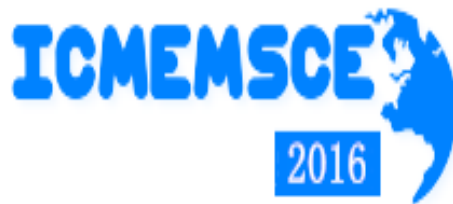


**2016 BOSI EDU SANYA CONFERENCE**  
**SCHEDULE**

**2016 the 4<sup>th</sup> International Conference on Mechanical Engineering,  
Materials Science and Civil Engineering (ICMEMSCE2016)**



**Sanya, China**

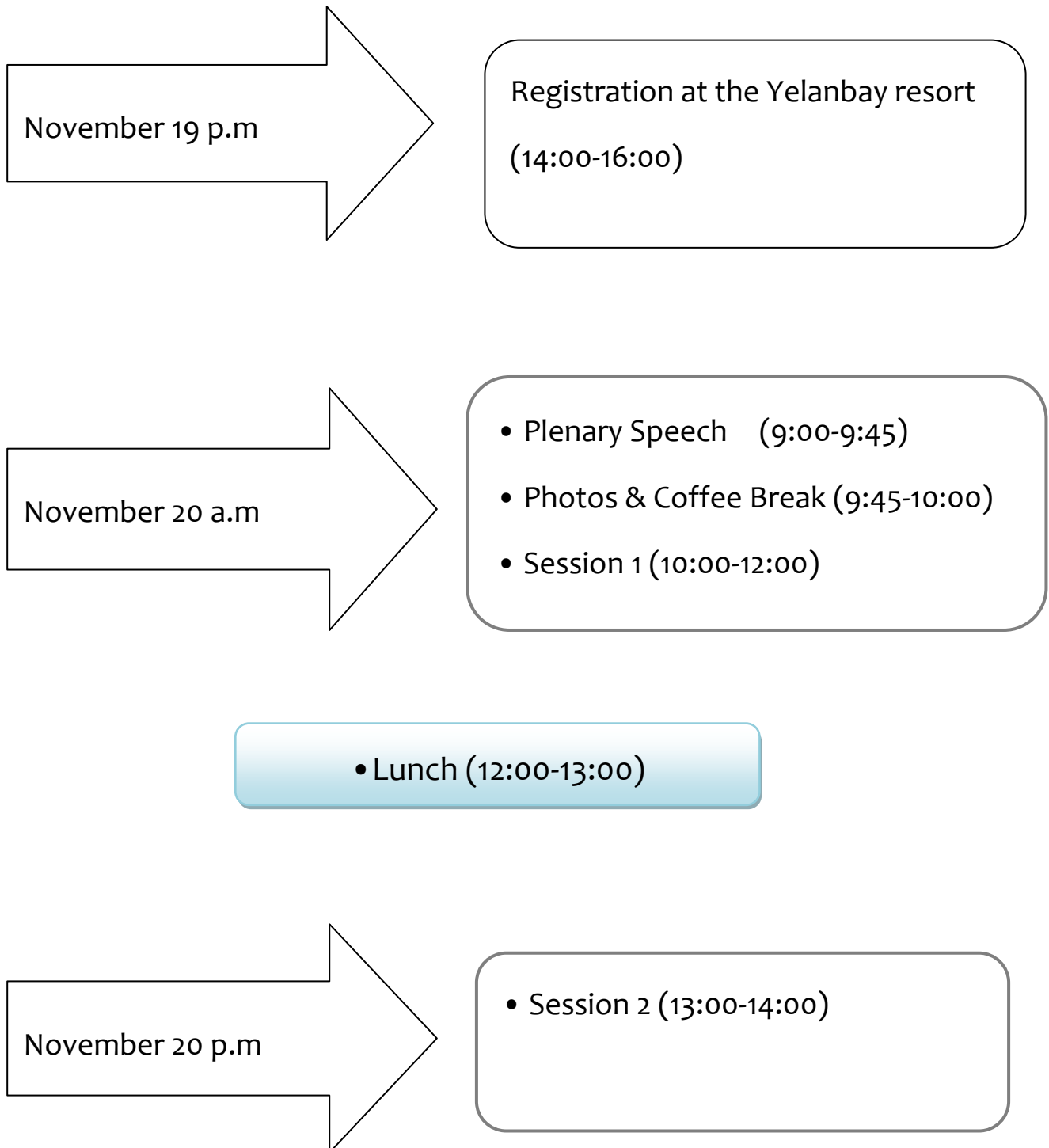
**November 19-20, 2016**

<http://www.icmemsce.org/>

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## Simple Version of the Schedule



## **Committees**

### **Conference Chairs**

Jenny Ji, BOSI Education & Consultancy, China

### **Technical Program Committee Chairs**

Hyun-Do YUN, Chungnam National University, Korea

THANH-LAM NGUYEN, Lac Hong University, Vietnam

Mou Chen, Nanjing University of Aeronautics and Astronautics, China

Keishi Matsuda, Matsuyama University, Japan

### **International Program Committee Chairs (America)**

Jeremy (Zheng) Li, School of Engineering, University of Bridgeport,

America (**Guest editor for 3rd ICMEMSCE2014**)

### **International Program Committee Chairs (Japan)**

Ikuo IHARA, Nagaoka University of Technology, Japan (**Guest editor for 2nd**

**ICMEMSCE2013**)

### **International Program Committee Chairs (Malaysia)**

Norhaliza Abdul Wahab, Universiti Teknologi Malaysia, Malaysia

Abdul L Mohd Tobi, Universiti Tun Hussein Onn Malaysia, Malaysia

Aishah Najiah Dahnel, International Islamic University Malaysia, Malaysia

Ahmad Baharuddin Abdullah, Universiti Sains Malaysia, Malaysia

Toh Tien Choon, Universiti Tunku Abdul Rahman, Malaysia

Goh KaiChen, Universiti Tun Hussein Onn Malaysia, Malaysia

Yusri Yusof,Universiti Tun Hussein Onn Malaysia, Malaysia

Mohammad Jawaid,Universiti Putra Malaysia, Malaysia

### **International Program Committee Chairs (Srilanka)**

K.M. Muditha Dassanayake,University of Peradeniya, Srilanka

### **International Program Committee Chairs (Slovak Republic)**

Michal Kelemen,Technical University of Kosice,Slovak Republic

### **International Program Committee Chairs (South Korea)**

Sangyoon Lee, Konkuk University, South Korea

### **International Program Committee Chairs (Hungarian)**

László Horváth, Óbuda University, Hungarian

### **International Program Committee Chairs (Thailand)**

Achanai Buasri, Silpakorn University, Thailand

### **International Program Committee Chairs (Taiwan)**

Ming-Hung Shu,National Kaosiung University of Applied Sciences,Taiwan

### **International Program Committee Chairs (Iran )**

Seyed Hashem Eslami,University of Tehran,Iran

### **International Program Committee Chairs (Brazil)**

Walter Jesus Paucar Casas,Universidade Federal do Rio Grande do Sul,Brazil

### **International Program Committee Chairs (India)**

Sandip Patil, Bharat Forge Ltd, Pune, India

### **International Program Committee Chairs (Australia)**

Jingwei Zhao, University of Wollongong, Australia

### **International Program Committee Chairs (Turkey)**

Osman Adiguzel, Firat University, Turkey

### **International Program Committee Chairs (Poland)**

Magorzata asiulewicz – Kaczmarek, Poznan University of Technology

## Venue

**Conference venue:** Yelanbay resort

**Add:** Sanya Bay Resort District, Sanya, Hainan, China



Map to Yelanbay resort for Reference ([Download](#))



### 2016 BOSI EDU SANYA CONFERENCE

ICMEMSCE2016 will be held on Yelanbay resort

CONFERENCE SCHEDULE as below.

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#### **November 19, 2016 (Saturday)**

**Lobby of Yelanbay resort.**

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14:00--16:00	Registration
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#### **November 20, 2016 (Sunday)**

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09:00--9:45	Plenary Speech Professor Katsuyuki Kida
9:45--10:00	Photos & Coffee Break
10:00--12:00	Session 1
12:00--13:00	Lunch
13:00--14:00	Session 2

### Note:

1. All the participants are strongly advised to arrive before **8:50, November 20, 2016**.
2. Certificate of Participation can be collected at the registration counter.
3. Please copy PPT files of your presentation to the secretary when registration.
4. The organizer doesn't provide accommodation, and we suggest you make an early reservation.
5. If you want to deliver oral presentation but your paper is not in the session list, please contact us by Email: [cfp@icmemsce.org](mailto:cfp@icmemsce.org) (for ICMEMSCE2016)

## Instruction about Oral Presentation

### Devices Provided by the Conference Organizer:

Laptops

Projectors & Screen

Laser Sticks

### Materials Provided by the Presenters:

PowerPoint or PDF files

Duration of each Presentation:

Regular Oral Session: about 8-10 Minutes of Presentation and 5 Minutes of Q&A



## Plenary Speech

Plenary Speech 09:00-9:45



**Katsuyuki Kida (Ph.D, Dr. Eng.)**

**University of Toyama, Professor, Solid Mechanics Laboratory**

**Title: "Change in magnetic field due to elastic-plastic deformation of structural steels"**

Prof. Katsuyuki Kida was born in 1968 in Osaka, where from 1988 he studied mechanical engineering at Osaka University. Apart from course work, he studied rolling contact fatigue (RCF) occurring in TiC and TiN coated steels using both X-ray diffraction and scanning acoustic microscopy. After graduation he pursued his academic career and completed a Ph.D. course in engineering mechanics in 2000, investigating RCF problems of all-Si<sub>3</sub>N<sub>4</sub> bearings. By observing cracking and flaking failure under RCF, he succeeded in explaining the material's features from the viewpoint of fracture mechanics. From 2000 he focused his work on investigating the contact problems of elements used in automobiles such as high-pressure pump of new type diesel engines.

He has also continued the fundamental research on contact problems, which received 'The Best Paper Prize (FFEMS PRIZE)' from 'Fatigue & Fracture of Engineering Materials & Structures' journal in 2005 and 'AML-Scientist Award' from 'Advanced Materials Letters' journal in 2011. The awarded papers reported establishing a crack growth mechanism under contact pressure, a problem that had not been solved for over 70 years since S. Way's theory. Prof. Kida has been honored with prestigious 'IAAM Medal' of year 2013 for notable and outstanding research in the field of materials science & technology at 'Advanced Materials World Congress (AMWC 2013, cesme, Turkey, 16-19 September, 2013)' from International Association of Advanced Materials. His research interests now include the development of three dimensional scanning Hall-probe microscope technologies, fatigue phenomena in polymer bearing, crack growth

mechanism under contact stresses and refinement of high-carbon steels.

He holds and has held a number of prestigious leadership roles In academy-industry corroboration programs : refinement of steels, new joint system in humanoid robots and fatigue of polymer bearing in "Strategic Fundamental Technologies Strengthening Assistance Programs" (Ministry of Economics, Trade and Industry, Japan, 2009-2013); scanning Hall-probe microscopy in "Fundamental Studies on Technologies for Steel Materials with Enhanced Strength and Functions" (Consortium of the JRCM, Japan, 2008-2012); and ceramic bearing elements in the project supported by "Japanese Energy and Industrial Technology Development Organization" (NEDO, Japan, 2007-2011)."



09:45-10:00

Photo & Coffee Break

## Session List

### Session1

**November 20, 2016 (10:00-12:00)**

**1. Paper ID: 9**

**Title:** Investigation in the influence of Surface Treatment on Mechanical and Electrochemical Corrosion Properties of Ti-6Al-4V Allo

**Authors:** Zherui.HuangM, Yulin.Li, Qingdong.Zhong, Chen.Xiao, Hui.Li, Jinhu.Sun

**Abstract:** Potential difference between two phases in the Ti-6Al-4V alloy results in the galvanic cell reaction and corrosion. In order to improve the properties of Ti-6Al-4V, it was treated under different temperature with the atmosphere of 5vol. % oxygen and 95 vol. % nitrogen. The results showed that the titanium alloy surface is formed a layer of oxide and nitride compound layer. Sample treated at the temperature of 800 °C had the most outstanding corrosion resistance and mechanical property.

**2. Paper ID: 10**

**Title:** Effect of the Bluing solution on corrosion resistance of the oxide film prepared in Steel

**Authors:** Hui Li, Jinhu Sun, Qingdong Zhong, Zherui Huang, Yulin Li

**Abstract:** The process of Quench-bluing treatment on low-carbon steel were introduced. The continuity and corrosion resistance of the blue oxide film that is treated by different types of bluing solution and bluing solution with different concentrations of NaOH were evaluated by drip experiment and electrochemical test .The results show that Quench-bluing process can make the corrosion resistance better when use the solution of 500g/L NaOH and 150g/LNaNO<sub>2</sub> as Quench liquid and 15% NaOH in the solution can form the blue oxide film with the best corrosion resistance.

**3- Paper ID: 11**

**Title:** Electrodeposition and Corrosion Resistance of Cu/Zn/Cu Multilayer Coatings

**Authors:** Jinhu Sun, Hui Li, Qingdong Zhong, Chen Xiao, Zherui Huang, Yulin Li

**Abstract:** Cu/Zn/Cu multilayer coatings were prepared on mild steel substrates by dual bath technique in order to improve the corrosion resistance of mild steel in seawater. The microstructures of the coated substrates and its resistance to corrosion in simulated seawater were evaluated by scanning electron microscopy (SEM), the brine immersion test and electrochemical impedance spectroscopy (EIS). Salt water immersion test

results show that the Cu/Zn/Cu multilayer coatings exhibited the highest corrosion resistance. The red rust spot appeared on the coating surface for the first time when the time of the coating soaked in salt water reached 2520h. The trend of the impedance variation reflected by the electrochemical impedance spectroscopy was the same as the change tendency of corrosion resistance was analyzed by the salt water immersion test. The results of SEM showed that the layer of copper were deposited by round cell structure, the middle layer of zinc coating was flat and compact.

#### 4- Paper ID: 12

**Title:** Morphology, Structure and Corrosion resistance of nano-enamel coating changed on Ti-6Al-4V alloy

**Authors:** Yulin.Li, Zherui.Huang, Qingdong Zhong, Chen Xiao, Hui.Li, Jinhu Sun

**Abstract:** Using a sol-gel method and impregnation technology to produce nano-enamel coating on polished Ti-6Al-4V alloy. The morphology, structure and phase composition of nano-enamel coatings modified on mild steel were identified with X-ray diffraction (XRD), scanning electro microscopy (SEM) and tested by some electrochemical methods, such as open circuit potential and potentiodynamic polarization testing[1]. All of these method can select the samples which perform the best corrosion resistance.

#### 5-Paper ID: 13

**Title:** Study on the interfacial binding energy of plasma sprayed FeSi Nano-composite coating

**Authors:** C. Xiao, Z.R. Huang, Q.D. Zhong, Y.L. Li, J.H. Sun, H. Li

**Abstract:** Plasma sprayed FeSi Nano-composite coating is used more and more widely, yet the cohesive force in Nano-composite coating on mild steel is still a problem to solve. This paper aimed to use MM simulation to estimate the cohesive strength. To simulate the interfacial binding energy in plasma sprayed FeSi Nano-composite coating on mild steel, different kinds of FeSi-Fe molecular models were built. The simulation results indicated that the mild steel supporting plasma sprayed FeSi Nano-composite coating showed a higher cohesive strength with moderate thickness and thermal treated of FeSi. In the system of FeSi-Fe, the separation will take place between FeSi and Fe layer, the best thickness of plasma sprayed FeSi Nano-composite coating is about 6 $\mu$ m, and thermal treated under hydrogen atmosphere is about 1400K. The results of MM simulation provide some theoretical basis for preparation of plasma sprayed FeSi Nano-composite coating on mild steel with advanced cohesive strength.

**6-Paper ID: 15**

**Title:** Fatigue of low carbon alloy steel (JIS S45C) and a new method of fracture surface analysis

**Authors:** Katsuyuki KIDA, Masayuki ISHIDA , Koshiro MIZOBE, Isamu YOSHIDA 1, d , Ayumu TAMURA , Kazuaki Nakane

**Abstract:** In this study, we observed cracks and fatigue surface of low carbon alloy steel (JIS, S45C) in order to investigate the material structure and fatigue fracture surface. After fatigue crack growth tests of CT specimens, three-dimensional surface roughness of the fracture surface was studied using a laser confocal microscope (LCM). An image analysis method of Homology theory was applied to the LCM's data. The Betti numbers,  $b_1$  were calculated at four points on the fracture surfaces in order to study the effect of asperity heights on the  $b_1$  values. Based on these analyses, we found the relation between the structure and fatigue cracks from the viewpoint of Homology.

**7-Paper ID:30**

**Title:** Correlation of Steel Yield Stress and Ultimate Strength – Monte Carlo Simulation via Non-Gaussian Random Variables

**Authors:** KONEČNÝ Petr

**Abstract:** This paper describes a Monte Carlo simulation of the correlated steel characteristics of yield stress and ultimate strength of steel S235 grade from Northern Moravia region in the Czech Republic. Their joint distribution is described by a correlation index and frequency histograms. The paper step-by-step describes simulation process of the transformation of a correlated Gaussian joint distribution to a general joint distribution, because the yield stress as well as ultimate steel strength random parameters do not follow a Gaussian distribution. Their marginal distribution can be easily described by a suitable parametric distribution or frequency histogram suitable for use with the Simulation-based Reliability Assessment method (SBRA). Describing joint distributions of non-Gaussian processes is overcome by application of fractile correlation.

**8-Paper ID: 31**

**Title:** Experimental Testing of Shear Resistance on SFRC Slab Structures

**Authors:** CAJKA Radim, SMIRAKOVA Martina, VASKOVA Jana

**Abstract:** This paper deals with foundation slabs on the subsoil which are not reinforced with classically reinforcement but they are reinforced with steel fibers. It will be described several experimental test of FRC foundation slab which were reinforced with different amount of fibers. All tested slabs had dimension by 2.0 x 2.0 m and thickness 0.15m. On those slab a lot of physical quantities were measured and this paper focus especially on shear resistance.

**9-Paper ID: 32**

**Title:** Crack control in reinforced concrete liquid retaining structures

**Authors:** Jaroslav Navrátil, Radim Cajka

**Abstract:** The paper deals with the calculation and assessment of the crack width and crack resistance of reinforced concrete tanks for liquids and containers according to Eurocode. Detailed analysis of the provisions of EN 1992-3 related to the calculation of cracks is made. The interpretation of code provisions used in IDEA StatiCa software is explained. Comparative calculations are executed for standard reinforced concrete and fiber concrete cross-sections.

12:00-13:00

Lunch

## Session2

November 20, 2016 (13:00-14:00)

**1-Paper ID: 34**

**Title:** Elastic post-buckling behavior of plates with one central intermediate stiffener – the possibility of using the two-strip model

**Authors:** Miroslav Rosmanit

**Abstract:** This paper presents a two-strip model which can be used to derive simple, parametric expressions describing the distortional post buckling load-deformation behaviour of uniformly compressed simply supported square plates with one central intermediate stiffener and initial imperfections in the shape of the distortional buckling mode, provided the ratio  $E^*/E$  of the post-buckling to pre-buckling in-plane stiffness of the perfectly flat plate with stiffener is known. The paper is limited to ideal stiffeners whose centroid corresponds to the mid-surface of the plate.

**2-Paper ID: 44**

**Title:** Researches of Mechanical Properties of Welded Joint Based on the Method of Micro Sample

**Authors:** Takahiro MATSUEDA, Masayuki ISHIDA, Koshiro MIZOBE

**Abstract:** Aspect ratio of crack is one of key factors of fatigue strength prediction in engineering design and civil structures using fracture mechanics. Their empirical shapes are changed by stress concentration. However, it was not clear how stress concentration affects empirical results including crack shape and size. In this study, in order to investigate the relationship between stress concentration and crack geometry, the aspect ratio of cracks at notch root was observed and discussed. We succeeded to capture two important relationships which are between stress concentration and crack shape, and between crack initiation point at notch root and crack shape, respectively.

**3-Paper ID:** MS639

**Title:** Researches of Mechanical Properties of Welded Joint Based on the Method of Micro Sample

**Authors:** DU Jia-zheng, ZHAO Zhen-yang

**Abstract:** Welding is one of the most important ways to connect metal materials. The mechanical properties of the welded joint are not uniform, which affects the overall strength of the joint. Through the traditional experimental method, it is difficult to test the mechanical properties of materials in different regions of welded joint. With 2219 aluminum alloy friction stir welding (FSW) joint as the research object, two kinds of micro sample methods, nanoindentation test and micro specimen tensile test, were respectively adopted for testing. Through these experimental studies, the mechanical properties of materials were obtained in different regions of welded joint: such as the elastic modulus, yield limit, ultimate strength and so on. The changes of the mechanical properties of the welded joint were analyzed from the weld center to the base metal. Through the data comparison, the results of the two kinds of micro test methods are basically consistent with each other. The elastic modulus in the center of the weld is relatively large, and decreases gradually with the transition to the base material. The yield limit and the ultimate strength in the center of the weld are relatively small, and increase gradually with the transition to the base material. The elongation is relatively high in the heat affected zone and relatively low in the weld zone and the base metal zone. These studies also provided the data basis for the research on the strength of welded joint

Note: If you would like to deliver oral presentation but your paper is not in the session list, please contact us by Email: [cfp@icmemsce.org](mailto:cfp@icmemsce.org) (for ICMEMSCE2016). Thanks again for all your great attention and kind support to ICMEMSCE2016.

**Thank you for all of your contributions!**