An advanced ACA/BEM for solving large-scale elastic problems

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Large scale, plane strain elastic problems dealing with the bending of unidirectional fiber composite plates are solved by means of a Boundary Element method (BEM) accelerated via Adaptive Cross Approximation (ACA) and Hierarchical Matrices (HM) techniques. The composite plate is modeled as a large number of periodically or randomly distributed cylindrical elastic fibers embedded in a matrix medium. Each of the considered problems is treated through boundary discetizations with almost one million Degrees of Freedom (DoFs). The solution of those problems is accomplished by means of a BEM enhanced by HM and ACA techniques that accelerate drastically the computation of the matrix [A] of the final system of algebraic system of equations [A]{x}={b} and also reduce the memory requirements. That acceleration is possible due to the nature of the fundamental solutions, which are functions of the distance between the source and field points and thus only a small number of elements of the collocation matrix [A] are calculated, while the rest of them are approximated via the already evaluated elements. The aim of the present work is twofold: first to demonstrate the BEM/ACA/HM methodology utilized here for the solution of a large scale elastic problem and second to study microstructural effects due to the size of the fibers and to compare with the corresponding results provided by the homogenization generalized self-consistent method of Christensen (J. Mech. Phys. Solids, Vol. 38, pp. 379-404, 1990).

Keywords: Boundary Element Method, Hierarchical Matrices, Adaptive Cross Approximation, Large Scale Elastic Problems, Composite Materials

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Large scale, plane strain elastic problems dealing with the bending of unidirectional fiber composite plates are solved by means of a Boundary Element method (BEM) accelerated via Adaptive Cross Approximation (ACA) and Hierarchical Matrices (HM)

Theme : No. [6] Meshless & other novel methods of comp. mod. in engng & sci.

Symposium : No. [41] MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods

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Technical Program: ICCES'15 Reno, NV, USA

July 20 - 24, 2015, Reno, NV, USA

Theme	Mechanics of Fluids, gases, and Fluid/MEMS		Date: July-21	Room: A
Session	A01: Computational & Experimental Fluid/Electromagnetic Dynamics and Other A		Time: 8:30AM-10:15AM	
Paper	Title	Author	Time	
ICCES1520150406112	Complicated Fluid Flow Simulations by Particle Methods Using Hyperbolic-type Kernel Functions	K. Kakuda, H. Hosokawa, T. Kusakabe, J. Toyotani, S. Miura, R. Inoue, N. Katsurada, S. Higuchi and S. Matsuda	8:30AM-9:00AM	*fellow
ICCES1520150508296	Parallel Large Eddy Simulation for Turbulent Reactive Flow Modeling	Jiajia Waters, David B. Carrington and Darrell W. Pepper	9:00AM-9:30AM	*award
ICCES1520150407117	Numerical Study on Liquid Metal Magnetohydrodynamic Turbulent Flows under Various Electrical Circuit Conditions	Hiromichi Kobayashi, Liancheng Hu, Yoshihiro Okuno	9:30AM-9:50AM	
ICCES1520150415150	Implementation of Variable Preconditioned Krylov Subspace Method on GPU and Estimation of Optimal Parameters	Soichiro Ikuno, Gong Chen	9:50AM-10:10AM	

Theme	Modeling in Engineering and Sciences		Date: July-21	Room: A
Session	A02: Catastrophic Destruction Mechanics and Numerical Modeling		Time: 10:30AM-12:15PM	
Paper	Title	Author	Time	
ICCES1520150405111	Study On Hydraulic Concrete Cracking Criterion In Smeared Crack Numerical Model	REN Qing-wen, GU Jia-feng	10:30AM-10:55AM	*keynote
ICCES1520150330072	The Influence of Initial Stresses on Concrete Sluice Strengthening	Mei Mingrong, Sheng Weigao, Ren Qingwen	10:55AM-11:15AM	
ICCES1520150324061	Isogeometric finite element free vibration and buckling analysis of laminated composite plates with cutouts using a new simple FSDT theory and level set method	Tiantang Yu, Shuohui Yin, Tinh Quoc Bui	11:15AM-11:35AM	
ICCES1520150331076	Application of Monte Carlo Method to Probability Analysis of Dam Overtopping Caused by Landslide	Shengping Gu, Lei He, Jun He,Wanwan Lv	11:35AM-11:55AM	
ICCES1520150421176	Study on the Interaction and Effect of Soft Foundation Embankment and Viaduct Bridge Cross	Yin Zhao	11:55AM-12:15PM	

Theme	Modeling in Engineering and Sciences		Date: July-21	Room: A
Session	A03: Catastrophic Destruction Mechanics and Numerical Modeling		Time: 1:30PM-3:30PM	
Paper	Title	Author	Time	
ICCES1520150608400	Modeling debris-flow runout patterns on a local slope of 2011 Seoul event using DAN3D	Deuk-Hwan Lee, Seung-Rae Lee, N. V. Nikhil and Joon-Young Park	1:30PM-1:55PM	*keynote
ICCES1520150521324	Effect of Earthquake Ground Motion Duration on Structural Damage	Xiangdong Qian	1:55PM-2:15PM	
ICCES1520150416159	Elastic Modulus Inversion Analysis Method of High Arch Dam Based on Weighted Least Squares Support Vector Machines and Changed Genetic Algorithm	Chungao Liu,Chongshi Gu,Xin Cao,Jiachen Liang,Zhongwen Shi	2:15PM-2:35PM	
ICCES1520150426198	Nonlinear finite element analysis of tube-gusset joints with ring plate	Xiaolu Li, Hui Li, Ling Yao and Ling Zhang	2:35PM-2:55PM	
ICCES1520150420171	Research on Simulation System for Preventing and Controlling Thermal Crack of Mass Concrete and its Application	Chao Su, Chao Xu, Yang Su, Lu Wang,Lin Su,Fangfang Sheng	2:55PM-3:15PM	
ICCES1520150427214	Analysis of the Polished Load of Adjustable-Diameter and Changeable-Moment Pumping Unit	TANG Jing-fei, Wu Xiao-dong, Gao Zhao-min	3:15PM-3:35PM	

Theme	Modeling in Engineering and Sciences		Date: July-21	Room: A
Session	A04: Computational methods in celestial mechanics		Time: 4:00PM-6:30PM	
Paper	Title	Author	Time	
ICCES1520150704424	Enhancements to Modified Chebyshev-Picard Iteration Efficiency for Perturbed Orbit Propagation	Brent Macomber, Austin Probe, Robyn Woollands, Julie Read and John Junkins	4:00PM-4:40PM	*theme

ICCES1520150430259	Integration of the Coupled Orbit-Attitude Dynamics Using Modified Chebyshev-Picard Iteration Methods	Xiaoli Bai and John L. Junkins	4:40PM-5:00PM	*invited
ICCES1520150704425	Modified Chebyshev Picard Iteration Accuracy and Stability for Multi-Orbit Propagation	Robyn Woollands, Abhay Masher, Brent Macomber, Austin Probe, Donghoon Kim, Julie Read, Ahmad Bani Younes and John Junkins	5:00PM-5:20PM	*invited
ICCES1520150704423	Benchmark Problems for Numerical Astrodynamics Propagation Algorithms	Austin Probe, Brent Macomber, Robyn Woollands, Abhay Masher, Julie Read, Brandon Jones and John Junkins	5:20PM-5:45PM	*keynote
ICCES1520150423183	Continued Fraction Cartesian to Geodetic Coordinate Transformation	James D. Turner, Adullah Alnaqeb, Ahmad Bani Younes	5:45PM-6:10PM	*keynote
ICCES1520150704427	Efficient Orbit Propagation of Orbital Elements Using Modified Chebyshev Picard Iteration Method	J.L. Read, A. Bani Younes and J.L. Junkins	6:10PM-6:30PM	*invited

Theme	**Modeling in Engineering and Sciences**		**Date: July-22**	**Room: A**
Session	**A05: Computational methods in celestial mechanics**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150501278	Energy Conserved Planar Motion: The Flight Direction Angle Always Admits an Analytical Solution	Maruthi R. Akella and Sofokli Cakalli	8:30AM-8:55AM	*keynote
ICCES1520150423185	Model-Based Analytic Continuation Propagation Variables For Two-Body Applications	James D. Turner, Adullah Alnaqeb, Ahmad Bani Younes	8:55AM-9:15AM	*invited
ICCES1520150501281	Stable and Minimum Energy Configurations in the Spherical, Equal Mass Full 4-Body Problem	D.J. Scheeres	9:15AM-9:40AM	*keynote
ICCES1520150501275	Single-point and Filtered Relative Position Estimation for Visual Docking	Dylan Conway, Daniele Mortari	9:40AM-10:05AM	*keynote

Theme	**Modeling in Engineering and Sciences**		**Date: July-22**	**Room: A**
Session	**A06: Computational methods in celestial mechanics**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150704426	Multi-Orbit Hybrid Thrust Transfers Using Modified Chebyshev Picard Iteration	Robyn Woollands, Julie Read, Austin Probe, Brent Macomber and John Junkins	10:30AM-10:50AM	*invited
ICCES1520150430262	Low Thrust Minimum Time Orbit Transfer Nonlinear Optimization Using Multi-Impulse Discretization via the Modified Picard–Chebyshev Method	Darin Koblick, Shujing Xu, Joshua Fogel, and Praveen Shankar	10:50AM-11:15AM	*keynote
ICCES1520150524333	The Economic Design Problem of Spacecraft Navigation Systems	Kohei Fujimoto, Terry Alfriend, and Rao Vadali	11:15AM-11:35AM	*invited
ICCES1520150501279	How Non-Gaussian Is It?	Puneet Singla and MAnoranjan Majji	11:35AM-11:55AM	*invited
ICCES1520150525364	Modeling Impacts on Space Situational Awareness Tracking	Carolin Frueh	11:55AM-12:15PM	*invited

Theme	**Modeling in Engineering and Sciences**		**Date: July-22**	**Room: A**
Session	**A07: Computational methods in celestial mechanics**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150501280	Multidirectional Gaussian Mixture Models for Nonlinear Uncertainty Propagation	Vivek Vittaldev and Ryan P. Russell	1:30PM-1:55PM	*keynote
ICCES1520150430258	A Conjugate Unscented Transformation Based Approach for Accurate Conjunction Analysis	Nagavenkat Adurthi and Puneet Singla	1:55PM-2:20PM	*keynote
ICCES1520150529387	A Tree-Based Approach for Efficient and Accurate Conjunction Analysis	Michael Mercurio and Puneet Singla	2:20PM-2:40PM	*invited
ICCES1520150508297	High-Order State Transition Tensors of Perturbed Orbital Motion using Computational Differentiation	Ahmad Bani Younes and James Turner	2:40PM-3:00PM	*invited
ICCES1520150422180	Solution of Liouville's Equation for Uncertainty Characterization of the Main Problem in Satellite Theory	Ryan M. Weisman, Manoranjan Majji, and Kyle T. Alfriend	3:00PM-3:20PM	*invited

Theme	Mechanics of Fluids, gases, and Fluid/MEMS		Date: July-22	Room: A
Session	A08: Computational & Experimental Fluid/Electromagnetic Dynamics and Other A		Time: 4:00PM-6:30PM	
Paper	Title	Author	Time	
ICCES1520150522328	Efficient Load-balancing Scheme for Multi-agent Simulation System	Kensuke KURAMOTO, Masakazu FURUICHI, Kazuo KAKUDA	4:00PM-4:25PM	*keynote
ICCES1520150509298	Investigation of Shape functions for Meshless Time-Domain Method in Electromagnetic Wave Propagation Simulation	Taku Itoh and Soichiro Ikuno	4:25PM-4:50PM	*keynote
ICCES1520150216019	Design for Foam Drainage Gas Production Using Visual Basic Programming and Case Analysis	Jiaming Zhang, Xiaodong Wu, Zhangxin Chen, Xueqi Cen, Kai Zhang, Bo Wang, Shiwen Chen	4:50PM-5:10PM	
ICCES1520150517316	Experimental research on the rule of sand carrying by oil-water flow in heavy oil reservoirs	Yanfeng Cao, Hong Gao, Xiaoqiu Wang, Min Wen, Zhiming Wang	5:10PM-5:30PM	
ICCES1520150521325	One Dimensional unsaturated flow modeling in nitrogen uptake of pepper under wastewater irrigation	Xiaohui Lu	5:30PM-5:50PM	
ICCES1520150510301	Numerical investigation of a two-stage serial vibration isolation system using FRF-based substructuring method	Rong Guo, Meng-jia Wang, Sheng-qi Zhou, Shan Qiu	5:50PM-6:10PM	
ICCES1520150404109	The Finite Element Method for a Class of Nonlinear Wave Equations	Linlin Zhao and Shushen Xie	6:10PM-6:30PM	

Theme	Modeling in Engineering and Sciences		Date: July-23	Room: A
Session	A09: Symposium on Advances in Computational Modeling (in honor of Professor		Time: 8:30AM-10:15AM	
Paper	Title	Author	Time	
ICCES1520150519320	Data Driven Prognosis:A multi-physics approach verified via balloon burst experiment	Abhijit Chandra and Oliva Kar	8:30AM-8:55AM	*keynote
ICCES1520150320043	Why do cracks branch? A peridynamic investigation	Florin Bobaru and Guanfeng Zhang	8:55AM-9:20AM	*keynote
ICCES1520150323053	Contact Kinematics of Biomimetic Scales	Ranajay Ghosh, Hamid Ebrahimi, and Ashkan Vaziri	9:20AM-9:40AM	
ICCES1520150612412	New Trends in Topology Optimization	Glaucio H. Paulino	9:40AM-10:05AM	*keynote

Theme	Modeling in Engineering and Sciences		Date: July-23	Room: A
Session	A10: Symposium on Advances in Computational Modeling (in honor of Professor		Time: 10:30AM-12:15PM	
Paper	Title	Author	Time	
ICCES1520150515314	Dynamic Interaction between a Crack and an Auxetic Inclusion	A.-V. Phan and K. Kwon	10:30AM-10:50AM	
ICCES1520150430249	Influence of Spatial Thermal Modulation on Wrinkling of a Thin Film Bonded to a an Elastic Substrate – a Theoretical Study	Shrinidhi S. Pandurangi, Salil S. Kulkarni	10:50AM-11:10AM	
ICCES1520150501274	Computational Modelling of a Cricket Wing for Bioacoustic Analysis	Rudra Pratap, and Vamsy Godthi	11:10AM-11:35AM	*keynote
ICCES1520150426200	Corrosion damage modeling with peridynamics	Florin Bobaru and Ziguang Chen	11:35AM-11:55AM	
ICCES1520150526373	Fluid flow topology optimization using polygonal elements: Stability and Computational Implementation in PolyTop	Anderson Pereira, Cameron Talischi, Ivan F.M. Menezes, Marcio S. Carvalho and Glaucio H. Paulino	11:55AM-12:15PM	

Theme	Modeling in Engineering and Sciences		Date: July-23	Room: A
Session	A11: Symposium on Advances in Computational Modeling (in honor of Professor		Time: 1:30PM-3:30PM	
Paper	Title	Author	Time	
ICCES1520150621415	A Formulation for Fluid-Structure Interactions initiated by Underwater Implosion	J. S. Briscoe and S.W. Lee	1:30PM-2:00PM	*award
ICCES1520150526374	Large scale ground structure analysis using a scalable interior point algorithm	Ivan F.M. Menezes, A. Cubas and Glaucio H. Paulino	2:00PM-2:20PM	
ICCES1520150526377	Topology Optimization by Improved Element Exchange Method	Liang-Jenq Leu, Yen-Ling Tseng, Ko-Wei Shih, and Chun-Yu Ke	2:20PM-2:40PM	
ICCES1520150604395	An advanced ACA/BEM for solving large-scale elastic problems	T. Gortsas, S.V. Tsinopoulos, D. Polyzos	2:40PM-3:00PM	

ICCES1520150621416	Effect of curvature on interlaminar stresses in tapered composite structures	Ananth Virakthi	3:00PM-3:20PM	

Theme	**Advances in Material Science and Engineering**		**Date: July-23**	**Room: A**
Session	**A12: Advances in smart materials and systems for Infrastructures**		**Time: 4:00PM-6:00PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150427206	Vibration Characteristics of Rock under Harmonic Impact	Siqi Li , Tie Yan, Wei Li and Xianyi Li	4:00PM-4:25PM	*keynote
ICCES1520150524346	Design of UAV (Unmanned Aerial Vehicle)-type wall-climbing robot for inspection of wind blades	Sungwook Jung, Jae-Uk Shin, Wancheol Myeong, and Hyun Myung	4:25PM-4:45PM	
ICCES1520150525351	Feasibility study of a new model updating technique using kriging surrogate model	Hyung-Jo Jung, Jung-Hoon Lee, Seung-Seop Jin and Ho-Yeon Jung	4:45PM-5:05PM	
ICCES1520150529381	Hierarchical Compact Piezoelectric Tripod Manipulator Based on a Reverse Bridge-Type Amplifier	Jun-Ho Choi, Tae-Won Na and Il-Kwon Oh	5:05PM-5:25PM	
ICCES1520150529386	3D Networked Porous Graphene for Hydrogen Storage	Jung-Hwan Oh , Rajesh Kumar and Il-Kwon Oh	5:25PM-5:45PM	
ICCES1520150525352	Experimental Investigation of a new building integrated wind turbine system utilizing building skin	Jeongsu Park , Hyung-Jo Jung	5:45PM-6:05PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-21**	**Room: B**
Session	**B01: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150524343	The Analysis of Thin Shells with the Hexa 27 Solid Element	P.V. Marcal, J. Fong, N. Yamagata	8:30AM-9:10AM	*theme
ICCES1520150224021	The MLPG method for Cowin-Nunziato`s model of porous elastic materials	J. Sladek, V. Sladek, P. L. Bishay, S. Hrcek	9:10AM-9:40AM	*fellow
ICCES1520150524342	On the Mixed Meshless Local Petro-Galerkin (MLPG) Paradigm for the 4th Order Differential Equations	T. Jarak, J. Sorić and S.N. Atluri	9:40AM-10:00AM	
ICCES1520150525370	A modified Trefftz method for solving Cauchy inverse problems of three dimensional elasticity	Tao Zhang , Leiting Dong, and Satya. N. Atluri	10:00AM-10:20AM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-21**	**Room: B**
Session	**B02: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150604394	Analytical and numerical solutions for static and dynamic strain gradient elastic problems: new results and perspectives	Demosthenes Polyzos and Euripides J. Sellountos	10:30AM-11:00AM	*fellow
ICCES1520150517317	Application of the meshless boundary method to the thermal/flow problems with immersed objects	Chien-Ting Wu, Ching-Kai Chou, Der-Liang Young	11:00AM-11:25AM	*keynote
ICCES1520150518318	An arbitrary refinement technique by the coupled MLPG/FVM to the applications of thermal/flow problems	Ching-Kai Chou, Chien-Ting Wu, Der-Liang Young	11:25AM-11:45AM	
ICCES1520150307026	An hr- adaptive coupling method for exterior anisotropic elliptic problems	Quan Zheng, Feng Qin, Xin Zhao	11:45AM-12:10PM	*keynote

Theme	**Advances in Material Science and Engineering**		**Date: July-21**	**Room: B**
Session	**B03: Ill-posed and inverse problems**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150425194	Some fundamental issues and related solutions in anisotropic and layered solids	Ernian Pan	1:30PM-2:00PM	*award
ICCES1520150423186	Dual boundary element method formulation to simulate 3D sound absorbing barriers	J. António and A. Tadeu	2:00PM-2:25PM	*keynote
ICCES1520150525362	ACA applied to 3D anisotropic stress analysis of fiber-matrix composites using the multi-domain BEM	R. Q. Rodriguez, P. Sollero, C.L. Tan and E. L. Albuquerque	2:25PM-2:50PM	*keynote
ICCES1520150525361	On the evaluation of results at internal points in the hybrid boundary element methods	Carlos Andres Aguilar, Ney Augusto Dumont	2:50PM-3:10PM	
ICCES1520150413140	Fast Boundary Element Method for Shape Optimization of HTR-PM RPV Nozzle	Wen Bo, Zheng-cao Li, Hai-tao Wang	3:10PM-3:30PM	

Theme	Modeling in Engineering and Sciences		Date: July-21	Room: B
Session	B04: Computational Science for Welded Structures from Production to Reliability		Time: 4:00PM-6:30PM	
Paper	Title	Author	Time	
ICCES1520150325063	Variational Method for Plate Forming Problem to Compute Inherent Strain Field Subjected to Geometrical Restraint Condition	H. Murakawa, N. Takara, A. Kawahara, Y. Tango, M. Ishiyama	4:00PM-4:30PM	*fellow
ICCES1520150430256	Computational Weld Modeling and PWSCC Crack Growth Modeling Approaches	Frederick W. Brust, E. Punch	4:30PM-4:55PM	*keynote
ICCES1520150430257	Crack propagation analysis under the influence of weld residual stress	Masashi Nose, Hiroshi Okada, Akira Maekawa	4:55PM-5:25PM	*fellow
ICCES1520150414148	Estimation of welding deformation in ship structural blocks	Ninshu Ma and Atsuo Moriyama	5:25PM-5:50PM	*keynote
ICCES1520150531388	3-dimensional coupling numerical analysis of spot welding	R. Natsume, K. Ikushima, M. Shibahara	5:50PM-6:15PM	*keynote
ICCES1520150531389	Residual stress analysis of multi-pass welded joint	Kazuki Ikushima, Masakazu Shibahara	6:15PM-6:35PM	

Theme	Advances in Material Science and Engineering		Date: July-22	Room: B
Session	B05: Advances in Computational Material Sicence and Engineering		Time: 8:30AM-10:15AM	
Paper	Title	Author	Time	
ICCES1520150411136	Analytical and FE modeling of FGM beams based on a refined shear deformable beam theory for static and dynamic thermo-elastic analysis of FGM beams	C. Xie and G. Shi	8:30AM-8:55AM	*keynote
ICCES1520150422178	Molecular Dynamics Study on Nano Mechanics of Nanoindented Graphene Nanoribbon	Jeong Won Kang	8:55AM-9:20AM	*keynote
ICCES1520150501282	An h-adaptive Finite Element Model for Simulating Hydraulic Fracturing and Contaminant Transport	Jiajia Waters and Darrell W. Pepper	9:20AM-9:40AM	
ICCES1520150527378	Free Vibration and Dynamic Response Analysis of Laminated Thick-Section Plates and Shells by Hexahedral C0 Element with Over-Integration	Qifeng Fan, Yaping Zhang, Leiting Dong, Shu Li and Satya N. Atluri	9:40AM-10:00AM	
ICCES1520150429237	Flat-bottomed pressure head intruding into rock crushing mechanism	Shibin Li, Ligang Zhang	10:00AM-10:20AM	

Theme	Modeling in Engineering and Sciences		Date: July-22	Room: B
Session	B06: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods		Time: 10:30AM-12:15PM	
Paper	Title	Author	Time	
ICCES1520150512307	Elastic wave propagation in fluid-filled boreholes driven in non-homogeneous media, simulated by coupling the BEM and MLPG method	A. Tadeu, P. Stanak, J. Antonio, J. Sladek, V. Sladek	10:30AM-11:00AM	*fellow
ICCES1520150413142	Strain and Stress Analysis of Sliding Rough Surfaces	Jeng-Haur Horng, Shin-Yuh Chern, Cheng-Han Tsai	11:00AM-11:20AM	
ICCES1520150614413	Use of Miniature Specimen Test Techniques as Methods for Life Prediction.	Raghu V. Prakash	11:20AM-11:45AM	*keynote
ICCES1520150429232	A Numerical Simulation Evaluation of Hydraulic Fracturing for Layered Shale Formation based on Discrete Element Method(DEM)	Yumei Li , Jun Li, Gonghui Liu, Shibin Sun, Yu Liwei, MingTao Fan	11:45AM-12:05PM	
ICCES1520150501272	Calculation of Side Friction between Foundation and Conductor during Jetting Process	Yunjin Xu, Jin Yang, Wei Meng	12:05PM-12:25PM	

Theme	Modeling in Engineering and Sciences		Date: July-22	Room: B
Session	B07: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods		Time: 1:30PM-3:30PM	
Paper	Title	Author	Time	
ICCES1520150520321	Numerical Modeling of Material Discontinuity Using Mixed MLPG Collocation Method	B. Jalušić , J. Sorić and T. Jarak	1:30PM-1:55PM	*keynote
ICCES1520150628419	Method of Regularized Sources for Potential and Stokes Flow Problems in Axisymmetry	B. Sarler, R. Zahoor, S. Wen, W. Kai	1:55PM-2:20PM	*keynote
ICCES1520150401092	A Kind of Fractional Eigen value Boundary Value Problems	Junfang Zhao, Shijie Wang, Yu Wang	2:20PM-2:40PM	
ICCES1520150429238	Research on Chaos Features of Crack Evolution in Coal-Rock Fracturing	Wang Tingting,Zhao Dan,Zhao Wanchun,Jiang Dongfeng	2:40PM-3:00PM	

ICCES1520150313033	Computational Method for the Aeromechanical Behaviors of a Rotorcraft in Vortex Ring State	Weicheng Pei, Shu Li	3:00PM-3:20PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-22**	**Room: B**
Session	**B08: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 4:00PM-6:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150525358	ON THE CONSISTENT AND ACCURATE EVALUATION OF INTEGRALS WITH HIGH-ORDER SINGULARITIES AND QUASI-SINGULARITIES IN THE BOUNDARY ELEMENT METHODS	Ney Augusto Dumont	4:00PM-4:30PM	*fellow
ICCES1520150428222	Molecular Dynamics Simulation of Inelastic Deformation in a Multi-layered Material under Tensile Load	Takuya Uehara	4:30PM-4:55PM	*keynote
ICCES1520150421175	A reaction-diffusion-stress coupling model for stress evolution and distribution in the viscoplastic oxide scale during oxidation	Hailong Wang, Shuling Hu, Shengping Shen	4:55PM-5:25PM	*fellow
ICCES1520150404110	Positive solutions for boundary value problem of fractional differential equations	Fengjie Geng and Long Fang	5:25PM-5:45PM	
ICCES1520150430253	Study on cutting particles settling velocity within power law fluid	Sun Xiaofeng, Yan Tie, Wang Li, Li Xianyi	5:45PM-6:05PM	
ICCES1520150427209	Studies on Wellbore Stability of Shallow Sediments in Deepwater Drilling	Chi Ai, Jun Zhang, Yuwei Li	6:05PM-6:25PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: B**
Session	**B09: Advances in High-performance and Intelligent Computational Mechanics**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150415154	Variable-node polyhedral finite elements and their applications	Seyoung Im	8:30AM-9:00AM	*award
ICCES1520150402095	Elastic-Plastic Analysis of Cracked Structure and Performance Estimation Model with Partitioned Coupling Method	Yasunori Yusa and Shinobu Yoshimura	9:00AM-9:25AM	*keynote
ICCES1520150428223	Dynamic Mesh Refining and Iterative Substructure Method for Fillet Welding Thermo-Mechanical Analysis	Hui Huang, Hidekazu Murakawa	9:25AM-9:50AM	*keynote
ICCES1520150505287	Petascale Simulation of Real World's Complex Structure Attacked by Strong Earthquake	Shinobu Yoshimura, Tomonori Yamada, Tomoshi Miyamura, Hiroshi Kawai	9:50AM-10:20AM	*award

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: B**
Session	**B10: Advances in High-performance and Intelligent Computational Mechanics**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150525367	A Domain Specific Language in Continuum Mechanics Field for the Development of Finite Elements	Hiroshi Kawai, Ryuji Shioya	10:30AM-10:55AM	*keynote
ICCES1520150521326	Performance Evaluation of Flapping Motion of Deformable Wing Using Partitioned FSI Analysis	Giwon Hong, Tomonori Yamada and Shinobu Yoshimura	10:55AM-11:15AM	
ICCES1520150524331	High-accuracy Parallel Finite Element Electromagnetic Field Analysis Using Anatomical Human Models	A. Takei, K. Murotani, H. Kawai, T. Yamada and S. Yoshimura	11:15AM-11:35AM	
ICCES1520150525350	A MODIFIED BALANCING DOMAIN DECOMPOSITON METHOD ON ADDITIVE SCHWARTZ FRAMEWORK	Tomonori Yamada and Shinobu Yoshimura	11:35AM-11:55AM	
ICCES1520150521323	Matrix Preconditioning for Origin-Destination Estimation in Traffic Simulation	Kazuki Abe, Hideki Fujii and Shinobu Yoshimura	11:55AM-12:15PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: B**
Session	**B11: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 1:30PM-3:00PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150401082	Efficient methods for homogenization of random heterogeneous materials	Yufeng Nie， Yatao Wu，Junzhi Cui	1:30PM-1:55PM	*keynote
ICCES1520150525372	Micromechanics of Heterogeneous Materials by Computational Grains	Leiting Dong	1:55PM-2:20PM	*keynote
ICCES1520150326065	Computationally efficient numerical techniques for a space-fractional FitzHugh-Nagumo monodomain model	F. Liu, I. Turner and K. Burrage	2:20PM-2:45PM	*keynote

ICCES1520150524344	Generating Shell Meshes Using Solid Elements	R. Rainsberger, J. Fong, N. Yamagata, P.V. Marcal	2:45PM-3:05PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: B**
Session	**B12: Predictive Methods for Heterogeneous Material Design**		**Time: 3:00PM-6:00PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150604398	Physical and Computational Foundations for Predictive Performance Methodologies	Kenneth Reifsnider	3:00PM-3:40PM	*theme
ICCES1520150325062	Predicting Ionic Conductivity in Three-Dimensional Porous Electrochemical Electrode Microstructures	Matthew B. DeGostin and Wilson K. S. Chiu	4:00PM-4:25PM	*keynote
ICCES1520150526375	Multiphysics charge transport behavior study of heterogeneous functional material systems using finite element analysis of real microstructural domain	Fazle Rabbi, Kenneth Reifsnider	4:25PM-4:45PM	
ICCES1520150529385	COMPUTATIONAL DIELECTRIC PROPERTY ANALYSIS OF DAMAGED COMPOSITE MATERIALS	Rassel Raihan, Jeffrey Baker, Kenneth Reifsnider	4:45PM-5:05PM	
ICCES1520150604397	Novel catalysts for solid oxide metal-air redox battery	Cuijuan Zhang, Kevin Huang	5:05PM-5:25PM	
ICCES1520150605399	Multi-Physical Description and Framework for Prediction of Material State Evolution in Fiber Reinforced Composite Material	Dr. Prasun Majumdar, Jallisa Clifford, Mohammad FaisalHaider, Kevin Epley, and Hunter Goman	5:25PM-5:45PM	
ICCES1520150329069	A method for selecting the correct reamer and bit combination to drill specific formations in reaming while drilling	Xuyue Chen, Deli Gao, Boyun Guo	5:45PM-6:05PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-24**	**Room: B**
Session	**B13: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150524348	3D-printing and Macro Modeling of Micro Lattices	P.V. Marcal, J. Fong, R. Rainsberger, N. Yamagata	8:30AM-8:50AM	
ICCES1520150501273	Buckley-Leverett Analysis for Transient Two-phase Flow in Fractal Porous Medium	Yonggang Duan , Ting Lu, Mingqiang Wei, Boming Yu , Zhelun Zhang	8:50AM-9:10AM	
ICCES1520150401086	Singular boundary method for water wave problems	Zhuo-Jia Fu, Wen Chen, Zatianina Razafizana	9:10AM-9:30AM	
ICCES1520150319042	Dynamic Response of Curved Aluminum Panels Subjected to Thermo-mechanical loads	Prathmesh Naik Parrikar, Craig Tilton and Arun Shukla	9:30AM-9:50AM	
ICCES1520150604396	Determination of Mode I Stress Intensity Factor for a crack propagating in a micro-cracked plate	T. Gortsas, I. Diakides, S.V. Tsinopoulos	9:50AM-10:10AM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-24**	**Room: B**
Session	**B14: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150420166	Mixed Mode Cohesive Zone Modeling and Analysis of Adhesively Bonded Carbon Fiber Composite T-Joint under Pull-Out Load	A. Sane , P. M. Padole, C. M. Manjunatha and R.V. Uddanwadiker	10:30AM-10:50AM	
ICCES1520150126013	A Group Preserving Scheme and New Transformation Method for Solving Cauchy Inverse Problem of Nonhomogeneous Heat Equation in Ship Power System	Chih-Wen Chang	10:50AM-11:10AM	
ICCES1520150520322	Vibration Analysis of Arbitrarily Shaped Non-homogeneous Membranes by Using the Hybrid Dynamic Infinite Element Method	D.S. Liu, I.H. Lin	11:10AM-11:30AM	
ICCES1520150401081	The GL(N, R) shooting method for solving inverse heat source of nonhomogeneous heat equation in ship power system	Chih-Wen Chang	11:30AM-11:50AM	
ICCES1520150401084	The Lie-group adaptive scheme for solving heat capacity of nonlinear heat equation in ship engine system	Chih-Wen Chang	11:50AM-12:10PM	

Theme	**Multidisciplinary Analysis & Synthesis of Complex Systems**		**Date: July-21**	**Room: C**
Session	**C01: Computational Biology, Biomechanics and Bioengineering**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	

ICCES1520150426201	Computational modeling combined with engineering to develop right ventricle pulmonary valve replacement surgical	Chun Yang, Dalin Tang, Nikolay Vasilyev, Rahul Rathod, Tal Geva, Pedro J. del Nido	8:30AM-8:55AM	*keynote
ICCES1520150324060	Contralateral Artery Enlargement Predicts Carotid Plaque Progression Based On Machine Learning Algorithm Models in ApoE-/- Mice	Yuyu Yao, Yun Jiao, Bing Li	8:55AM-9:15AM	
ICCES1520150424188	Factors Influencing the Pressure Drop in a Patient Specific Right Coronary Artery with Multiple Stenoses	Biyue Liu and Dalin Tang	9:15AM-9:40AM	*keynote
ICCES1520150429236	Effects of Extracellular ATP Signal Transport and Shear Stress Modulation on Intracellular Calcium Dynamics in Vascular Endothelial Cells in a Shallow Microfluidic channel	Kai-Rong Qin, Zheng-Ming Gao, Long-Fei Li	9:40AM-10:00AM	
ICCES1520150429240	Comparing Acute Effects of Moderate and High Intensity of Cycling Intervention on Carotid Arterial Hemodynamics	Hai-Bin Liu, Wen-Xue Yuan,Yan-Xia Wang, Yan Chen, Kai-Rong Qin	10:00AM-10:20AM	

Theme	**Multidisciplinary Analysis & Synthesis of Complex Systems**		**Date: July-21**	**Room: C**
Session	**C02: Multi-Physics Modeling and Simulation of Fluid Systems**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150403102	Innovative uses of nanotechnology in civil infrastructures	H.K. Lee	10:30AM-11:00AM	*fellow
ICCES1520150525368	Interplay of Fluid Dynamics and Collective Behavior of Microorganisms	Alireza Karimi, Arezoo Ardekani	11:00AM-11:25AM	*keynote
ICCES1520150321048	Sensitivity analysis of wellbore flow while horizontal drilling in marine natural gas hydrate reservoir	Na Wei, Ying-Feng Meng, Gao Li, Ping Guo, An-Qi Liu, Bo-yun Guo,Wan-Tong Sun, Tian Xu	11:25AM-11:45AM	
ICCES1520150327067	Aging Effects on Tracheobronchial (TB) Whole Lung and Idealized Airways	Jongwon Kim, Rebecca Heise, Angela Reynolds and Ramana Pidaparti	11:45AM-12:10PM	*keynote

Theme	**Multidisciplinary Analysis & Synthesis of Complex Systems**		**Date: July-21**	**Room: C**
Session	**C03: Computer-Aided Design and Analysis of Sub-sea Engng Systems in Oil and**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150401087	FDM with SADI Captured Complexity of an Oil Reservoir Near a Salt Dome in the Gulf of Mexico	Boyun Guo	1:30PM-2:10PM	*theme
ICCES1520150514312	The Research of Deep Penetration and Low-Damage Acidizing Fluid for Suizhong 36-1 Oilfield	Wang Jigang,Liu Qingwang,Fan Zhenzhong,Liu zhikai	2:10PM-2:35PM	*keynote
ICCES1520150427210	The Near-bit Torsional Impactor and Its Application Based on Stick-slip Vibration	Wei Li, Tie Yan and Siqi Li	2:35PM-2:55PM	
ICCES1520150428220	Simulation on incipient particle motion in complex structure wells	Sun Xiaofeng, Yan Tie, Wang Li	2:55PM-3:15PM	
ICCES1520150409128	Origin Mechanism and model of Reservoir Tightness of Jurassic Tight Sandstone Gas Reservoir in Wenjisang Area, Tuha Basin, China	Qinglin Bai, Shaochun Yang, Guoning Chen, Xiaodong Zhao	3:15PM-3:35PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-21**	**Room: C**
Session	**C04: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 4:00PM-6:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150413141	A Solid-shell Element based on Numerical Manifold Method with Independent Covers(ICNMM)	Guang-chao Zhang, Yong-chang Cai, He-hua Zhu	4:00PM-4:25PM	*keynote
ICCES1520150525357	A numerical model for the simulation of depth-averaged flow and transport phenomena in sedimentary basins	Ney A. Dumont, Elvis Y. Mamani, Carlos A. Aguilar, Hélvio F. C. Peixoto, Alexandre A. O. Lopes, Stefane Lopes	4:25PM-4:45PM	
ICCES1520150426197	A Meshless Local Petrov-Galerkin Method for Chloride Diffusion in Concrete	Ling Yao, Xiaolu Li and Ling Zhang	4:45PM-5:05PM	
ICCES1520150622417	Aerodynamic Shape Optimization	Sanjay Mittal, Varun Bhatt, S. Jawahar Sivabharathy	5:05PM-5:35PM	*award
ICCES1520150502285	Finite element characterization of the influence of rock plasticity on hydraulic fracturing	W. Liu, H.T. Li, B.H. Yu and J.G. Deng	5:35PM-5:55PM	

ICCES1520150316036	Analysis of hypersonic panel flutter with third-order piston theory	Dan Xie, Min Xu, Honghua Dai and Tao Chen	5:55PM-6:20PM	*keynote

Theme	**Advances in Material Science and Engineering**		**Date: July-22**	**Room: C**
Session	**C05: Amorphous Material Systems for Extreme**	**Loading Conditions: Theory, Exp**	**Time: 8:30AM-11:00AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150609401	Deformation and Failure Analysis of Nanoscale Hydrated Calcium Silicate Hydrate (CSH) ik Cement Paste under Compression: CSH Jennite	A. Mohamed, W. Hodo, J. Rivas, R. Mohan, A. Rajendran, and R. Valisetty	8:30AM-8:50AM	*invited
ICCES1520150701420	Amorphous Materials for Transparent Armor	Timothy Talladay	8:50AM-9:10AM	
ICCES1520150424191	Multiscale Simulation of Nanostructural Transition under Extreme Loading	Zhen Chen, Shan Jiang, Yu-Chen Su, Yong Gan, and Thomas D. Sewell	9:10AM-9:35AM	*keynote
ICCES1520150513310	Atomic Scale Modeling of Shock-Response of Fused Silica	Jin Wang and Avinash M. Dongare	9:35AM-9:55AM	*invited
ICCES1520150602392	Toward Better Models and Materials for Glass Armor	Donald A. Shockey and Takao Kobayashi	9:55AM-10:20AM	*keynote
ICCES1520150603393	Computational Modeling of Heterogeneous Materials under Shock Loading Conditions: Challenges and Issues	Arunachalam Rajendran and Mathew Nelms	10:30AM-11:00AM	*fellow

Theme	**Mechanics of Fluids, gases, and Fluid/MEMS**		**Date: July-22**	**Room: C**
Session	**C06: Fluid-Structure Interaction**		**Time: 11:00AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150407116	New Advances in MLPG_R Method for Modeling the Breaking Waves and Their Interaction with Structures	Q.W. MA	11:00AM-11:30AM	*fellow
ICCES1520150524338	Review of Bilge Keel Loads Calculations for FPSOs	Xiaochuan Yu, Xuan Kong, Lixin Xu	11:30AM-11:55AM	*keynote
ICCES1520150410133	A new interface identification technique in two-phase MLPG_R method	Yan Zhou, Qingwei Ma, Shiqiang Yan	11:55AM-12:15PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-22**	**Room: C**
Session	**C07: MLPG, MFS, LBIE, SGBEM, BIE, and other**	**novel computational methods**	**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150311030	Two Alternating Direction Implicit Difference Schemes for Two-dimensional Distributed-Order Fractional Diffusion Equations	Zhi-zhong Sun and Guang-hua Gao	1:30PM-1:55PM	*keynote
ICCES1520150321046	Finite Difference Methods for a Class of Time Distributed-order Fractional Wave Equations	Guang-hua Gao, Zhi-zhong Sun	1:55PM-2:15PM	
ICCES1520150330075	Existence of unbounded solutions for a n-th order BVPs with a p-Laplacian	Hairong Lian, Yue Gao, Junfang Zhao, Yongli Xing	2:15PM-2:35PM	
ICCES1520150316038	A time domain collocation method for obtaining the periodic solutions to the van der Pol oscillator	Xuechuan Wang, Honghua Dai, Xiaokui Yue	2:35PM-3:00PM	*keynote
ICCES1520150319041	Numerical algorithms with high spatial accuracy for the fourth-order fractional sub-diffusion equations with the first Dirichlet boundary conditions	Cui-cui Ji, Zhi-zhong Sun	3:00PM-3:20PM	
ICCES1520150525359	Use of improved Westergaard stress functions for the adequate simulation of the stress field around crack tips including plastic zones	Elvis Yuri Mamani-V, Ney Augusto Dumont	3:20PM-3:40PM	

Theme	**Mechanics of Fluids, gases, and Fluid/MEMS**		**Date: July-22**	**Room: C**
Session	**C08: Fluid-Structure Interaction**		**Time: 4:00PM-6:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150429231	Slamming Impact Water Entry Problem for Deformable Composite Materials using Explicite Finite Element Method	Omar Hashim Hassoon	4:00PM-4:20PM	
ICCES1520150524334	TLP Motion Suppression with New Type Tuned Liquid Column Dampers	Yang Yu and Lixin Xu	4:20PM-4:40PM	
ICCES1520150524335	Understanding and Numerical Investigation of Wave Absorption Methods	Chengxi Li and Yuming Liu	4:40PM-5:00PM	
ICCES1520150413137	An improved technique to generate rogue waves in random seas	Jinghua Wang, S Yan, Q.W Ma	5:00PM-5:20PM	

ICCES1520150510300	The combination of Tikhonov regularization and SVD to improve force reconstruction accuracy and its application in simple and complex structures	Rong Guo, Sheng-qi Zhou, Meng-jia Wang, Huai-qing Fang	5:20PM-5:45PM	*keynote
ICCES1520150525356	A Unified Model of Oil-Water Two-Phase Flow in the Complex Pipeline	Quanshu ZENG, Zhiming WANG, Xiaoqiu WANG	5:45PM-6:05PM	
ICCES1520150429226	Simulation Research on Well Control Method without Shutting Well In of Subsea Mud-lift Drilling	Jiwei Li,Jun Li, Gonghui Liu, Yan Xi, Miao He, Hongqi Zhang, Yongxian Duan, Jun Chen, Youwei Li, Yongzhe Shi	6:05PM-6:25PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: C**
Session	**C09: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150422179	3D Printing Process Simulation with Meshless Method	Ming-Hsiao Lee, Chau-Yi Chou, Shou-I Chen, Keng-Liang Ou, Wen-Hwa Chen	8:30AM-8:55AM	*keynote
ICCES1520150309027	3D SGBEM-FEM Alternating Method for Analyzing Mixed-mode Surface Cracks & Non-planar Fatigue-crack-propagation of complex 3D Structures	Longgang Tian, Yongchang Cai, Hehua Zhu, and Satya N. Atluri	8:55AM-9:20AM	*keynote
ICCES1520141213008	Collocation methods to solve certain Hilbert integral equation with middle rectangle rule	Jin Li and De-hao Yu	9:20AM-9:40AM	
ICCES1520150123012	Locally supported kernels method of approximate particular solutions for solving elliptic problems with variable coefficients	Marjan Uddin, Kamran, Amjad Ali	9:40AM-10:00AM	
ICCES1520150425192	Semi-analytical solutions of Fractional Diffusion equations via collocation Trefftz method	Zhuojia FU, Hongguang SUN	10:00AM-10:20AM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: C**
Session	**C10: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150414147	RS-HDMR Based Response Surfaces for Probabilistic Vehicle-Bridge Interaction Studies	S. Arun, Devdas Menon, and A. Meher Prasad	10:30AM-10:55AM	*keynote
ICCES1520150409127	The Combination of Carboniferous Volcanic Reservoir Spaces and Hydrocarbon Storage Modes in Chepaizi Area, Junggar Basin, China	Shaochun Yang, Yaru Wen, Chunmin Xue, Kui Xiang, Yong Wang	10:55AM-11:20AM	*keynote
ICCES1520150329070	A review on modeling of transport characteristics in fractured networks	Tongjun Miao and Boming Yu	11:20AM-11:45AM	*keynote
ICCES1520150105009	A Fictitious Time Integration Method for Solving Backward Fisher's Equation in Flame Location	Chih-Wen Chang	11:45AM-12:10PM	*keynote

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: C**
Session	**C11: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150323056	Modeling and simulation of three-component flows on solid surface	Yi Shi, Xiao-Ping Wang	1:30PM-1:50PM	
ICCES1520150501284	Mixed unsplit-field perfectly matched layers for plane-electromagnetic-wave simulation in the time domain	Sang-Ri Yi, Boyoung Kim, and Jun Won Kang	1:50PM-2:10PM	
ICCES1520150601390	Towards Multidisciplinary Analysis and Design Optimization for Wings and SpaRibs	Rakesh K. Kapania	2:10PM-2:35PM	*keynote
ICCES1520150121011	Numerical Solution for Tubular Expansion of Curved Pipe	Abdullah M. Al Shabibi	2:35PM-2:55PM	
ICCES1520150502286	Geosterss calculation mode of bedding soft rock	Zhang Ligang, Tao xin, Li you	2:55PM-3:15PM	
ICCES1520150429234	Finite Element Analysis of Casing Deformation during Hydraulic Fracturing of the Horizontal Wells in Shale Reservoirs	Mingtao Fan,Gonghui Liu,Jun Li,Miao He,Yan Xi,Yumei Li	3:15PM-3:35PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-23**	**Room: C**
Session	**C12: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 4:00PM-6:00PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150428218	Analysis of Fractional Flow for Transient Two-phase Flow in Fractal Porous Medium	Ting Lu, Yonggang Duan, Quantang Fang, Xiaolu Dai	4:00PM-4:20PM	

ICCES1520150515313	Computational homogenization-based models of fresh concrete flow	Filip Kolarik, Jan Zeman, Borek Patzak	4:20PM-4:40PM	
ICCES1520150212018	Application of finite fracture mechanics approach to selected crack problems in layered structures	Michal Kotoul, Oldrich Sevecek, Tomas Profant	4:40PM-5:00PM	
ICCES1520150429241	A Numerical Model for Evaluating Well Kick with Lost Circulation during Managed Pressure Drilling	Miao He,Jun Li,Gonghui Liu,Mingtao Fan,Yan Xi,Yongxian Duan,Jun Chen,Silong He,Feng Shan	5:00PM-5:20PM	
ICCES1520150429230	Analysis of Cement Annulus Stress in Pressure-Temperature Coupling Effect During Shale Staged Fracturing	Yan Xi,Gonghui Liu,Jun Li,Mingtao Fan,Jiwei Li,Miao He	5:20PM-5:40PM	
ICCES1520150407120	A review on non-Darcy seepage analytical solution	Jinsui Wu	5:40PM-6:00PM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-24**	**Room: C**
Session	**C13: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150428221	Numerical investigation on the singular boundary method	Junpu Li, Wen Chen, Zhuojia Fu	8:30AM-8:50AM	
ICCES1520150322050	A frequency domain formulation of the singular boundary method for modelling transient wave propagation in poroelastic media	Linlin Sun, Wen Chen	8:50AM-9:10AM	
ICCES1520150401091	Multiscale Modeling for Process Safety Applications	Arnab Chakrabarty, Tahir Cagin and Sam Mannan	9:10AM-9:30AM	
ICCES1520150401090	The implicit Lie-group iterative algorithm for solving inverse vibration problem in ship structure	Chih-Wen Chang	9:30AM-9:50AM	
ICCES1520150426203	Finite element analysis on the dynamic behavior of a shallow rectangular tunnel structure in liquefiable ground	X.H. Bao, Z.F. Xia, G.L. Ye and Y.B. Fu	9:50AM-10:10AM	

Theme	**Modeling in Engineering and Sciences**		**Date: July-24**	**Room: C**
Session	**C14: MLPG, MFS, LBIE, SGBEM, BIE, and other novel computational methods**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150428224	Nonlinear dynamics of a delay-coupled neural network	Xiaochen Mao	10:30AM-10:50AM	
ICCES1520150430246	A new scheme for the solution of reaction diffusion and wave propagation problems	Ji Lin, Wen Chen, C.S. Chen	10:50AM-11:10AM	
ICCES1520150601391	Influence of nano concentration on the strength of GO–cement composites	Wonseok Chung, Gang Seok Seo, Youngmin Song, and Donghoon Kang	11:10AM-11:30AM	
ICCES1520150424190	Ball's motion, sliding friction, and internal load distribution in a high-speed ball bearing subjected to a combined radial, thrust, and moment load	Mário César Ricci	11:30AM-11:50AM	
ICCES1520150326064	Evaluation of deformation recovery properties of polymer modified asphalt binders	Lan Wang, Chun-qing Chang, Yong-ming Xing	11:50AM-12:10PM	

Theme	**Experimental Mechanics**		**Date: July-21**	**Room: D**
Session	**D01: Symposium on Experimental Mechanics and Optical Metrology (in honor of I**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150701421	Lifetime Achievement Medal Lecture	J. Dally	8:30AM-9:00AM	*award
ICCES1520150226022	Nano-fabricated pixelated micropolarizer array for visible imaging polarimetry	Qingchuan Zhang, Zhigang Zhang, Fengliang Dong, Weiguo Chu, Xiaoping Wu	9:00AM-9:25AM	*keynote
ICCES1520150515315	High-resolution, superfast 3D optical sensing and applications	Song Zhang	9:25AM-9:45AM	
ICCES1520150323054	Synchronous full-field measurement of temperature and deformation of C/SiC composite subjected to flame heating at high temperature	Xue Feng	9:45AM-10:05AM	

Theme	**Experimental Mechanics**		**Date: July-21**	**Room: D**
Session	**D02: Symposium on Experimental Mechanics and Optical Metrology (in honor of I**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	

ICCES1520150426195	One-Pitch Phase Analysis Method for Grating and Its Application to Shape Analysis of Vibrating Object	Yoshiharu MORIMOTO, Yoshiyuki KUSUNOKI, Masaki UEKI, Akihiro MASAYA and Akifumi TAKAGI	10:30AM-11:00AM	*fellow
ICCES1520150615414	3D Deformation Field Throughout the Interior of Materials	Helena Jin, Wei-Yang Lu	11:00AM-11:20AM	
ICCES1520150524330	Development of Photoelastic Experimental Hybrid Method and Application	Jai-Sug Hawong	11:20AM-11:40AM	
ICCES1520150501277	The Constitutive Response of Low Impedance Materials Subjected to High Strain Rate Loading using Inverse method	Behrad Koohbor, Addis Kidane	11:40AM-12:00PM	
ICCES1520150323051	Field Scaled Analysis of Geo-stress Based on Thermo-Hydro-Mechanical	JI Youjun, Wang Jie, Huang Liuke	12:00PM-12:20PM	

Theme	**Experimental Mechanics**		**Date: July-21**	**Room: D**
Session	**D03: Symposium on Experimental Mechanics and Optical Metrology (in honor of I**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150429239	Visualization of compression deformation distribution of thin-walled spheres based on 3D-DIC	Meiling Dai, Xiaoyuan He, Fujun Yang	1:30PM-1:55PM	*keynote
ICCES1520150427215	Full-field deformation measurement technique without the influence of microscope scanning distortion by generating secondary moiré fringes	Qinghua WANG, Shien RI, Satoshi KISHIMOTO	1:55PM-2:15PM	
ICCES1520150430248	Super-resolution digital image correlation using camera array and image stitching	Xinxing Shao, Chengfei Wang, Yingjun Xu, Xiaoyuan He	2:15PM-2:35PM	
ICCES1520150407121	Fringe Projection for Measurement Viberation Mode of Thin Plates	Fujun Yang, Yijun Jiang, Xiaoyuan He	2:35PM-2:55PM	
ICCES1520150501266	Analysis of residual stress on CO2 welded carbon structural steel by loading conditions using 3D ESPI	N.Y. Yun, T.H. Choi, W. J. Kim, H.C. Jung, Yoshida , J.A. Todd , and K.S. Kim	2:55PM-3:15PM	

Theme	**Advances in Material Science and Engineering**		**Date: July-21**	**Room: D**
Session	**D04: Advances in Bio-medical Engineering and Technology**		**Time: 4:00PM-6:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150210016	Second-order efficient remapping algorithm for two-dimensional cell-centered multi-material arbitrary Lagrangian-Eulerian method	Chuanlei Zhai, Heng Yong	4:00PM-4:20PM	
ICCES1520150420172	Numerical evaluation of trabecular bone alterations: a Cell Method application	Cosmi Francesca	4:20PM-4:45PM	*keynote
ICCES1520150407122	Estimation of Gripping forces of various objects by human palm using Surface electromyogram	Tushar Kulkarni, Rashmi Uddanwadiker, Nirbhay Karandikar	4:45PM-5:05PM	
ICCES1520150430252	CFD Analysis of Pulsatile Flow and Non-Newtonian Behavior of Blood in Arteries	P. Jhunjhunwala , P.M. Padole, S.B. Thombre	5:05PM-5:25PM	
ICCES1520150409129	Cancer detection by saliva test using Surface Enhanced Raman Spectroscopy	Wen-Xin Zheng, Lin Li, Anyu Chen	5:25PM-5:45PM	
ICCES1520150429242	Kinematic Modelling and Synthesis of a Human Finger as Multiple Four Bar Mechanism	Tushar Kulkarni, Rashmi Uddanwadiker, Nirbhay Karandikar	5:45PM-6:05PM	
ICCES1520150423187	3D Thin-Layer Structure Only Models for Coronary Atherosclerotic Plaques	Xueying Huang, Chun Yang, Jie Zheng, Richard Bach, David Muccigrosso, Pamela K. Woodard, Dalin Tang	6:05PM-6:25PM	

Theme	**Experimental Mechanics**		**Date: July-22**	**Room: D**
Session	**D05: Symposium on Experimental Mechanics and Optical Metrology (in honor of I**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150714428	Implosion of Underwater Structures	Arun Shukla	8:30AM-9:00AM	*award
ICCES1520150427217	Advanced moire methodology for deformation measurement and structural characterization using repeated pattern from nano to mega scale	Shien RI, Qinghua WANG	9:00AM-9:25AM	*keynote
ICCES1520150510302	Local Strain Analysis of Nitinol During Cyclic Loading	Kenneth Perry	9:25AM-9:45AM	

ICCES1520150430261	Small Pitch Phase-shifted Fringe Projection Method with Multi-core Fiber Using the Talbot effect	Takumi HAYASHI, Motoharu FUJIGAKI, Yorinobu MURATA	9:45AM-10:05AM	
ICCES1520150429243	Compressive failure of laser welded alloy panels inspected by optical technique	Lei Zhenkun, Bai Ruixiang, Tao Wang	10:05AM-10:10AM	*poster
Theme	**Experimental Mechanics**		**Date: July-22**	**Room: D**
Session	**D06: Shape, Deformation and Strain Analysis**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150428225	Prototype of High-speed Camera Switching System for 3D Shape and Strain Measurement	Motoharu FUJIGAKI, Takaaki YOSHIKAWA, Yorinobu MURATA	10:30AM-10:55AM	*keynote
ICCES1520150406113	The inflation of stressed cylindrical shell：An experimental study	Shibin Wang, Qi Liu, Zhiming Guo, Linan Li, Yibin Fu	10:55AM-11:15AM	
ICCES1520150501267	Comparison of mechanical properties before and after of heat treatment on structural steel for ships using electronic speckle pattern interferometry	H.J. Lee , N.Y.Yun , J.G.Song , H.C. Jung , S. Yoshida , and K.S. Kim	11:15AM-11:35AM	
ICCES1520150401083	Study of the microstructure and mechanical properties of a nanostructured surface layer on 316L stainless steel	F.C. Lang,Y.R. Zhao,Y.M. Xing, A.F. Jiang	11:35AM-11:55AM	
ICCES1520150429233	The Research on Production Decline Model of Tight Oil Reservoir	Zongxiao Ren, Xiaodong Wu, Guoqing Han, Zhun Li	11:55AM-12:15PM	
Theme	**Advances in Material Science and Engineering**		**Date: July-22**	**Room: D**
Session	**D07: Metamaterial Science and Technology**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150512308	Plasmonic Magnetization During Circularly Polarized Excitation	Athavan Nadarajah, Matthew Sheldon	1:30PM-1:50PM	*invited
ICCES1520150519319	Some Consequences of the Properties of Metamaterials for Wireless Power Transfer	Chris Stevens	1:50PM-2:15PM	*keynote
ICCES1520150524340	Concentration of acoustic waves by the metamaterial-convex-lens with the orifice characteristics	Choon Mahn Park and Sang Hun Lee	2:15PM-2:40PM	*keynote
ICCES1520150524347	Superconducting Metamaterials	Alexey V. Ustinov, Alexandre Karpov	2:40PM-3:05PM	*keynote
ICCES1520150525349	Fabrication of Metamaterials and its Application toward Energy Devices	Wakana Kubo	3:05PM-3:30PM	*keynote
Theme	**Advances in Material Science and Engineering**		**Date: July-22**	**Room: D**
Session	**D08: Metamaterial Science and Technology**		**Time: 4:00PM-6:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150525354	Graphene metadevices at THz frequencies	Bumki Mn	4:00PM-4:25PM	*keynote
ICCES1520150525355	Metamaterials and Antenna Miniaturization	Bratin Ghosh	4:25PM-4:50PM	*keynote
ICCES1520150525363	Metamaterial fiber arrays and tunable radiation pressure	Jeremy N. Munday	4:50PM-5:15PM	*keynote
ICCES1520150525371	Emergence of optical self-organization and robust light localization in nanophotonics	Kosmas L. Tsakmakidis, Pankaj K. Jha, Yuan Wang, and Xiang Zhang	5:15PM-5:40PM	*keynote
ICCES1520150529379	Towards self-assembled metamaterials for the visible light	Virginie PONSINET, Xuan WANG, Kevin EHRHARDT, Philippe RICHETTI, Ashod ARADIAN, Philippe BAROIS, Jean-Baptiste SALMON, Sergio GOMEZ-GRAÑA, Mona TREGUER-DELAPIERRE	5:40PM-6:05PM	*keynote
ICCES1520150427216	Shear response of a ∑9 grain boundary at various energy states	Wenshan Yu , Shengping Shen and M.J. Demkowicz	6:05PM-6:25PM	
Theme	**Advances in Material Science and Engineering**		**Date: July-23**	**Room: D**
Session	**D09: Nanomaterials and Low-dimensional Structures**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150526376	Towards a unified model for nanomaterial systems based upon the integrated Green's function	V.K. Tewary and Alex Smolyanitsky	8:30AM-8:55AM	*keynote
ICCES1520150403107	Order And Disorder In Organic And Perovskite Photovoltaics	Davor Balzar	8:55AM-9:20AM	*keynote

ICCES1520150511306	Predicting B-Basis Stiffness and Strengths of Discontinuous Fiber Composites Produced using Pre-Preg Chips	Karen Harban, Michael Arce, and Mark Tuttle	9:20AM-9:45AM	*keynote
ICCES1520150408126	Phase coarsening in two- and three-dimensional systems	K. G. Wang, H. Yan, and M.E. Glicksman	9:45AM-10:10AM	*keynote

Theme	**Advances in Material Science and Engineering**		**Date: July-23**	**Room: D**
Session	**D10: Nanomaterials and Low-dimensional Structures**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150514311	Stability And Electronic Properties In Prototype 2-D Layered Structures	Cristian V. Ciobanu	10:30AM-10:55AM	*keynote
ICCES1520150420170	Materials Screening through GPU Accelerated Topological Mapping	Branden B. Kappes and Cristian V. Ciobanu	10:55AM-11:15AM	
ICCES1520150525366	Parallels between solidification and solid-state dewetting: capillary-driven shape instabilities in solid thin films	Rachel V. Zucker, W. Craig Carter, Carl V. Thompson	11:15AM-11:35AM	
ICCES1520150524332	Theory and modeling of frictional loss in two-dimensional and lamellar materials	Alex Smolyanitsky	11:35AM-11:55AM	
ICCES1520150408123	Effect of structural evolution of nano film under high magnetic field on the variation of magnetic properties	Guojian Li, Qiang Wang, Yongze Cao, Jiaojiao Du, Kai Wang, Jicheng He	11:55AM-12:20PM	*keynote

Theme	**Advances in Material Science and Engineering**		**Date: July-23**	**Room: D**
Session	**D11: Nanomaterials and Low-dimensional Structures**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150408125	High Temperature Behavior of Monolayer Transition Metal Dichalcogenides and Their Interaction with Substrate: Dependence on Substrate Type and Bonding	Yong Zhang	1:30PM-1:55PM	*keynote
ICCES1520150525369	Recent Progress on Synthesis and Characterization of Boron Carbide One-Dimensional Nanostructures	Terry Xu	1:55PM-2:20PM	*keynote
ICCES1520150406114	Structural evolutions of supported alloy nanoparticles during the melting and coalescence processes by using molecular dynamics simulation	Guojian Li, Qiang Wang, Huimin Wang, Xudong Sui, Yue Zhao, Yonghui Ma	2:20PM-2:40PM	
ICCES1520150529380	Structural and Optical Properties of the Naked and Passivated Al5Au5 Bimetallic Nanocluster.	Rafael Grande-Aztatzi, Elena Formoso, Jose M. Mercero, Jon M. Matxain and Jesus M. Ugalde	2:40PM-3:05PM	*keynote
ICCES1520150505288	Deformation mechanisms of Cu nanowires with planar defects	Xia Tian, Junzhi Cui, Xingang Yu	3:05PM-3:25PM	

Theme	**Advances in Material Science and Engineering**		**Date: July-23**	**Room: D**
Session	**D12: Nanomaterials and Low-dimensional Structures**		**Time: 4:00PM-6:00PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150627418	Damage Detection of Composite Structures Using Percolated Carbon Nanotube Networks	Yeong-Tae Jung, Hyung Doh Roh, Changyoon Jeong, Dae Han Sung, Homin Lee, Young-Bin Park	4:00PM-4:20PM	
ICCES1520150430263	A Study of Mechanical Properties of Multi-Layered Graphene using Modified Nosé-Hoover based Molecular Dynamics	I-Chu Chen, Kun-Ling Chen, Ching-Feng Yu, Hsien-Chie Cheng,and Wen-Hwa Chen	4:20PM-4:40PM	
ICCES1520150430247	Mechanism of enhancing penetration rate by a new type of composite impact drilling tool	Chunqing Zha, Gonghui Liu, Jun Li, Yumei Li,Miao He	4:40PM-5:00PM	
ICCES1520150525353	A Novel Autonomous Inflow Control Device Design based on the jet mechanisms of round pipes	Zou Weilin	5:00PM-5:20PM	
ICCES1520150414144	BEM for simulation of flow of nanofluids	J. Ravnik and L. Skerget	5:20PM-5:40PM	
ICCES1520150313032	Gel breaking of ammonium persulfate for HEC in salt solution	Yuxiu An, Lingyu Zhang, Rourong Qi, Qingying Ge, Guancheng Jiang	5:40PM-6:00PM	

Theme	**Poster**		**Date: July-21**	**Room: E**
Session	**E01: Poster**		**Time: 8:30AM-10:15AM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150506290	Research on key technology for cracking control of concrete dam in the dry-hot valley	Shuping Huang, Yancai Li	8:30AM-8:35AM	*poster

ICCES1520150130014	Experimental Study on Strain Sensing by Small-Diameter FBG	Rong-mei Liu,Da-kai Liang	8:35AM-8:40AM	*poster
ICCES1520150401085	Model of hydrodynamic pressures in concrete cracks under dynamic load	Chengbin Du, Kaichun Li, Shouyan Jiang	8:40AM-8:45AM	*poster
ICCES1520150522327	Efficiently realized deterministic nanooptical elements	Dennis Lehr, Kay Dietrich, Thomas Siefke, Ernst-Bernhard Kley	8:45AM-8:50AM	*poster
ICCES1520150402100	Mechanical characterization of Aβ amyloid fibrils depend on aromatic residues at atomistic scale	Myeongsang Lee, Inhcul Baek, Hyun Joon Chang and Sungsoo Na	8:50AM-8:55AM	*poster
ICCES1520150402101	Automatic Inversion of Mechanical Parameters of Surrounding Rock of Underground Cavern Based on Asynchronous Particle Swarm Optimization method and ABAQUS	Lei Xu, Yanchun Lu, Taijun Zhang, Qingwen Ren	8:55AM-9:00AM	*poster
ICCES1520150415157	With the extended finite element simulation of meso-level concrete tensile damage	Sun Guoli	9:00AM-9:05AM	*poster
ICCES1520150331079	Analysis and Prediction of Plate Deformation due to the Line Heating Process Considering Multiple Heating Lines	Adán Vega Sáenz, Ninshu Ma and Hidekazu Murakawa	9:05AM-9:10AM	*poster
ICCES1520150416158	Numerical investigation of cover cracking of reinforced concrete bridge decks due to rebar corrosion	NING XIA	9:10AM-9:15AM	*poster
ICCES1520150430251	Studies on Lithology Characteristics and Effective Development of Tight Oil Reservoir	Yu-Tian Luo, Ying-Zhi Zhang, Xue-Wu Wang, Ying He	9:15AM-9:20AM	*poster
ICCES1520150429235	Design and Development of Low Cost Nose Implants Suitable for Asian Face Morphology	Adwait Inamdar, Nikhil Adhe, Sourabh Shende, Rashmi Uddanwadiker and Subhash Lulay	9:20AM-9:25AM	*poster
ICCES1520150414145	Static Stress Analysis of Carbon Nanotube Reinforced Composite (CNTRC) Stiffened Plates with Central Hole	A G Mujawar and S M Shiyekar	9:25AM-9:30AM	*poster
ICCES1520150402098	Curves on Real Algebraic Surfaces: Ontology and Interval Extensions	N.M. Glazunov, A.V. Vecherkovskaya	9:30AM-9:35AM	*poster
ICCES1520141209007	Muscle fatigue evaluation during isometric contraction using surface EMG	Mr. Chetan Kuthe , Dr. R.V. Uddanwadiker, Dr. Alankar Ramteke	9:35AM-9:40AM	*poster
ICCES1520150525365	On a fast-multipole unified technique for the analysis of different classes of continuum mechanics problems with the boundary element method	Hélvio de Farias Costa Peixoto, Larissa Simões Novelino, Ney Augusto Dumont	9:40AM-9:45AM	*poster
ICCES1520150429228	CFD Study on the Effect of Support Modes on Aortic Wall Shear Stress and OSI	Kaiyun Gu, Jia Chen, Yu Chang, Bin Gao and Yi Zeng	9:45AM-9:50AM	*poster
ICCES1520150421177	Buckling of Stiffened Carbon Nano Tube Reinforced Composite (CNTRC) Plates	Wadkar Ranjit and S M Shiyekar	9:50AM-9:55AM	*poster
ICCES1520150402096	Ontologies, Contexts and Methods to Justification of Conjecture	N.M. Glazunov	9:55AM-10:00AM	*poster
ICCES1520150416163	Hemodynamic Based Surgical Decision on Sequential Graft and Y-Type Graft in Coronary Artery Bypass Grafting	Xi Zhao, Youjun Liu, Wenxin Wang	10:00AM-10:05AM	*poster
ICCES1520150501265	Low Cycle Fatigue behaviour of 316 (L)N stainless steel in presence of notch	Richa Agrawala, J. Veerababu, Sunil Goyal, R. Sandhya, Rashmi Uddanwadiker , Pramod Padole	10:05AM-10:10AM	*poster
ICCES1520150403106	Compressed Sensing by r-Algorithm and its Implementation in Java	N. M. Glazunov, O. V. Kuzik	10:30AM-10:35AM	*poster
ICCES1520150402097	Ontology of Elastic Bodies and Interval Optimization of their Shapes	N.M. Glazunov, T.V. Nagornyak	10:35AM-10:40AM	*poster

Theme	**Poster**		**Date: July-21**	**Room: E**
Session	**E02: Poster**		**Time: 10:30AM-12:15PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150610402	Relatively New Schemes for Problems Arising in Engineering and Physical Sciences	Syed Tauseef Mohyud-Din	10:30AM-10:35AM	*poster
ICCES1520140914002	Hyper-unpredictable new hyperchaotic system	Laouini Chiheb Eddine	10:35AM-10:40AM	*poster

ICCES1520150610403	Extended Decomposition Method for Nonlinear Fractional Partial Differential Equations	Jamshad Ahmad	10:40AM-10:45AM	*poster
ICCES1520150402094	A Power-law Boundary Slip Model of Gas Flows in Micro- Channels	Song Fuquan	10:45AM-10:50AM	*poster
ICCES1520150506289	An elastic-plastic multi-scale model and analysis method for thermo-mechanical coupled of random heterogeneous materials	Yun Chen, Zihao Yang	10:50AM-10:55AM	*poster
ICCES1520150610404	Tanh-Coth Method for Nonlinear Differential Equations	Amna Irshad	10:55AM-11:00AM	*poster
ICCES1520150501268	Damage quantification in plate structures using ultrasonic guided wave imaging	Chenguang Xu, Ying Luo, Baiqiang Xu, Guidong Xu	11:00AM-11:05AM	*poster
ICCES1520150425193	Synthesis of a gripper mechanism and demonstrating the voice controlled actuation of it.	Prem Auti, Swapnil Pimpalkar and Rashmi Uddanwadiker	11:05AM-11:10AM	*poster
ICCES1520150501269	Guided ultrasonic waves generated and received by PZT wafer in a Laminated Composite damaged Beam	Baiqiang Xu, Guidong Xu, Chenguang Xu, Ying Luo	11:10AM-11:15AM	*poster
ICCES1520150323059	An Investigation of Necrosis during Bone Drilling And Development of a Drilling Envoronment for Orthopedic Treatment	R.V. Dahibhate, A.B. Deoghare, P.M. Padole, P.V. Walke	11:15AM-11:20AM	*poster
ICCES1520150426199	Experimental researches on the progression of piping around suspended cut-off walls under different fine-particle contents	Jian-sheng Chen, Shuang Wang, Chao Zhang	11:20AM-11:25AM	*poster
ICCES1520150323058	On explaning the aliasing mechanism of high dimensional harmonic balance method	Honghua Dai, Dan Xie, Xiaokui Yue, Xuechuan Wang	11:25AM-11:30AM	*poster
ICCES1520150501271	Monitoring of stress concentration and crack growth by strain gradient sensor	Ying Luo, Xingjia Li, Baiqiang Xu, Jun Liu,Chenguang Xu , Ziping Wang	11:30AM-11:35AM	*poster
ICCES1520150330071	Analysis of influence of array plane error on performances of active phased array antennas	Congsi Wang	11:35AM-11:40AM	*poster
ICCES1520150415152	Free vibrations of stiffened carbon nano tube reinforced composite (CNTRC) plates	Nikhil Bavane and S M Shiyekar	11:40AM-11:45AM	*poster
ICCES1520150414146	Numerical solution for the fractional thermo-viscoelasticity equation by the MFS method	Wei Cai, Xing Wei, Wen Chen	11:45AM-11:50AM	*poster
ICCES1520150413139	Response of Polyurea Coated Composite Plates to Near Field Underwater Explosion Loading Conditions: Experiments and Simulations	James LeBlanc, Christopher Shillings, Erin Gauch, Frank Livolsi, Arun Shukla	11:50AM-11:55AM	*poster
ICCES1520150426204	In situ observations of crack propagation in an Al-Zn-Mg-Cu alloy	P.C.Bai, F.Liu, X.H.Hou, Y.M.Xing	11:55AM-12:00PM	*poster
ICCES1520150426202	A semi-discrete Kansa method for a class of time-space fractional diffusion equations	HongGuang Sun, Xiaoting Liu, Chengpeng Lu, Guofei Pang, Wen Chen	12:00PM-12:05PM	*poster
ICCES1520150509299	FEA for Distortion of Dental Brackets and Its Effect on Orthodontic Mechanics	Vivek Gupta , P. M. Padole, and R.V. Uddanwadiker	12:05PM-12:10PM	*poster
ICCES1520150610405	Nonlinear Radiative Heat transfer in Two-dimensional Wall Jet Flow	Zulfiqar Ali Zaidi, Umar Khan, Naveed Ahmed	12:10PM-12:15PM	*poster
ICCES1520150423182	Model of non-linear behavior of liquid flowing in tight formation	Renyi Cao, Xiaofeng Tian, Yang Wang, Na An	12:15PM-12:20PM	*poster

Theme	**Poster**		**Date: July-21**	**Room: E**
Session	**E03: Poster**		**Time: 1:30PM-3:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150510304	Analysis of Isolation Effectiveness of Shear Waves by a Row of Hollow Pipe Piles in Saturated Soils	Ping Xu	1:30PM-1:35PM	*poster
ICCES1520150407118	Improvement of RPIM in computational efficiency	Zilong Cao, Huancheng Tan, Yupu Guan, Wei Chen	1:35PM-1:55PM	
ICCES1520150612411	Research on Network Intrusion Detection Based on PCA PSO-BP	Yang Xu, Huanguo Zhang, Xiaoyao Xie	1:55PM-2:00PM	*poster
ICCES1520141023004	The Impact of Noun Ambiguity in Telugu Language Sentences using CSG Rules: A Modern Approach	J. Sreedhar, S.Viswanadha Raju and A.Vinaya Babu	2:00PM-2:05PM	*poster

ICCES1520150410134	Design and Development of Oximeter for Dental Application	Shubham Ramteke,Rashmi Uddanwadiker, Darshan Dakshindas	2:05PM-2:10PM	*poster
ICCES1520150415151	A Local Quantum-Atomistic-Continuum Model for Mechanical Behaviors at Micro-nano Scales	Tiansi Han, Junzhi Cui, Xingang Yu, Yantao Yang	2:10PM-2:15PM	*poster
ICCES1520150610409	Influence of Nonlinear Thermal Radiation on the viscous flow through a Deformable Asymmetric Porous Channel: A numerical Study	Naveed Ahmed, Umar Khan	2:15PM-2:20PM	*poster
ICCES1520150306025	A General Algorithm for Nearly Singular Integrals in Two Dimensional Anisotropic Boundary Element Method	Yan Gu, Zhuojia Fu	2:20PM-2:25PM	*poster
ICCES1520150310029	Failure simulation study on the rock masses of the dam foundation under earthquake response	Xu J.C	2:25PM-2:30PM	*poster
ICCES1520150410135	Numerical Simulation of CO2 Flooding Coalbed Methane Considered Fluid-solid Coupling Effect	Jianjun Liu, Guang Li, Hongyuan Li	2:30PM-2:35PM	*poster
ICCES1520150330073	Numerical Analysis of Vehicle Induced Impact Effect For Highway Cable Stayed Bridge	Zhi Sun, Yafeng Niu	2:35PM-2:40PM	*poster
ICCES1520141001003	Magnetorheological Rotational Flow	Abbas Hazbavi	2:40PM-2:45PM	*poster
ICCES1520150316037	The Application of the Combined Drilling Pattern of ”pilot +enlargement” in directional well trajectory control	Qimin LIANG Xinyun LIU Libao SHI Ye Tao Lingdong LI	2:45PM-2:50PM	*poster
ICCES1520150416161	Some applications of fractional differential equations in viscoelastic fluid flow, heat and mass transfer	Liancun Zheng, Shengting Chen, Jize Sui	2:50PM-2:55PM	*poster
ICCES1520150430260	Research of detecting surface defect quantitatively in thick-walled pipes based on electromagnetic ultrasonic surface wave	He Cunfu, DEng Peng	2:55PM-3:00PM	*poster
ICCES1520150318040	The Analysis of Lateral Earth Pressures Behind Diaphragm Wall within Rigid Braced System	Liu Chungao	3:00PM-3:05PM	*poster
ICCES1520150407119	The finite difference schemes for the Six Order phase field crystal equation	H. Y. Cao and Z. Z. Sun	3:05PM-3:10PM	*poster
ICCES1520150323052	The Analysis of the Choice of Input Factors in Neural Networks Used in the calculation of High Arch Dam’s Deformation	Chungao Liu Chongshi Gu	3:10PM-3:15PM	*poster
ICCES1520150420169	The effects of Intra-Ocular Pressure (IOP) and the external pressure on human eye investigated by Finite Element Analysis	Vishal V Shukla, Pramod M. Padole	3:15PM-3:20PM	*poster

Theme	**Poster**		**Date: July-21**	**Room: E**
Session	**E04: Poster**		**Time: 4:00PM-6:30PM**	
Paper	**Title**	**Author**	**Time**	
ICCES1520150429244	Insights into the effects of particle geometries on the interfacial volume fraction in anisotropic particle systems	Wenxiang Xu, Han Wang, Yanzhe Niu	4:00PM-4:05PM	*poster
ICCES1520150330074	Numerical And Analytical Analysis Of Rigid Train Induced Dynamic Instability For Railway Girder Bridge	Zhi Sun, Yansheng Feng	4:05PM-4:25PM	
ICCES1520150401089	Potential and limitations of thermoelectrics in energy sustainability	Tinggang Zhang	4:25PM-4:30PM	*poster
ICCES1520150403104	Finite element analysis of lamina cribrosa of the cat based on in vivo experiment	Xiuqing Qian, Kunya Zhang, Wei Gao, Shouxin Wang, Zhicheng Liu	4:30PM-4:55PM	*keynote
ICCES1520150513309	Pore-scale Study about Permeability of Porous Media Based on CT Image Technology	Zisen Wu	4:55PM-5:00PM	*poster
ICCES1520141103005	Determination of tension softening curves of quasi-brittle materials	Chen Hongniao, Li Yingping, Zhang Huagang	5:00PM-5:05PM	*poster
ICCES1520150403103	Dislocations in III-Nitride materials	Jun CHEN, Pierre RUTERANA and Huaping LEI	5:05PM-5:25PM	
ICCES1520141115006	Damage identification in a coupled double-beam system under moving forces	H.J.Xu, Z.R. Lu, J.K.Liu	5:25PM-5:30PM	*poster

ICCES1520150430245	A short-working-distance device for surface detection of underwater structures	Cong Liu, Yingjun Xu, Chengfei Wang, Xiaoyuan He	5:30PM-5:35PM	*poster
ICCES1520150501264	Optimizing the Bridging Particles in Shale Drilling Fluids by Particle Flow Code	Wenyi Chen, Mian Chen, Yan Jin, Yunhu Lu, Min Liu	5:35PM-5:40PM	*poster
ICCES1520150106010	A Backward Group Preserving Scheme for Solving Backward Sine-Gordon Equation of Dislocations in Metals	Chih-Wen Chang	5:40PM-5:45PM	*poster
ICCES1520150224020	Environmental Sensitive Cracking and strength prediction model of 110ksi casing steel for sour oil and gas environment	Hou duo, Shi taihe, Chen yuxiang	5:45PM-5:50PM	*poster
ICCES1520150413138	The Variation Law of Shape Factor for Fractured Carbonate Reservoirs	Shaoyuan Mo, Shunli He, Gang Lei, Guangfeng Liu, Shaohua Gai	5:50PM-5:55PM	*poster
ICCES1520150429227	A Novel Enhanced Oil Recovery Method by using Polymers of Variable Viscosity	Kaoping Song, Mingxing Bai, Erlong Yang	5:55PM-6:00PM	*poster
ICCES1520150427211	Prediction on the Formation of Natural Gas Hydrates inside Wellbore in Deep-sea Drilling Process	Ai Chi , Gao Changlong, Hao Ming ,Zhang Bowen	6:00PM-6:05PM	*poster
ICCES1520150610407	A numerical study on magneto-hydrodynamic and viscous dissipation effects on flow of a Casson fluid between contracting rotating disks	Naveed Ahmed, Umar Khan, Muhammad Zubair	6:05PM-6:10PM	*poster
ICCES1520150610408	Thermo-diffusion and Diffuso-thermo effects on MHD squeezing flow between parallel disks	Sheikh Irfanullah Khan, Umar Khan, Naveed Ahmed	6:10PM-6:15PM	*poster
ICCES1520150226023	The numerical simulation of the whole implosion process with multi-layer capsule in ICF	H. Yong, C.L Zhai, S. Jiang	6:15PM-6:20PM	*poster
ICCES1520150428219	Temperature Prediction Model in wellbore for Deepwater Drilling	S.H. Sun , T. Yi, X.L. Bi, L. Wang, G.Q. Yu	6:20PM-6:25PM	*poster
ICCES1520150507291	Research on Downhole Anti-subsiding Technology for Shallow Heavy Oil	Xueqi Cen,Xiaodong Wu ,Sheng-en Gao, Shu Wei, Lei Zheng	6:25PM-6:30PM	*poster
ICCES1520150430255	Study on fine particle migration model induced by seepage	Mei-li Zhan, Yuan Wei, Qing-fu Huang, Jin-chang Sheng	6:30PM-6:35PM	*poster
ICCES1520150508293	Numerical Simulation Study of Shale Gas Reservoir with Fracture Stress-Sensitivity using Multiscale Discrete Fracture Network Model	Mi Lidong, Jiang Hanqiao, Li Junjian, Pei Yanli, Ding Shuaiwei,Liu Chuanbing	6:35PM-6:40PM	*poster
ICCES1520150417165	Second-order asymptotic analysis method and computation for dynamic thermo-mechanical coupling problem of composite material in axisymmetric structure	Qiang Ma, Zhihui Li and Junzhi Cui	6:40PM-6:45PM	*poster
ICCES1520150508294	Experiments of Fracturing and Fracture Morphology Analysis of Shale Gas Reservoir	Zhao Lin, Wang Zhi Ming, Gao Hong, Bi ie Fu	6:45PM-6:50PM	*poster
ICCES1520150402099	Experimental investigation on natural convection over a flat plate: Implications of heat interaction with an external heat sink	Chhaya Warathe, Shivanshu Chalotra, and Vinayak Malhotra	6:50PM-6:55PM	*poster