

# TM03

## Poster Session

15:40-17:40

Chair1 : Taechon Ahn ( Wonkwang University, Korea )

Room : Base 2nd Floor-Zillertal Chair2 :

TM03-13

### Robust design of vertical type micro-accelerometer and coupled field analysis with FEM

Jungyul Park(KIST, KOREA), Innam Lee, Gil Ho Yoon,  
Seonho Seok, Jeongheon Kim, Kukjin Chun,  
Kyo-Il Lee(Seoul Nat'l Univ., KOREA)

- Introducing to vertical type micro-accelerometer
- Lumped system modeling for vertical type micro-accelerometer
- Robust optimal design for vertical type micro-accelerometer
- Multi-physics analysis with FEM
- Propose the design methodology considering fabrication error and strongly coupled multi-physics

TM03-14

### A Study on Anti-Sway Control Using PID Controller for a Remote Crane Operation

Tae-Jung Lho, Dae-Woo Choi, Hyun-Woo Joo  
(Tongmyong Information Univ., KOREA)

- Contents 1. Introduction
- Contents 2. Mathematical Modeling
- Contents 3. PID Parameter Application
- Contents 4. Simulations and Experiments
- Contents 5. Conclusions

TM03-15

### Decoupling Based PID Control and Intelligent Tuning of Multivariable Thermal Power Plant

Dong Hwa Kim(Hanbat Nat'l Univ., KOREA)

Contents 1Abstract- In the thermal power plant, it is difficult to maintain strict control of the steam temperature in order to avoid thermal stress, because of variation of the heating value according to the fuel source, the time delay of changes in main steam temperature versus changes in fuel flow rate, difficulty of control on the main steam temperature control and the reheater steam temperature control system owing to the dynamic response characteristics of changes in steam temperature and the reheater steam temperature, fluctuation of inner fluid water and steam flow rates widely during load-following operation.

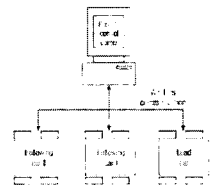
Up to the present time, the PID controller has been used to operate th...

TM03-16

### Testbed Development for Vehicle Longitudinal Platooning Control via Remote Control Station Control

Hae Seok Song, Tae Min Kim, Jae Weon Choi(Pusan Nat'l Univ., KOREA)

- Introductions
- Sensor system
- Driving system
- Steering system
- Wireless communication system
- O/I (Operation/Interface) system
- Conclusions



TM03-17

### The Tension Control by using CDM of the Full Stand Hot Finishing Mill

Dong Wook Lee, Byoung Joon Ahn , Young Ho Kim(Pusan Nat'l Univ., KOREA), Man Hyung Lee

We describe the looper controller design for a hot strip mill. The looper is to control the strip tension which influences on the width of the strip. It is very important to control the looper control of the hot strip mill, but difficult to control the looper, because there exists on mutual interaction among strip gauge, looper angle, and strip tension. In this paper, we present the modeling for the hot strip finishing mill to control the tension of the strip and suggest a cross control method of full-stand hot strip finishing mill. The cross control is a very simple method that allows non-interacting control.

TM03-18

### Implementation and Tests of Antilock Braking Algorithm for a heavy vehicle

KiChang Lee, Jeongwoo Jeon, Donha Hwang, Yongjoo Kim(KERI, KOREA)

Antilock brake System (ABS) is a essential safety equipment for modern vehicles. It prevents wheels from being locked-up when emergency braking of a vehicle is required. So it can improve directional stability of the vehicle, shortens stopping distance. Heavy Vehicles such as trucks and buses use mainly pneumatic pressures for their braking systems, where pneumatic modulators control the flow rate of compressed air thus braking pressures in the wheels. In this paper, a antilock braking algorithm which is suitable for heavy vehicles was developed. This algorithm uses limit cycle of wheels and is implemented in the ABS ECU. The developed algorithm and ECU were tested in the labo...