



TSME - ICOME
1st International Conference on Mechanical Engineering

**October 20th - 22nd, 2010 Sunee Grand Hotel,
Ubon Ratchathani, Thailand**

Conference Program



**Institution of
MECHANICAL
ENGINEERS**

Conference Program

Day 1 : 20th October 2010

7.30– 9.00 AM	Registration (Convention Hall Sunee Grand Hotel / 5 th floor)		
9.00 – 9.15 AM	Opening Ceremony (Tabtim Siam II Room / 5 th floor)		
9.15 – 9.45 AM	Collaboration's Address TSME, JSME, ASME and IMechE (Tabtim Siam II Room / 5 th floor)		
9.45 – 10.00 AM	Break		
10.00 – 10.45 AM	Primary Aspects of Transport through Biological Tissues by Prof. Dr. Kambiz Vafai (University of California, Riverside) (Tabtim Siam II Room / 5 th floor)		
10.45 – 11.30 AM	Importance of accurate rigid-body property identification by Prof. Dr. Masaaki Okuma (Tokyo Institute of Technology) (Tabtim Siam II Room / 5 th floor)		
11.30 – 12.15 AM	The Guideline for Successful Research under the Environment of Thai University by Prof. Dr. Phadungsak Rattanadecho (Thammasat University, Thailand) (Tabtim Siam II Room / 5 th floor)		
12.15 – 1.00 PM	Lunch		
Session 1 1.00-2.40 PM	Phathummas Room 5 th floor (Aerospace and Marine Engineering) Chair: Prof. Dr. Shankar Mahalingam	Phathumwan Room 5 th floor (Thermal System and Fluid Mechanics) Chair: Prof. Dr. Somchai Wongwises	CK B1 Room 4 th floor (Energy Technology and Management) Chair: Prof. Dr. Hiroshi Takami
1.00 – 1.20 PM	AME001	TSF002	ETM001
1.20 – 1.40 PM	AME002	TSF003	ETM002
1.40 – 2.00 PM	AME003	TSF004	ETM003
2.00 – 2.20 PM	AME004	TSF005	ETM004
2.20 – 2.40 PM	AME005	TSF011	ETM005
2.40 – 2.55 PM	Break		

Session 2 2.55 – 5.15 PM	Phatummas Room 5 th floor (Biomechanics) Chair: Assoc. Prof. Dr. Perapong Tekasakul	Phatumwan Room 5 th floor (Dynamic System, Robotics and Control & Applied Mechanics, Materials and Manufacturing) Chair: Assoc. Prof. Dr. Sujin Bureerat	CK B1 Room 4 th floor (Energy Technology and Management) Chair: Asst.Prof.Dr.Nopporn Leeprechanon
2.55 – 3.15 PM	BME001	DRC001	ETM006
3.15 – 3.35 PM	BME002	DRC002	ETM007
3.35 – 3.55 PM	BME003	AMM001	ETM008
3.55 – 4.15 PM	BME004	AMM002	ETM009
4.15 – 4.35 PM	BME005	AMM003	ETM010
4.35 – 4.55 PM	BME006	AMM004	ETM011
4.55 – 5.15 PM	BME007	AMM005	ETM012

Day 2 : 21st October 2010

9.00-9.30 AM	An examination of crown-like fire initiation and fire spread in shrubs by Prof. Dr. Shankar Mahalingam (The University of Alabama in Huntsville) (Phatummas Room / 5 th floor)		
Session 3 9.30 – 10.30 AM	Phatummas Room 5 th floor (Alternative Energy and Combustion) Chair: Prof. Dr. Sumrerng Jugjai	Phatumwan Room 5 th floor (Applied Mechanics, Materials and Manufacturing) Chair: Asst. Prof. Dr. Anak Khantachawana	CK B1 Room 4 th floor (Computation and Simulation Technique) Chair: Asst. Prof. Dr. Wanchai Asvapoositkul
9.30 - 9.50 AM	AEC001	AMM006	CST001
9.50 - 10.10 AM	AEC002	AMM007	CST002
10.10 - 10.30 AM	AEC003	AMM008	CST003
10.30 - 10.45 AM	Break		

Session 4 10.45- 12.05 AM	Phatummas Room 5th floor (Alternative Energy and Combustion) Chair: Asst Prof. Dr.Watit Pakdee	Phatumwan Room 5th floor (Applied Mechanics, Materials and Manufacturing) Chair: Assoc. Prof. Dr. Mongkol Mongkolwongroj	CK B1 Room 4th floor (Thermal System and Fluid Mechanics Chair: Asst. Prof. Dr. Chainarong Chaktranond
10.45 - 11.05 AM	AEC004	AMM009	TSF006
11.05 - 11.25 AM	AEC005	AMM010	TSF007
11.25 - 11.45 AM	AEC006	AMM011	TSF008
11.45 - 12.05 AM	AEC007	AMM012	TSF009
12.05 - 1.00 PM	Lunch		
1.00 - 1.30 PM	Electric Energy Conversion Technique for Eco- Equipments via Embedded Technology by Prof. Dr. Hiroshi Takami (Phatummas Room / 5th floor)		
Session 5 1.30 – 3.10 PM	Phatummas Room 5th floor (Alternative Energy and Combustion) Chair: Asst. Prof. Dr. Chinda Charoenphonphanich	Phatumwan Room 5th floor (Applied Mechanics, Materials and Manufacturing) Chair: Assoc. Prof. Dr. Wiroj Limtrakarn	CK B1 Room 4th floor (Computation and Simulation Technique) Chair: Dr. Wirachai Roynarin
1.30 - 1.50 PM	AEC008	AMM013	CST004
1.50 – 2.10 PM	AEC009	AMM014	CST005
2.10 – 2.30 PM	AEC010	AMM015	CST006
2.30 - 2.50 PM	AEC011	AMM016	CST007
2.50 - 3.10 PM	AEC012	AMM017	CST008
3.10 - 3.25 PM	Break		
Session 6 3.25 – 5.45 PM	Phatummas Room 5th floor (Alternative Energy and Combustion) Chair: Assoc. Prof. Dr. Kanit Wattanavichien	Phatumwan Room 5th floor (Applied Mechanics, Materials and Manufacturing) Chair: Dr. Sappinandana Akamphon	CKB1 Room 4th floor (Thermal System and Fluid Mechanics Chair: Assoc. Prof. Dr. Asi Bunyajitradulya
3.25 - 3.45 PM	AEC013	AMM018	TSF001
3.45 - 4.05 PM	AEC014	AMM019	TSF010
4.05 - 4.25 PM	AEC015	AMM020	TSF012
4.25 - 4.45 PM	AEC016	AMM021	TSF013
4.45 - 5.05 PM	AEC017	AMM022	TSF014
5.05 - 5.25 PM	AEC018	AMM023	TSF015
5.25 - 5.45 PM		AMM024	TSF016

1. Alternative Energy and Combustion : AEC

- AEC001 Design and Development of a Compact Screw-Press Biomass Briquetting Machine for Productivity Improvement and Cost Reduction
- AEC002 Particulate Matter Trapping and Oxidation on a Diesel Particulate Filter
- AEC003 Investigation on a Free-Piston Stirling Engine and Pneumatic Output
- AEC004 Performance and Emission of a Small Engine Operated with LPG and E20 Fuels
- AEC005 An Experimental Study on Aldehyde Emissions of a Hydrous Ethanol Fuelled Small SI Engine Generator Set
- AEC006 A Self-Aspirating Porous Burner (SPB) with Matrix-Stabilized Flame for Small and Medium Scale Enterprises (SMEs)
- AEC007 400-hour Durability Tests of Direct-Injection Engine Using Neat Palm Biodiesel
- AEC008 Development of Density Test Kit Prototype for Biodiesel Quality Control
- AEC009 Development of Biogas Compression System for Using in Household
- AEC010 Effects of Injection Pressure on Combustion Behavior and Emission in Commonrail Single-Cylinder Diesel Engine Using Jatropa Methyl Ester (JME)
- AEC011 Impact of Water Contents Blended with Ethanol on SI Engine Performance and Emissions
- AEC012 The Effect of Primary Air Preheat on the Primary Aeration of a Self-aspirating Burner
- AEC013 Combustion Characteristics of Direct Injection Stratified Charge of Gasohol Fuels
- AEC014 Evaluation of Parameters for Biofuel Production in CSTR
- AEC015 Constructal Pattern of Solar Chimney Power Plants on Land
- AEC016 Enhancement of Thermal Conductivity with Al₂O₃ for Nanofluids
- AEC017 Experimental Studies of A Steam Jet Refrigeration Cycle: Effect of The Primary Nozzle Geometries to System Performance.
- AEC018 Starting Characteristics of an Engine using Neat Ethanol

2. Aerospace and Marine Engineering : AME

- AME001 Survey of Micro Air Vehicles in an International Even & Utilization in Thailand
- AME002 Adaptive Wing by Using a W-Spar Concept
- AME003 Determination of Wind Turbine Blade Flapwise Bending Dynamics
- AME004 Characteristics of High-Speed Liquid Jets in Water

- AME005 An Investigation of Failure Scenario of the Metallic Insert in Sandwich Structures

3. Applied Mechanics, Materials and Manufacturing : AMM

- AMM001 Microstructures and Mechanical Properties of Portland Cement Pastes at Early Age Subjected to Microwave Accelerated-Curing with a Multi-Mode Cavity
- AMM002 Effect of Filler on Heat Build-up of Rubber
- AMM003 Fabrication and Development of High Temperature Shape Memory Alloys
- AMM004 Development of High Quality Aluminum Parts using Semi-Solid Die Casting
- AMM005 Near-Field Acoustic Characteristics of Supersonic Jets from Chevron Nozzles
- AMM006 Cost Effectiveness Study of a Novel Hot-dip Galvanizing Process
- AMM007 New Design Concepts for Low Friction Plain Journal Bearings
- AMM008 Fracture Toughness of Closed-Cell Polymeric Foam under Mixed-Mode I/II Loading
- AMM009 Analysis of Wear Behaviors in Hard Disk Drive Manufacturing Processes for Selection Appropriate Coating Films
- AMM010 A Determination of the Optimized Conditions for Rubber Injection Moulding
- AMM011 Effect of Ni-Content on Mechanical and Transformation Behavior of NiTi Shape Memory Alloys for Orthodontics Applications
- AMM012 Improvement of Glass Disk Durability and Sensitivity in Flying Height Measurement
- AMM013 Study of Screw Tightening Sequence on the Looseness of the Top Cover in the Hard Disk Drive Assembly
- AMM014 Topological Design of a Hard Disk Drive suspension Using Multi-objective Population Based Incremental Learning
- AMM015 Passive Vibration Control of an Automotive Component Using Evolutionary Optimization
- AMM016 A Parametric Study of Drop Test for Hard Disk Drives Packaging using Finite Element Analysis
- AMM017 Manufacturing of a Prototype Blade for Small Wind Turbines
- AMM018 Simulation of Impact Regimes
- AMM019 Effect of Cold Work on Pseudoelastic Property of Ti-Nb Alloys for Utilizing as Artificial Bone
- AMM020 Computer Simulation of Mechanical Response of Suspension Processed by Bending and Heat Treatment
- AMM021 Transient Thermal Elastohydrodynamic of Rough Surfaces under Line Contact with Non-Newtonian Solid-Liquid Lubricants
- AMM022 Improving the Quality of Groove in Electro Chemical Machining (ECM) Process by Taguchi Method

- AMM023 Creep-fatigue Crack Growth Behavior of Sn-37Pb and Sn-3.0Ag-0.5Cu Solders at Room and Elevated Temperatures
- AMM024 Failure Analysis of a Helical Gear

4. Biomechanics : BME

- BME001 Simulation of an Occlusal Interference of an Implant Crown
- BME002 Biomechanical Study of the Thai Humerus with Humeral Shaft Fracture at Ninety Degrees Abduction
- BME003 The Effects of Dielectric Shield on Specific Absorption Rate and Heat Transfer in the Human Body Exposed to Microwave Energy
- BME004 Influence of Food Viscosity on Velocity of Bolus Transport in the Pharyngeal Phase
- BME005 Characterization on Properties of Modification Gelatin Films with Carboxymethylcellulose
- BME006 Biomechanics Study of Knee Ligament
- BME007 Mechanical Performance Evaluation of Dynamic Hip Screw (DHS) for Trochanteric Fracture

5. Computation and Simulation Technique : CST

- CST001 Sloshing Surface Monitoring Using Image Processing
- CST002 Design Optimization of Plate-Fin Heat Sinks Using Hybridization of MPSO and RSM
- CST003 Dynamic Characteristics of Impact Driven Jet in a Step Nozzle
- CST004 Airflow Simulation of Particle Suction in Hard Disk Drives Manufacturing Process
- CST005 Numerical Analysis of Laminar Heat Transfer Augmentation in a Square Channel fitted with V-Baffles
- CST006 A Mesoscale Modeling Technique for Studying the Dynamic Oscillation of Min Proteins: Pattern Formation Analysis with the Lattice Boltzmann Method
- CST007 Lattice Boltzmann method for simulating Min protein dynamics incorporating the role of nucleoids
- CST008 Design of a Steam Ejector by Co - Operating the ESDU Design Method and CFD Simulation

6. Dynamic System, Robotics and Control : DRC

- DRC001 An Unmanned Helicopter System
- DRC002 Implementation of Resolved Motion Rate Controller with 5-Axis Robot Manipulator Arm

7. Energy Technology and Management : ETM

- ETM001 Simulations of ITB H-Mode Tokamak Plasmas with Predictive Toroidal Velocity Model
- ETM002 Simulation of ITER Plasma During Pellet Injection
- ETM003 Development of Dynamic Boundary Density Model in H-Mode Scenarios
- ETM004 Preliminary Results of Core-Edge Simulations of H-Mode Tokamak Plasmas Using BALDUR and TASK Codes
- ETM005 Construction of Energy Demand Model in Thai Transportation Sector: A Case Study for Ethanol as Diesel Substitute
- ETM006 Transesterification of Lard to Biodiesel Using Two-step Microwave
- ETM007 Mathematical Modeling of an Evaporative Air-conditioning System and Cooling Loads in a Poultry House for Sliding Mode Control Analysis
- ETM008 Speed-Time Data Logger Development of a Motorcycle for Driving Behavior Analysis
- ETM009 Designing of 100 KW Micro Wind Farm for Low Wind Speed Zone
- ETM010 Electric Energy Conversion Technique for Eco-Equipments via Embedded Technology
- ETM011 Optimal Placement of Wind Farm on the Power System Topology
- ETM012 Transmission System Expansion Planning by Ant Colony Optimization: A case of China Southwest System

8. Thermal System and Fluid Mechanics : TSF

- TSF001 Mathematical Model in the Form of Vorticity-Stream Function for Combustion in Porous Media
- TSF002 Driving Cycle Generation for Emissions and Fuel Consumption Assessment of the Motorcycles in Khon Kaen City
- TSF003 Effect of Effective Velocity Ratio on the Near-Field Mixing Structures of a Jet in Crossflow
- TSF004 Heat Transfer and Friction Behavior in a Channel Fitted with Triangular and Rectangular V-shaped Ribs

- TSF005 Thermal Behavior in a Square Channel with 45° Cross Baffle Insert
- TSF006 Thermal Behavior in a Solar Air Heater Channel with Ribs and Rectangular Winglets
- TSF007 A Thermal Performance Study of a Glass Window Installed with a Curved Venetian Blind
- TSF008 Development of Suitable Air Condition Control System for Closed-system Henhouse
- TSF009 The γ -kL Model for Prediction of Transitional Flow Over a Flat Plate with Zero Pressure Gradient
- TSF010 Coherent Structures of Transitional Boundary Layers in a Linear Compressor Cascade
- TSF011 The Experimental Investigation of Heat Transport and Water Infiltration in Granular Packed Bed Due to Supplied Hot Water from the Top (Influence of Supplied hot water flux and Particle sizes)
- TSF012 Experimental Analysis of the Freezing Process in Unsaturated Porous Media Cooled from Above (Influence of Freezing Temperature and Initial Water Saturation)
- TSF013 Influence of Electrode Wire Structure on Corona Wind in a 2-D Rectangular Duct Flow (Numerical Analysis)
- TSF014 Effect of Temperature and Pressure on Characteristics of High Speed Diesel Jets
- TSF015 Optimizing TPV System for Maximize Surface to Surface Radiation and Minimize Cells Temperature
- TSF016 Influence of Nozzle's Exit Mach Number on the Steam ejector's Performance by Using Computational Fluid Dynamics

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