



Nov. 14-15, 2014  
*College of Engineering BLD 2 (Youngmyung Hall),  
 Chonnam National University*



**Organized by :**

Automobile Research Center of CNU,  
 Center for Future Integrated Mechanical  
 Systems of BK21plus

**Supported by :**

Chonnam National University,  
 Gwangju Convention & Visitors Bureau  
 The Korean Society of Automotive Engineers



# The 17th International Symposium on Technology for Next Generation Vehicle

Date : Nov. 14(Fri.) ~ 5(Sat.) 2014  
Venue : College of Engineering BLD 2 (Youngmyung Hall),  
Chonnam National University (CNU)  
Organized by : Automobile Research Center of CNU,  
Center for Future Integrated Mechanical Systems of BK21plus  
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The Korean Society of Automotive Engineers (KSAE)

**Nov. 14 (Fri.) 2014**

**Chairperson: Prof. Young-Bae Kim** (*Chonnam National University*)

09:00 - 09:30 : Registration

09:30 - 09:45 : Opening Ceremony (Present of CNU, Director of ARC)

**[Session 1]**

**Chairperson: Prof. Hyun Wook Kang** (*Chonnam National University*)

09:45 - 10:20 **Prof. Ichiro Kageyama\*** (*Nihon University, Japan*)

**Study on Construction of Driver Model for Advanced Driver Support System**

10:20 - 10:55 **Prof. Heejin Cho\*** (*Mississippi State University, USA*)

**U.S. Vehicle Research Trend and Current Vehicle Research at Mississippi State University**

10:55 - 11:10 **Iku Saito\***, Hiroshi Nomura, Ichiro Tsumagari (*Nihon University, Japan*)

**Development of a Small Light-oil Burner for New Exhaust Gas Post-Treatment System of Diesel Engine**

11:10 - 11:25 **Guangyong Li\***, Xuan Wu, Dong-weon Lee (*Chonnam National University, Korea*)

**Reduced Liquid Metal Printing for Advanced Electronics**

11:25 - 11:40 **Xuan Wu\***, Guangyong Li, Dong-weon Lee (*Chonnam National University, Korea*)

**A Broadband Hydrogel-Based Energy Harvester Driven by Ambient Vibrations**

11:40 - 11:55 **Akinobu Yoshida\***, Yukiyo Kuriyagawa, Kageyama Ichiro (*Nihon University*)

**Construction of Motorcycle Riding Simulator with Stereoscopic Vision**

11:55 - 13:15 Lunch

**[Session 2]**

**Chairperson** : **Prof. Byeong Soo Oh** (*Chonnam National University*)  
**Prof. Sukho Park** (*Chonnam National University*)

13:15 - 14:15 **Poster presentation**

**[Session 3]**

**Chairperson** : **Prof. Insu Jeon** (*Chonnam National University*)

14:15 - 14:50 **Prof. Jinyue Yan\*** (*Royal Institute of Technology and Mälardalen University, Sweden*)  
**Future Energy Transitions and Innovations**

14:50 - 15:25 **Mr. Wonkun Kim\***, Ikg Jang, Kyungok Lee (*Robert Bosch Korea Ltd., Korea*)  
**Advanced Clean Diesels with Closed-Loop Controls**

15:25 - 15:40 **Sunghyun Lee\***, Insu Jeon (*Chonnam National University, Korea*)  
**Development of Monochromator for Monochromatic X-ray**

15:40 - 15:55 **D. M. Bappy\***, Insu Jeon (*Chonnam National University, Korea*)  
**Accelerated Medical Image Denoising**

15:55 - 16:10 **HaRa Kim\***, Ki-Ju Kang (*Chonnam National University, Korea*)  
**The Fabrication of an Actuator Based on Wire-Woven Metal**

16:10 - 16:20 Break time / Poster

**[Session 4]**

**Chairperson** : **Dr. In Cheol Choi** (*Korea Institute of Industrial Technology (KITECH)*)

16:20 - 16:55 **Prof. Yong Kil Kim\*** (*Japan Automobile Research Institute, Japan*)  
**Technical Trends on Clean Diesel Vehicle in Japan**

16:55 - 17:30 **Hyun Sik Han\*** (*Heesung Catalytic, Korea*)  
**Recent Progress in Catalytic Technologies for Advanced Emission Control**

17:30 - 17:45 **Joon Tae Jung\***, Bong-Kee Lee (*Chonnam National University, Korea*)  
**Multi-physics Finite Element Model for a Transient Analysis of an Injection Mold Deformation**

17:45 - 18:00 **Seung Chul Han\***, Min Geun Lee, Ki-Ju Kang (*Chonnam National University, Korea*)  
**An Analysis of Shellualr Behaviors under Uniaxial Compression**

18:00 - 18:30 Move to Restaurant

18:30 - Dinner

**Nov. 15 (Sat.) 2014**

08:30 - 09:00 Registration

**[Session 5]**

**Chairperson : Prof. Su Han Park** (*Chonnam National University*)

09:00 - 09:35 **Prof. Hiroshi Nomura\*** (*Nihon University, Japan*)

**Overview of Engine Laboratory in College of Industrial Technology**

09:35 - 10:10 **Dr. Dongok Kim\*** (*KATECH, Korea*), Youngsik Yoon (*Konyang University*)

Dongwoo Shin (*Kyungbuk Hybrid Technology, Korea*)

**The Study of Warm Forming of Tailor Rolled Blank Aluminum Center Pillar**

10:10 - 10:25 **Takumi Hirano\***, Yukiyo Kuriyagawa, Ichiro Kageyama (*Nihon University, Japan*), Yoshio Furihata, Toshinobu Mitsui (*Hino Motors Ltd.*)

**Study on the Shimmy Phenomenon for Light Duty Truck**

10:25 - 10:40 **Ya-Xiong Wang\***, Fei-Fei Qin, Young-Bae Kim (*Chonnam National University, Korea*)

**Proton Exchange Membrane Fuel Cell Current Stress Reduction for Lifetime Extension Based on Time Delay Control**

10:40 - 10:55 **Zhang Xia\***, Jun Seok Song, Byeong Soo Oh (*Chonnam National University, Korea*)

**Heat Transfer Simulation of a Single Cell Air-cooled of Polymer Electrolyte Membrane Fuel Cell**

10:55 - 11:10 Break time / Poster presentation

**[Session 6]**

**Chairperson: Prof. Seong Young Ko** (*Chonnam National University*)

11:10 - 11:45 **Prof. Xiumin Yu\***, He Chang, Haibo Chen (*Jilin University, China*)

**Performance Investigation of Airflow in Underhood Based on Wind Tunnel Experiment**

11:45 - 12:00 **Hongseok Choi\***, Sukho Park, Seong Young Ko, Jong-Oh Park (*Chonnam National University, Korea*)

**Kinematics Analysis and Verification of Robotic Patient Positioning System for Heavy Ion Therapy**

12:00 - 12:15 **Xue Mei Jin**, Joung-An Seon, Sukho Park, Jong-Oh Park, Seong Young Ko (*Chonnam National University, Korea*)

**Path planning for planar cable driven parallel robot**

12:15 - 12:30 **Tien Nguyen Kim**, Seong-Young Ko, Jong-Oh Park, Sukho Park (*Chonnam National University, Korea*)

## **Design of Terrestrial Walking Robot Using Ionic Polymer Metal Composite Actuator**

12:30 - 12:40 Break time / Poster presentation

12:40 - 13:00 Awards Ceremony

### **[Session 2] Poster presentation**

Time/Date : **13:15-14:15 Nov. 14 (Fri.), 2014**

**Chairperson** : **Prof. Byeong Soo Oh, Prof. Sukho Park** (*Chonnam National University*)

1. Gwangjun Go, Seong Young Ko, Jong-Oh Park, Sukho Park (Chonnam National University)  
**Position based magnetic field control based for microrobot using four electromagnetic coils**
2. Kisu Kim, Seong-Young Ko, Jong-Oh Park, Sukho Park (Chonnam National University)  
**Development of ferro actuator**
3. Daesuk Kim, Su Han Park, Byungchul Choi (Chonnam National University)  
**Engine performance and emission characteristics of diesel-biodiesel-bioethanol blended in a CRDI diesel engine**
4. Jong-Yun Kim, Si-Seup Kim, Dong-weon Lee (Chonnam National University)  
**Development of micro displacement detection system using a cantilever sensor**
5. Hyeong Yong Park, Sung Kwang Cho, Seoung Yun Seol (Chonnam National University)  
**Study of small multi-cyclone's performance**
6. JeongSu Son, Jae-Tack Jeong (Chonnam National University)  
**Stokes flow through a microchannel with projections of constant spacing**
7. JinSik Oh, Jong-Oh Park, Sukho Park, Seong Young Ko (Chonnam National University)  
**Marker Recognition using biplanar fluoroscopic X-ray system**
8. Cheong Lee, Seong Young Ko, Jong-Oh Park, Sukho Park (Chonnam National University)  
**3D helical motion and locomotion of magnetic capsule endoscope**
9. Jun Young Jeon, Hwee Kwon Jung, Gyuhae Park (Chonnam National University)  
**Fatigue damage monitoring of a composite plate**
10. Cheol Jeong, Byung-Chul Choi, Kou-Zong Cho (Chonnam National University)  
**Urea tank durability life prediction using the finite element method**
11. Hwee Kwon Jung, Myung Jun Lee, Gyuhae Park (Chonnam National University)  
**Impact detection on UAV wing structure using vibro-haptic interface**
12. Jeong Myung Choi, Liu Gang, Ki-Ju Kang (Chonnam National University)  
**The compression behavior of micro tube WBK-Q**
13. Changmo Han, Bong-Kee Lee  
**Flexible thermoplastic elastomer films by compression molding**



14. Xiaolong Jiang, Daesuk Kim, Byungchul Choi (Chonnam National University)  
**Effect of diesel-butanol blends on emission characteristics of a CRDI diesel engine**
15. Jin Zhen, Hyunchul Choi, Joungbeom Park<sup>2</sup>, Chunsoon Jung<sup>2</sup>, Seong Young Ko, Jong-Oh Park,  
Sukho Park (Chonnam National University, GEMSS UROCAMP SYSTEM CO. LTD, Korea)  
**Tunneling test of chronic total occlusion with extracorporeal shock wave lithotripsy**
16. Lephon Hung, Hongseok Choi, Jong-Oh Park, Sukho Park, Seong Young Ko  
(Chonnam National University)  
**Performance evaluation of lung tumor motion tracking in heavy ion therapy**
17. Viet Ha Le, Jinsik Oh, Seong Young Ko, Jong-Oh Park, Sukho Park  
(Chonnam National University)  
**Magnetically guided active locomotion capsule endoscope integrates biopsy device**
18. Liu Gang, Dae Seung Kang, Ki-Ju Kang (Chonnam National University)  
**Finite element analysis of mechanical properties o micro hollow tubular WBK-Q**
19. Nguyen Dang Ban, Ki-Ju Kang (Chonnam National University)  
**The effect of boundary conditions to buckling of conical shells**
20. Trieu Khoa Nguyen, Bong-Kee Lee (Chonnam National University)  
**Investigation of flow characteristics inside novel wellplates based on dimensionless numbers**
21. Van Du Nguyen, Young Jin Choi, Sunghoon Cho, Han-Earl Jung, Ji Won Han, Shaohui Zheng,  
Guo Shuai Wu, Seong Young Ko, Jong-Oh Park, Sukho Park (Chonnam National University)  
**Delivery of paclitaxel encapsulated L- $\alpha$ -phosphatidylcholine lipid microbeads to murine breast-cancer cells**
22. Fan Wang, Seong Young Ko, Jong-Oh Park, Sukho Park (Chonnam National University)  
**Electrospun pVDF-graphene composite actuators**
23. Li Hao, Seong-Young Ko, Jong-Oh Park, Sukho Park (Chonnam National University)  
**Fabrication of hydrogel micro-pattern and its characteristics of induction heating for the drug delivery**

## Map of College of Engineering BLD 2 (Youngmyung Hall)

