Asian Conference on Mechanics of Functional Materials and Structures

Language

The official language will be **English.**

Publication of full papers

Selected papers will be published in ACTA MECHANICA thorough a regular review process.
Location: Matsue, Shimane, Japan
Date: Oct. 31- Nov. 3, 2008

Topics

This is a conference on theoretical and applied mechanics of solids, with particular focus on the following, but not limited to them:
Mathematical elasticity
Elasticity (Thermo, Electro, Electro-magneto, Photo)
Plasticity
Functional and Intelligent Materials
Functional and Smart Structures
Fracture
Impact Mechanics and Dynamic Material Behavior

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November 1, Saturday, Morning

9:00	Room A, Opening Ceremony		
9:10	Room A, Opening Lecture: Phase Field Simulations of Ferroelectric Islands, Thin Films and Nanoparticles J. Wang, M. Kamlah and T.-Y. Zhang Chair: C.-F. Gao		
10:10	Coffee Break		
	Room A, Wave 1 (Chair: F.-M. Li)	Room B, Crack 1 (Chair: C. Hwu)	Room C, Thermal Stress (Chair: S. Kapuria)
10:40	Frequency Equations of Magneto-Thermoviscoelastic Wave at an Interface between Two Micropolar Viscoelastic Solid Mediums H.-Y. Xu, N.-A. Noda and B. Liang	Transient Intensity Factors for a Parallel Crack in a Plate of a Functionally Graded Piezoelectric Material under Thermal Shock Loading Conditions S. Ueda and H. Kondo	Two-Dimensional Unsteady Stresses Caused by Transfer of Heat and Moisture in a Multilayer Plate with Repeated FGM Layers – Application of IDO Numerical Scheme – Y. Obata
11:00	Elastodynamic Doppler Effects by a Moving Edge K. Watanabe	Numerical Analysis of a Conducting Sheet between Dissimilar Electrostrictive Materials Y. H. Kim and H. G. Beom	Thermal Stress Analysis for Ceramics Stalk in the Low Pressure Die Casting Machine N.-A. Noda, Hendra, Y. Takase, M. Osato and H. Ogura
11:20	Generalized Thermo-Mechanical Wave Problem in a Thin Composite Plate with Damping N. Sumi	Dynamic Crack Propagation Analysis by Extended Discrete Element Method K. Kaizu, H. Tokunaga, H. Kinoshita, K. Ikeda and K. Arakawa	Two-Dimensional Thermoelastic Analysis of Singularity in Dissimilar Materials by the Boundary Element Method T. Furukawa and A. Iwata
11:40	Elastic Wave Propagation in Angled Beams V. P. W. Shim, Y. B. Guo and A. Y. L. Yeo	Numerical Solutions of Singular Integral Equations for Interface Cracks N.-A. Noda and Y. Zhang	Transient Thermal Stresses in the Semi-Infinite Body with an Oblique Boundary to the Functionally Graded Direction M. Ohmichi and N. Noda
12:00	Thermoelastic Interaction in Functionally Graded Orthotropic Hollow Sphere under Thermal Shock with Three-Phase-Lag Effect M. Kanoria and A. Kar	Singularity of Extended Stresses of Interface Cracks in 3D Transversely Isotropic Smart Bimaterials M. Zhao, C. Fan and N. Li	An Analytical Method for Thermal Stresses of a Functionally Graded Material Cylindrical Shell under a Thermal Shock L.-C. Guo and N. Noda

November 1, Saturday, Afternoon

12:20	Lunch		
13:20	Room A, Keynote Lecture: Thermal Stresses in a Viscoelastic Tri-Material C. K. Chao Chair: S. Ueda		
14:00	Break		
	Room A, Wave 2 (Chair; S. Chirita)	Room B, Crack 2 (Chair: A. Saimoto)	Room C, Material Modeling (Chair: R.-C. Chang)
14:10	Transient Response for an Elastic Wedge Subjected to SH Lateral Impact Load K. Miura and T. Ohyoshi	Calculation of Stress Intensity Factor for Interface Cracks in Orthotropic Dissimilar Materials Using the Extended Proportional Method K. Oda and Y. Takahashi	Optimum Design of Crystal Microstructure in Piezoelectric Materials by Multiscale Finite Element Method Y. Uetsuji
14:30	Impact on a Water Filled Cylinder A. Golshani, T. Tran-Cong and D. Buttsworth	Interface Corners in Piezoelectric Materials C. Hwu	Development of Composite Material System with Lightweight Y. Ozawa, T. Kikuchi, M. Watanabe and K. Yabuki
14:50	Effect of Connectivity on Band Gap Existence for Longitudinal-Transverse Mode of Vibration in Two-Dimensional Piezoelectric Phononic Crystals Z.-H. Qian, F. Jin and K. Kishimoto	Thermopiezoelastic Strip with an Edge Crack Considering the Coupling Effect O. P. Niraula, N. Noda and B. L. Wang	A Generalized Anisotropic Hyperelastic Model for Anisotropic Solids M. Itskov and A. E. Ehret
15:10	The Analysis of SH-Waves Propagation Behaviors in Periodic Piezomagnetic-Piezoelectric Composite Materials W.-Y. Wei, J.-X. Liu and D.-N. Fang	A Functionally Graded Piezoelectric Strip with an Annular Crack under Thermoelectric Loadings S. Ueda and N. Nishimura	Compression Behavior of Low-Density Porous Materials and Its Constitutive Representation Using Volume Fraction A. Sakuma, N. Azusawa, M. Shinomiya and S. Nagaki
15:30	Break		

November 1, Saturday, Afternoon

	Poster Session		
	Room A, Poster 1 (Chair: N.-A. Noda)	Room B, Poster 2 (Chair: T. Tsuji)	Room C, Poster 3 (Chair: Y. Shibuya)
15:40	One-Dimensional Generalized Thermoelastic Analysis of a Composite Thin Film with Damping T. Moriwaki, F. Ashida and S. Sakata	Comparative Study on Stochastic Analysis with the Perturbation Based Homogenization Method and Equivalent Inclusion Method Considering Microscopic Uncertainty of Material Property T. Kojima, S. Sakata and F. Ashida	One-Dimensional Generalized Thermoelastic Analysis of a Nonlinear Piezoelectric Thin Film with Damping Y. Misu, F. Ashida and S. Sakata
15:43	Elastodynamic Doppler Effect by a Moving Interface T. Miyamoto and K. Watanabe	Shape Optimization of a Graded Structure Considering a Contact Problem Using DFP-Based Neural Network T. Tsubokura, S. Sakata and F. Ashida	On Local Stress Analysis in Multi-Scale Problem for Inhomogeneous Materials K. Ishitobi, S. Sakata and F. Ashida
15:46	Design of a Smart Composite Disk for Control of Thermal Stresses K. Kondo, F. Ashida and S. Sakata	One-Dimensional Generalized Thermoelastic Analysis of a Thin Film Using Green-Naghdi Theory T. Fujiki, F. Ashida and S. Sakata	Effect of Texture on Fatigue Behavior of Magnesium Alloy K. Taniguchi, S. Ishihara, H. Yamagishi and T. Goshima
15:49	Transient Analysis of a Piezothermoelastic Three-Layered Laminated Cantilever Beam due to Nonuniform Heat Supply Y. Ootao and M. Yuhara	Control of Transient Thermal Stress in a Two-Layered Piezoelectric Composite Disk Y. Sugimoto, F. Ashida and S. Sakata	Flexural Vibration Analysis of Damaged Beams to Estimate Mode Shape and Detect Damage from Strain Response under Impulse Loads R. Arakawa and Y. Shibuya
15:52	Study on Fatigue Lives and Crack Propagation Behavior of High Speed Steel S. Yoshifuji, S. Ishihara, M. Kawamoto, M. Sawai, M. Takata and T. Goshima	Submicron-Scale Characterization of Stress in Polycrystalline-Silicon Thin Films for Integrated Circuits on Liquid-Crystal Displays K. Yamamoto, M. Kobata and K. Kitahara	On Kriging Approximation for Optimization of Laminated Composites H. Tanaka, S. Sakata and F. Ashida

November 1, Saturday, Afternoon

	Poster Session		
	Room A, Poster 1 (Chair: N.-A. Noda)	Room B, Poster 2 (Chair: T. Tsuji)	Room C, Poster 3 (Chair: Y. Shibuya)
15:55	Wave Propagation across a Non-Uniformaly Jointed Interface H. Ishikawa and K. Watanabe	Transient Thermoelastic Problem of a Laminated Composite Hollow Cylinder with an Interlayer of Functionally Graded Material Y. Ootao and T. Fukada	Stochastic Homogenization Analysis of Fiber Reinforced Composites Considering Three-Dimensional Geometrical Random Variation of Fiber R. Tanaka, S. Sakata and F. Ashida
15:58	Control of Transient Thermoelastic Displacement in a Piezoelectric Composite Disk F. Ashida and S. Sakata	Inverse Thermoelastic Problem of a Radially-Polarized Piezoceramic Hollow Cylinder Y. Igi, F. Ashida, S. Sakata and T. R. Tauchert	Transient Piezothermoelastic Analysis for a Functionally Graded Thermopiezoelectric Hollow Cylinder Using Laminated Composite Model Y. Ootao and T. Ohara
16:01	Dynamic Stress Intensity Factors for Two Parallel Interface Cracks between a Non-Homogeneous Bonding Layer and Two Dissimilar Elastic Half-Planes Subjected to an Impact Load S. Itou	Effect of Baseline Stress Intensity Factor Range ΔK_b on the Delay Cycles after a Single Tensile Overload M. Sato, S. Ishihara, A. J. McEvily and T. Goshima	
16:10	Poster Room, Poster Viewing and Coffee		
16:40	Break		

November 1, Saturday, Evening

	Room A, Contact Mechanics (Chair: M. Arai)	Room B, Piezocomposites(Chair: Y. M. Shabana)	Room C, Stress Analysis (Chair: C. K. Chao)
16:50	On Adhesive Contact of a Rigid Sphere on a Transversely Isotropic Piezoelectric Half-Space W. Q. Chen	An Efficient Finite Element with Physical and Electric Nodes for Transient Analysis of Smart Piezoelectric Sandwich Plates S. Kapuria and S. D. Kulkarni	Versatile Analysis of Limited Plasticity by Body Force Method A. Saimoto and Y. Imai
17:10	Tension, Torsion, and Bending Behavior of a Stranded Cable with Friction B. K. Gnanavel, D. Gopinath and N. S. Parthasarathy	Vibration Control of Beams with Active Constrained Layer Damping F.-M. Li, K. Kishimoto, Y.-S. Wang and Z.-B. Chen	Strain Path Dependent Plastic Behavior of Aluminum by Unidirectional and Cyclic Biaxial Compressions I. Shimizu and N. Tada
17:30	Bending of a Stranded Cable over a Sheave D. Gopinath, B. K. Gnanavel and N. S. Parthasarathy	Transient Piezothermoelasticity in a Functionally Graded Cylindrical Panel Bonded to a Piezoelectric Layer due to Nonuniform Heating Y. Ootao	Root Canal Preparation Design Analysis for Dental Restoration at Maxillary Central Incisors Using Finite Element Method A. Jusuf, T. Dirgantara, G. Subrata and I. S. Putra

November 2, Sunday, Morning

9:00	Room A, Keynote Lecture: Efficient Modeling of Smart Piezoelectric Composite Laminates S. Kapuria Chair: H. G. Beom		
9:40	Coffee Break		
	Room A, Micro / Nano Mechanics (Chair: M.-K. Yeh)	Room B, Viscoelasticity (Chair: Z. Zhong)	Room C, Functional Materials & Structures (Chair: W. Q. Chen)
10:10	Oscillation of a Carbon Nanotube Subjected to Axial Load M. Ishihara, W. Adachi and N. Noda	Evaluation of Thermo-Viscoelastic Constitutive Equation of Carbon Fiber Reinforced Plastic Using Homogenization Method M. Arai, K. Kaku and Y. Fushimi	Mechanics of Graded Rubber Layers Bonded to Rigid Surfaces T. Morimoto and H. Iizuka
10:30	Polar Continuum Mechanics Model of an Interface with Intrinsic Structure I. Dobovšek	Evaluation of Internal Damping of Polymer Composites with Fiber Debonding by Homogenization Approach Y. Shibuya	Mode Shapes of Thin Composite Plates Subjected to Combined Loads R. M. Gadelrab, A. S. Bassiouni, T. H. Elmahdy and A. M. Soofy
10:50	Surface Stress Effects on Elastic Behavior of Functionally Graded Ultra-Thin Films C. F. Lü, W. Q. Chen and C. W. Lim	Characterizing Viscoelastic Properties of Photo Resist Thin Films at Various Temperatures R.-C. Chang, F.-Y. Chen, M.-J. Kuo and H.-K. Tsai	Magneto-Thermo-Elastic Problem of a Conducting Rectangular Cylinder Subjected to Sinusoidal Change in Time of Magnetic Field K. Sano, R. Kawamura, Y. Ootao and Y. Tanigawa
11:10	Study of the Mechanical Properties of Multilayered Coatings on Nanoindentation with Finite Element Analysis F.-Y. Chen, R.-C. Chang and B.-Y. Lin	Constitutive Representation of Nonlinear Soft Viscoelastomer Using Three Element Solid Model and Its Application to Biological Soft Tissue M. Ogasawara, A. Sakuma and M. Tani	Thermoelectromechanical Response of a Piezoelectric Strip with Two Parallel Cracks of Different Lengths S. Ueda and A. Ishii
11:30	Photograph		

November 3, Monday, Morning

9:00	Room A, Special Lecture : Tatara and the Japanese Sword - The Science and Technology - T. Inoue Chair: Y. Ozawa		
10:00	Coffee Break		
	Room A, Vibration (Chair: C. H. Chue)	Room B, Experimental Mechanics 1 (Chair: T. Adachi)	Room C, Functionally Graded Materials (Chair: C. F. Lu)
10:30	Dynamic Behavior of a Driveline Shaft Made of Composite Material R. M. Gadelrab, E. M. Rabeih, M. Osman and Y. M. Shabana	High Speed Thermal Stress Cleaving by Moving Heat with Mist Cool S. Kubota, A. Saimoto and Y. Imai	Dynamic Large Deformation of a Piezothermoelastic Laminated Beam Subjected to Mechanical, Thermal and Electrical Load Y. Watanabe, M. Ishihara and N. Noda
10:50	On Spatial Behaviour in Viscoelastic Mixtures C. Gales	Some Problems in the Electrostrictive Constants Measuring Q. Jiang and C.-F. Gao	Analytical Study on Prediction of Residual Stresses in Functionally Graded Coatings by Plasma Splay Process S. Takahashi and Y. Sugano
11:10	Free Vibration and Stability Behavior of Functionally Graded Hypar Shells S. Pradyumna and J. N. Bandyopadhyay	Fracture Strength of MWNT/polymer Nanocomposites M.-K. Yeh and C.-M. Lin	On Explicit-Form Solution to the Plane Elasticity and Thermoelasticity Problems in a FGM Layer Y. Tokovyy and C.-C. Ma
11:30	Strong Elliptic Elasticity Tensor and Spatial Behavior of Harmonic Vibrations S. Chirita	A Measurement of the Young's Modulus for the Early Part and the Late Part of the Wood T. Tsuji and Y. Kasai	Analysis of Shakedown of the Bree Plate Made of Functionally Graded Materials X. Peng, N. Hu, H. Zheng and F. Cuirong
11:50	Mathematical Analysis of Flexural Vibrations of Inhomogeneous Rectangular Plates and Beams Subjected to Cyclic Loadings of Temperature Change and External Force R. Kawamura, H. Fujita, Y. Ootao and Y. Tanigawa	On Development of Simulated CT Apparatus for 3D Reconstruction of Industrial Component I. S. Putra, T. Dirgantara and H. Setiawan	Transient Thermoelectromechanical Response of a Functionally Graded Piezoelectric Material Strip with a Normal Crack S. Ueda and Y. Ashida

November 3, Monday, Afternoon

12:10	Lunch		
13:10	Room A, Keynote Lecture: Variational Principles for Functionally Graded Material and Structures Z. Zhong, M. Liu and F. Luo Chair: V. P. W. Shim		
13:50	Break		
	Room A, Fatigue (Chair: X. Peng)	Room B, Experimental Mechanics 2 (Chair: I. S. Putra)	Room C, Stress Analysis & Design (Chair: Y. Ootao)
14:00	On Damage Propagation Analysis of Textile Composites under Cyclic Load S. Hanaki, M. Zako, H. Uchida, S. V. Lomov and I. Verpoest	Particle Size Effect on Fracture Toughness of Nano-Spherical Particle Filled Composites T. Adachi	Determination of Stresses for an Infinite Plate with a Reinforced Elliptic Hole C. K. Chao, L. M. Lu, C. K. Chen and F. M. Chen
14:20	On the Fatigue Fracture at Adsorption/Desorption of Water in/from Liquid-Repellent Nanoporous Silica C. V. Suciu, S. Tani and K. Yaguchi	Photoelastic Analysis by Off-Axis Digital Holography with Single Reference Beam M. Yokota	Effect of Bead Position on Stress Distribution along the Fillet on Upper Deck of Diesel Engine Cylinder Block with Dry Liner Structure K. Iguchi, N. Tada, I. Shimizu and K. Iwasaki
14:40	Estimate of Strength of Thick Bolt Fractured by Fatigue Y. Iwai	Laser Driven Shock Waves for Ballistic Delivery of Liquid Drugs into Soft Tissues V. Menezes and K. Takayama	The Optimum Strength Design of Fiber-Metal Hybrid Laminates by PSO and FEM W. Peng, J. Chen and J. Wei
15:00	A Thermo-Elasto-Plastic Formulation for Numerical Study of Damage Growth in Taylor Rod Impact Problem S. S. Gautam, R. Babu and P. M. Dixit	Constitutive Relationship Measurement of Soft Viscoelastomer Using Spherical Indentation and Valuation of Viscoelastic Parameters M. Tani, A. Sakuma and M. Ogasawara	The Reduction of Stress Concentration by Tapering Threads Y. Xiao, M. Kuhara and N.-A. Noda
15:20			Microstructural Optimization of Fiber Reinforced Composites Considering a Stochastic Homogenization Problem S. Sakata and F. Ashida

Submission of abstract

The abstract is limited to approximately 500 words. It should contain the title, name of author(s), affiliation(s), abstract and keywords (no more than five keywords). Please do not forget to include the ID number of 6 digits, which will be assigned by the registration system. It should not contain figures, tables, footnotes or references. It may contain equations if the abstract is prepared in MS-Word. Abstracts will be used for a decision on acceptance of the paper, and the acceptance will be notified to the authors via e-mail.

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