The Third International Conference on Mechanical, Electric and Industrial Engineering

第三届机械、电子和工业工程国际学术会议

MEIE2020

Conference Program

June 18-19, 2020 China | Virtual

http://www.icmeie.com/

The Third International Conference on Mechanical, Electric and Industrial Engineering (MEIE2020)

The Third International Conference on Mechanical, Electric and Industrial Engineering is a leading annual conference of mechanical engineering, electric engineering and industrial engineering. MEIE2020 aims to provide a platform for worldwide scholars, experts and researchers, to exchange their ideas and experiences in the fields of mechanical engineering, electric engineering or industrial engineering and promote global collaboration.

On behalf of MEIE organizing committee, we would like to thank you for attending this conference to share your experience and research results, hope you all enjoy it.

Conference Schedule

<table>
<tr><th>Date</th><th>Time</th><th>Program</th><th>Online Platform</th></tr>
<tr><td>June 18</td><td>9:00-18:00</td><td>Online Registration</td><td rowspan="10">VooV Meeting
(腾讯会议)

ID: 383 349 513
https://meeting.tencent.com/s/zjDAZIb40nCH

 

(Here is link for online registration on June 18, 2020)</td></tr>
<tr><td rowspan="9">June 19</td><td>9:00-09:10</td><td>Opening Ceremony</td></tr>
<tr><td>09:10-10:10</td><td>Keynote Speech</td></tr>
<tr><td>10:10-10:20</td><td>Break Time</td></tr>
<tr><td>10:20-12:00</td><td>Keynote Speech</td></tr>
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<tr><td>14:00-15:30</td><td>Oral Presentation</td></tr>
<tr><td>15:30 -15:40</td><td>Break Time</td></tr>
<tr><td>15:40-16:30</td><td>Oral Presentation</td></tr>
<tr><td>16:30-17:30</td><td>Poster Presentation</td></tr>
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Note: The exact time may be adjusted according to the actual situation.

Online Platform

VooV Meeting

https://www.voovmeeting.com/

Tecent Meeting 腾讯会议

https://meeting.tencent.com/

ID: 483 219 247
https://meeting.tencent.com/s/L4bN63Zr1ayi

Part I. Opening Ceremony

Opening Ceremony 09:00-09:10, Friday, June 19, 2020

Opening Ceremony	Sunan Huang	National University of Singapore, Singapore

Part Ⅱ. Keynote Presentations

Keynote Presentation 09:10-10:10, Friday, June 19, 2020

Speaker	**Speech Title**	**Affiliation**
Nader Asnafi	The automotive revolution – perspective towards 2030	Örebro University, Sweden
Sunan Huang	Fault Diagnosis and Fault-Tolerant Control for Mechatronics Systems	National University of Singapore, Singapore

Break Time 10:10-10:20, Friday, June 19, 2020

Keynote Presentation 10:20-12:00, Friday, June 19, 2020

Speaker	**Speech Title**	**Affiliation**
Chunguo Zhang	Study on the innovation of buffer layer for welding high-strength steels	Chang'an University, China
Mohammad Hudzari Haji Razali	Mechatronic Application in Drip Irrigation System for Sustainable Agriculture Technology	Universiti Teknologi Mara (UiTM), Malaysia
Lev Rassudov	Pushing Performance of a Servo Drive to Hardware Limitations	Moscow Power Engineering Institute, Russia

Keynote Speeches

Nader Asnafi
Örebro University, Sweden

Speech Title: The automotive revolution – perspective towards 2030

Abstract: What do we do now and where do we wish/need to stand by 2030, when developing and operating/using sustainable products and production systems? Sustainability and digitalization with a special focus on the development, production, use and recycling/recovery of cars by 2030 are at the focus in this presentation. The current technological and industrial thoughts, wishes, trends, targets, and possibilities and the engineering tools one could use in sustainable design and manufacturing are addressed. Eco-efficiency and eco effectiveness measures in design and manufacturing are described and their impacts illustrated. The expected shift in personal mobility and its technological and industrial impacts will be discussed. Autonomous driving, electrification, and connectivity will be discussed, whilst sustainability is at the focus in this discussion. A holistic approach is used and emission targets, weight reduction, and alternative power trains and their impacts in material, production, use and recycling/recovery phases in a car's life cycle are shown.

Sunan Huang
National University of Singapore, Singapore

Speech Title: Fault Diagnosis and Fault-Tolerant Control for Mechatronics Systems

Abstract: During the past two decade, considerable research efforts have been made to find systematic approaches to fault diagnosis and fault-tolerant control in dynamical systems. Special attention has been given in mechatronics systems, especially for those operating in harsh environments, where safety is important. This field does not only concern the industries but is also active in the academic communities, involving many disciplines, such as actuator, sensing technology, computer control, image processing, and signal processing technology. In this talk, we review the related techniques in fault diagnosis and fault-tolerant control, grouping the types of existing works and discussing the main features in these technologies. Especially, we focus on the latest development of fault-tolerant control algorithms and give the analysis of concerning about the fault-tolerant control problem given from a practical application viewpoint.

Chunguo Zhang
Chang'an University, China

Speech Title: Study on the innovation of buffer layer for welding high-strength steels

Abstract: Both strength matching and weldability have non-negligible influence on fatigue resistance of welded high-strength steels, unfortunately these properties are generally mutually exclusive. Although the quest continues for stronger metallic materials, this has little to no use for welded structures as stronger and/or harder materials without good weldability. When equal or high strength matching, it more tends to generates welding softening, localized hardening, cold cracking, joint embrittlement and some other problems which decrease the reliability and fatigue resistance of the welded joints. As a result, welding joint becomes the weakest part of metallic welded structures. Applying an appropriate soft buffer layer between strong parent metal and hard weld metal can act as a sufficient buffer to improve fatigue performance in welded high-strength steels. A series of studies found that a competent buffer layer with an appropriate thickness can greatly increases the fatigue crack growth behavior of welded high-strength steels. Apart from that, it can also improve the microstructure heterogeneity, hardness profile, residual stress distribution in the welded joints.

Mohammad Hudzari Bin Haji Razali
Universiti Teknologi Mara (UiTM), Malaysia

Speech Title: Mechatronic Application in Drip Irrigation System for Sustainable Agriculture Technology

Abstract: This study elaborated on several finding on using of Sustainable Technique for enhancement of drip irrigation system toward landscaping Precision Agriculture especially in mechatronic and remote site area of Malaysia. Main part of the heart in this development of drip irrigation is sustainably operated selfie due gravity effected. Similarly with water that be conveyed through irrigation area are naturally from underground and rain water that was collected. As the best creation of human being, Allah the almighty creator brings the fresh water from rain as the big gift to us. Water is one of the important component in our daily life. The need for water has increasing every day and has universal function, which is not only for drinking but also for any usefulness. For agricultural activity, water is one of the main components for daily use in the field. Sometimes there will be a drought season that will decrease the water availability that will cause declining on water requirement for plants. Thus, the requirement for underground water is important to fill the necessity of water planting. The study is conducted at UiTM Jasin's Farm and the data were taken from Google Earth Pro before transfer into ArcMap to get the lowest altitude in the project area. Garmin eTrex Legend HCx were specifically used in this research, which the function like as IOT which is to locate the coordinates of the lowest elevation in research area. Then, the area is analyzed to know the nature of the area can be proof that lowest altitude of an area can access underground water with consuming less time. From the result, this method has reduced the time to access the underground water. In conclusion, the most dominant factor is the lowest altitude of the area to get the into the underground water. For recommendation, this research can be continued by obtain elements contained in groundwater UiTM Jasin's Farm based on this research.

Lev Rassudov
Moscow Power Engineering institute, Russia

Speech Title: Pushing Performance of a Servo Drive to Hardware Limitations

Abstract: The hardware underuse is a pressing problem being focused in a vast variety of research fields. In servo motion control the inability of a conventional control system to thoughtfully take into account the hardware constraints might lead to the increased installed power and costs of the equipment intended to solve a particular technological task. The rapid developments in digital signal processing and communication technologies in the recent years make it possible to effectively implement complex control strategies requiring not only high computational power onboard, but the detailed data of the technological process as well. Pushing the performance of a servo drive to hardware limitations by means of a control system can be a cost-effective solution depending on the application. This is especially the case for high-end precision motion systems.

The talk covers three aspects. The first is the constraint analysis based on the servo drive component parameters from one side and on the limitations of the technological process - from another. Secondly, it is the CNC system enabled to plan motion profile taking into account the obtained constraints information. And finally, automatic constraint analysis can help finding bottlenecks of the system and analyze if sophisticated control algorithms, such as field weakening, can improve the given hardware performance for the given application.

Part Ⅲ. Oral Presentations

Oral Presentations 14:00-15:30, Friday, June 19, 2020

ID	Paper Title	Speaker	Affiliation
MEIE3001	A Coupled Thermal/Electric Circuit Model for Design of MVDC Ship Cables	Xiang Zhang	Purdue University
MEIE3002	High-Speed Electrical Machines Design with JMAG	Faisal Khan	COMSATS University Islamabad, Abbottabad Campus
MEIE3003	Analysis of Electrical breakdown in gases	Danish Khan	Indus University
MEIE39102	Low signal-to-noise ratio speech classification with wavelet	Yifen Peng	Guangzhou University
MEIE38739	Distributed cooperative control strategy for islanded microgrids	Hongjie Deng	Fuzhou University
MEIE37648	A novel scheme reducing greatly the temperature difference of hot-plate under induction heating	Jin Wang	Ningbo University

Break Time 15:30-15:40, Friday, June 19, 2020

Oral Presentations 15:40-16:30, Friday, June 19, 2020

ID	Paper Title	Speaker	Affiliation
MEIE34201	Research on Coating Method of Thermal Conduction Silicone Grease for Spacecraft Equipment Based on Stencil Printing	Tao Guo	Beijing Institute of Spacecraft Environment Engineering
MEIE35817	Research on microwave heating structure optimization of auxiliary material box of road maintenance vehicle	Kangping Gao	Chang'an University
MEIE33205	Design and analysis based on Recurdyn of the electric crawler type remote controlled hedge trimmer	Ziquan Zhan	Chang'an University

Part Ⅳ. Poster Presentations

Poster Presentation 16:30-17:30, Friday, June 19, 2020

ID	Paper Title
MEIE38520	Ultra-wideband Microwave Detection on Cracks in Insulating Mandrel of Polymeric Insulator **Huiguang Zhao**, Zhifeng Ma, Bin Wang, Yuantai Niu, Lijuan Dou, Xiangqian Zhu, Runqi Wu and Jungang Yin State Grid Henan Electric Power Company, Xinxiang Power Supply Company, China
MEIE32629	Research on the influence of pulse parameters on surface charge **Haofan Lin**, Ruixiang Tao, Luyao Zhou and Bing Yu State Grid Zhejiang Electric Power Research Institute, China
MEIE38007	Research on Full-Bridge LCL Resonant Converter as Constant Current Source in the ZVS Condition **Tao Xue**, Chunen Fang, Chunyan Zeng, Xuhui Fu, Ning Zhang and Junping Chen Xihua University, China
MEIE37266	Structural condition monitoring system of steam/water piping in thermal power plant and its application **Yu Wan**, Jiyang Yin, Chuanling Jin and Shitao Liu Jiangsu Frontier Electric Technology CO., Ltd, China
MEIE38074	Analysis of Vibration Resistance Reliability of Directional Sounding Pipe Framework for MWD **Qing Liu** and Junjie Wu Shengli College, China University of Petroleum, China
MEIE38564	A New Model to Resolve Technical Problems **Shi Jun Zhang** Shandong Jianzhu University
MEIE34172	Design of Power Parameter Monitor System Based on Android Mobile Phone **Honghu Xie**, Hangjun Shao and Qiong Chen Nanchang Hangkong University, China
MEIE37678	Software Implementation of Automatic Fault Identification based on the Duval Pentagon Hong Hu, Dong Wang, Jing Fu, Yanfang Mao, **Ziwei Zhang** and Denghai Wu Sichuan Energy Research Institute, Tsinghua University, China
MEIE38273	Experimental study on the failure of tangential anti-loose dowel of ship hydraulic fluid tubing in alternating torque and vibration environment **Ruliang Wu**, Shouqing Huang, Chao Song and Wei He Beijing Institute of Spacecraft Environment Engineering, China
MEIE38896	Development and Application of Online Load Measurement System for Hanger and Support **Yu Wan**, Xubi Liu, Chuanling Jin and Jiyang Yin Jiangsu Frontier Electric Technology CO., Ltd, China
MEIE39808	Speed sensorless control employing adaptive sliding mode adjustable model MRAS for induction motors at low speed range Jie Li, **Dong Wang** and Xiaoxiao Yang Xi'an University of Technology, China
MEIE36742	Design and Performance Analysis of Pneumatic Disc Brake of a New Energy Commercial Vehicle **Shichao Fu** and Haiming Sun Hubei University of Automotive Technology, China

Supplementary Information

Instructions for Presentations

Keynote Speech & Oral Presentation

Power Point or PDF files

Duration of each Presentation (Tentatively):

Regular Oral Session: 10-12 Minutes of Presentation, 3 Minutes of Q&A

Keynote Speech: 25 Minutes of Presentation, 5 Minutes of Q&A

If the presenter wants to join the conference with a pre-recorded video, here are some requirements:

a. *The video should be in MP4 format.*
b. *Video resolution should be at least 720P.*
c. *Presenter is visible through the video.*

Poster Presentation

PDF files

Requirement for the Presenters:

Keep online during the session, and discuss with the audiences about his (her) paper

Contact Us

MEIE2020 Organizing Committee

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