

D-TMP01 Domestic Poster Session

13:00-13:50

Room : Terrace(3F)

Chair : Han Chang Soo (Hanyang Univ.)

Co-Chair : Kim Jeong-Ha (Kookmin Univ.)

13:00 – 13:50

D-TMP-01

The Fuzzy Fault Diagnosis System for Induction Motor

Byung Yeun-Sub, Jang Dong-Uk Hyundai-Jun
(KRRI)

Induction motors are a critical component of many industrial machines and are frequently integrated in commercial equipment. The many economical losses and the deterioration of system reliability might be caused by the failure of induction motors in industrial field. Based on the reliability and cost competitiveness of driving system(motors), the faults detection and diagnosis of system is considered very important factors. In order to perform the faults detection and diagnosis of motors, the vibration monitoring method and motor current signature analysis (MCSA) method are emphasized. In this paper, MCSA method is used for induction motor fault diagnosis. This method analyzes the motor's supply current, since this diagnoses the motor's condition. The diagnostic system is constructed by using LabVIEW of National Instruments.

13:00 – 13:50

D-TMP-03

Development of a High Power Ultrasonic Transducer for Steel Pickling Process

Son Boongho (POSCO)
Roh Yongrae (Kyungpook National Univ.)

In order to apply for pickling line in cold rolling process, a high power magnetostrictive ultrasonic transducer was developed. The transducer is expected to overcome the shortcomings of conventional high power ultrasonic transducers. The transducer consists of Fe-Co-V alloy sheets for the magnetostrictive material, an ultrasonic horn made of Hastelloy to withstand acidsolution, and electric driving circuit. In the development, the transducer was designed with the theoretical and numerical methods such as finite element method, and was characterized with experimental water tanks. The developed transducers turned out to be able to generate the sound pressure up to 20,000 Pa, and to be suitable for application ...

13:00 – 13:50

D-TMP-05

A Study on The Slidacs Type Automatic Voltage Regulator Having The Improved Output Characteristics

Kim Sung-Do, Park Jung-Hoon, Hong Sung-Hoon,
Kand Moon-Sung
(Chongju Univ.)

In this study, we have designed and fabricated the slidacs type automatic voltage regulator(AVR) that is able to control the output voltage continuously according to load variation. Especially, the frictions between the surface of contact of the slidacs coils and the output wire moving rod are reduced by transforming the mechanical configuration of surface of contact of slidacs from the conventional sliding one into the proposed rotary one composed of cylindrical bearing. Thus, the slidacs type AVR using cylindrical bearing proposed in this study has less noise than conventional one owing to the reduction of frictions, and its breakdown ratio caused by the abrasion of contact materials is reduced. Furthermore,

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D-TMP-02

Compensation Logics of Controller in Korean Standard Super Critical Once Through Boiler

Eun Gee Kim
(Tangjin Power Plant in Korea East West Power Company)

There are not only lots of controllers such as UMC(Unit Master Controller), BMC(Boiler Master Controller), Fuel Flow controller, Air flow controller, Feed water flow controller, S/H R/H Temperature controller and so on, but also compensation controller such as BTU compensator, Fuel/Water ratio controller and O₂ Co controller to take automatic control in the super critical once through boiler. It is important to make complete automation of boiler to use the compensation controller like BTU compensator. For example, In case of some boiler condition, operator has to change combustion parameter for changing the coal, on the contrary BTU compensator can calculate set value of the fuel flow and reset the fuel flow demand by itself. This paper shows us the logic and instruction regarding compensation controller of boiler that can be operated automatically.

13:00 – 13:50

D-TMP-04

The Effect Analysis for Rain Attenuation of VSAT

Hong Sung-Tak, Shin Gang-Wook
(KOWACO)

In case of data transmission using the upper 10GHz frequency, rain results in attenuation of radio waves. And the most serious atmospheric effect in a satellite link is the rainfall. The attenuation of rainfall very seriously affects the quality of transmission line. Because the rain increases thermal noise and interference, and decreases the amplitude of the signal. KOWACO manages the VSAT system instead of VHF network for communication of rain and water-level data from 1998. The purpose of this system is to monitor the change of water-level and rain data during a flood duration. VHF system acquires the data by a call per a hour. But the satellite network obtains the data whenever event data occur. Thus the satellite network is more powerful than the VHF system. In study...

13:00 – 13:50

D-TMP-06

A Study on the Effective Data Transmission for the Remote Monitoring And Control System Using TDM/TDMA

Shin Gang-Wook, Hong Sung-Tak(KOWACO)

The satellite communication has been widely applied in the various fields included the remote monitoring and control system through the technical progress. In the star network that is a type of the satellite communication network, users can easily use an earth station because of the large scale and high power of the hub station. This type has many profits which are flexible of network configuration, and can conveniently and inexpensively supply various services which is used in the data acquisition and distribution by important communication means for construction of information society. Using these profits, the satellite communication system is applied to the unmaned remote operation field for the remote control and monitor of the water treatment plants. But,