

EUROMECH COLLOQUIUM 577 - PROGRAM SCHEDULE

Time	Day 1 : March 2, 2015 (Monday)		Page
11:00 - 13:00	Registration and check in		
13:00 - 13:10	Opening		
13:10 - 13:50	Plenary 1 <i>Chair: Schmauder</i>	Particle shape effects in particle reinforced composites, Helmut J. Böhm (Austria)	2
13:50 - 14:10	Section 1 : Processing, Experiments <i>Chair: Schmauder</i>	S1-1 : Micromechanics determination of effective properties of voided magneto-electroelastic materials, Jan Sladek	14
14:10 - 14:30		S1-2 : Functional role of grain boundaries in Hall-Petch equation, Victor Panin	15
14:30 - 14:50		S1-3 : Simulation of ablation for laser-matter-interaction on ceramic coatings with metal substrate, Peter Weidmann	16
14:50 - 15:10		S1-4 : In situ deformation of metallic interlayers, Finn Giuliani	17
15:10 - 15:30	Coffee Break		
15:30 - 16:00	Keynote 1 <i>Chair: Böhm</i>	On the macroscopic elasto-plastic response of metal-matrix composites, Pedro Ponte Castañeda (USA)	6
16:00 - 16:20	Section 1 : Processing, Experiments (Continuation) <i>Chair: Böhm</i>	S1-5: Smoothed Particle Hydrodynamics simulation of friction stir welding, Dominik Hamann	18
16:20 - 16:40		S1-6 : Prediction of fracture toughness of ceramic composites as function of microstructure, Min Zhou	19
16:40 - 17:00		S1-7 : Numerical simulation of crack extension in Al6061 laser welded joint, Haoyun Tu	20
18:00 - 20:00	Dinner (COMMUNDO)		

Time	Day 2 : March 3, 2015 (Tuesday)		Page
09:00 - 09:30	Keynote 2 <i>Chair: Ponte Castañeda</i>	On void growth in metal ceramic systems, Viggo Tvergaard (Denmark)	7
09:30 - 09:50	Section 2 : Micromechanics of deformation and fracture <i>Chair: Ponte Castañeda</i>	S2-1 : A comparison of constitutive models for short fibre reinforced brittle materials, Heiko Herrmann	22
09:50 - 10:10		S2-2 : Thermo-elasticity in FGM beams with constrained cross-sections, Stephan Kugler	23
10:10 - 10:30		S2-3 : Scale effects in homogenization of metal matrix composites, Stefan Schindler	24
10:30 - 10:50	Coffee Break		
10:50 - 11:10	Section 2 : (continuation) <i>Chair: Tvergaard</i>	S2-4 : Micro-scale modelling of metal ceramic composites behavior using statistical approach, Mikhail Tashkinov	25
11:10 - 11:30		S2-5 : Mechanical aspects of deformation-induced roughening in surface-modified materials, Varvara Romanova	26
11:30 - 11:50	Section 3 : Functionally Graded Materials <i>Chair: Tvergaard</i>	S3-1 : On vibrations of functionally graded metal-ceramic thin plates, Holm Altenbach	28
11:50-12:10		S3-2 : Predictions in strength and dynamics of sandwich composites under time varying loads, Vyacheslav Burlayenko	29
12:10 - 12:30		S3-3 : BIEM modeling of elastic waves in a graded half-plane with position-dependent velocity containing cavities, Ioanna-Kleoniki Fontara	30
12:30 - 13:30	Lunch		
13:30 - 14:00	Keynote 3 <i>Chair: Sladek</i>	Crystal plasticity in fatigue, Georges Cailletaud (France)	8
14:00 - 14:20	Section 3 : Functionally Graded Materials	S3-4 : Modeling of brittle fracture of functionally graded coatings subjected to thermo-mechanical loading, Vera Petrova	31
14:20 - 14:50	Coffee Break		
17:10 - 19:30	GUIDED VISIT OF THE MERCEDES BENZ MUSEUM		
19:30 - 22:00	CONFERENCE DINNER - MERCEDES BENZ MUSEUM RESTAURANT		

Time	Day 3 : March 4, 2015 (Wednesday Morning)		Page
09:00 - 09:30	Keynote 4 <i>Chair: Cailletaud</i>	Implementation of a Cohesive Zone Model in History-Dependent Materials, Sergey Mikhailov (UK)	9
09:30 - 09:50	Section 4 : Fracture and Failure I <i>Chair: Cailletaud</i>	S4-1 : Modified cohesive zone models for high speed dynamic fracture of ductile materials, Chong-Qing Ru	33
09:50 - 10:10		S4-2 : The effect of composite polycrystalline microstructure on the deformation and fracture of aluminum alloys with friction stir welds. Numerical simulation, Ruslan Balokhonov	34
10:10 - 10:30		S4-3 : Delamination of functionally graded thin films on elastic substrates, Marco Paggi	35
10:30 - 10:50	Coffee Break		
10:50 - 11:10	Section 4 : Fracture and Failure I <i>Chair: Altenbach</i>	S4-4 : Laminate ceramics - crack deflection due to strong compressive residual stresses, Dominique Leguillon	36
11:10 - 11:30		S4-5 : Homogenization via unfolding in periodic elasticity with contact on closed and open cracks, Vladimir Shiryayev	37
11:30 - 11:50		S4-6 : Multiscale modeling of mechanical properties of particle-reinforced Aluminum-based metal-matrix composites, Sergey Lurie	38
11:50 - 12:10		S4-7 : Initiation and propagation of local curvature at grain boundaries during intergranular sliding in deformed polycrystal, Dimitry Moiseenko	39
12:10 - 12:30		S4-8 : Three collinear cracks in pre-stressed elastic composites, Eduard Marius Crăciun	40
12:30 - 13:30	Lunch		

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Time	Day 3 : March 4, 2015 (Wednesday afternoon)		Page
13:30 - 14:10	Plenary 2 <i>Chair: Müller</i>	Metal-ceramic nanolaminates: a new paradigm in metal-ceramic composites, Javier Llorca (Spain)	3
14:10 - 14:30	Section 5 : Bio / Nanomaterials <i>Chair: Müller</i>	S5-1 : Nanostructuring of interfaces in composites: Computational analysis of reserves of materials optimization, Leon Mishnaevsky	42
14:30 - 14:50		S5-2 : Hydrogen enhanced slip plane fracture in alpha iron, Shinya Taketomi	43
14:50 - 15:10	Coffee Break		
15:10 - 15:40	Keynote 5 <i>Chair: Pyrz</i>	Discrete to scale-dependent continua for complex materials. A generalized Voigt approach using the principle of virtual powers, Patrizia Trovalusci (Italy)	10
15:40 - 16:00	Section 5 : Bio / Nanomaterials (Continuation) <i>Chair: Pyrz</i>	S5-3 : Computation modelling of the mechanical behavior of nanocomposites, Natalia Konchakova	44
16:00 - 16:20		S5-4 : Molecular dynamics simulations of tensile tests of Ni-, Cu-, Mg- and Ti-alloyed aluminium nanopolycrystals, Stephen Hocker	45
16:20 - 16:40		S5-5 : Simulation of mechanical properties of bio-inspired TiO ₂ /PE and Zinc oxide/peptide nanocomposites, Immanuel Schäfer	46
16:40 - 17:00		S5-6 : Understanding the failure behavior of bio-composites as a prototype for composites with brittle fibers, Songyun Ma	47
FREE TIME			

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Time	Day 4 : March 5, 2015 (Thursday)		Page
09:40 - 10:10	Keynote 6 <i>Chair: Trovalusci</i>	Thermal barrier protective coatings Sergey Panin (Russia)	11
10:10 - 10:30	Section 6 : Fracture and Failure II <i>Chair: Trovalusci</i>	S6-1 : Fracture behavior of highly heterogeneous composites: damage tolerant mechanism in short carbon fiber/Si/SiC composite, Yutaka Kagawa	49
10:30 - 10:50		S6-2 : Experimental study of synergy in hybrid fiber reinforced concrete, Janis Kruminš	50
10:50 - 11:10		S6-3 : Failure limit surface of ceramic foams based on Kelvin cell models under complex global loading, Dongshuang Zhang	51
11:10 - 11:30	Coffee Break		
11:30 - 12:10	Plenary 3 <i>Chair: Schmauder</i>	The use of higher gradient theories during analysis of sub-micro-structures, Wolfgang H. Müller (Germany)	4
12:10 - 12:30	Conference Closure		
12:30 - 13:30	Lunch		