATION OF A NEW GENERATION PNICKEL BASE SUPERALLOY  44
J.M. Silva¹, A. Sousa e Brito²
¹ Depart. of Aerospace Sciences, Universidade da Beira Interior, Edifício II das Engenharias, 6201-003 Covilhã - Portugal
² Depart. of Mechanical Engineering, Instituto Superior Técnico Av. Rovisco Pais, 1049-001 Lisboa - Portugal

Session 3-B: Wood Mechanical Behaviour II

16:10  INFLUENCE OF THE SPECIMEN SIZE ON R-CURVE BEHAVIOUR IN WOOD  46
N. Deoudra *, S. Morel **, M.F.S.F. de Moura ***, G. Valentin **, J. Morais *
*CETAU/UTAD, Depart. De Engenharias, Quinta de Prados, 5001-911 Vila Real, Portugal
** LRRB, UMR 5103 (CNRS/INRA/Univ. Bx1), 69 route d’Arcachon, 33612 Cestas, France
*** Fac. Engenharia da Universidade do Porto, R. Dr. Roberto Frias, 4200-465, Porto, Portugal

16:30  DETERMINATION OF MECHANICAL PROPERTIES OF COATING PARTICLEBOARDS USING THE WORK-OF-INDENTATION  47
M. Fonte*, E. Tschegg** and S. Tschegg***
*Nautical School, Polytechnic Institute of Lisbon, Portugal
**Technical University of Wien, Austria
***University of Agricultural Sciences, Wien, Austria

16:50  NEW TEST METHOD FOR THE EVALUATION OF TENSION STRENGTH PARALLEL TO THE FIBRES ON SOLID WOOD SAMPLES  48
A.C. Marques Pinho – Universidade do Minho
José António Santos – INETI

17:30  Welcome Cocktail