I-FMP01 International Poster Session

13:00-13:50 **Chair : Lee Man Hyung (Pusan National Univ.)**
Room : Terrace(3F) **Co-Chair : Suh Il Hong (Hanyang Univ.)**

13:00 – 13:50 **I-FMP-01**

Bi-directional Actuator using a permanent magnet and solenoid

K. H. Kim, D. M. Kim, S. Q Lee, D. G. Gweon (KAIST)

An actuator using a permanent magnet and solenoid is proposed and designed in this paper. Its design concept is composed of a driving force generation, a guide mechanism, and a symmetric structure. At first, Driving Force generation uses a concept that is a change of flux by using a permanent magnet and solenoid. A permanent flux is generated by a permanent magnet. Changeable flux is created by a variable current flowing through coil such the solenoid. The direction of this flux is changed due to current flowing through coils. The combination of permanent and changeable fluxes make various flux densities between yokes of moving part and fixed yokes. And then, the flux densities create forces(F), which are used to drive this actuator, in lower and upper gap. In this actuator, ...

13:00 – 13:50 **I-FMP-02**

Control of IEEE1394 digital home appliances using AV/C Command Set

Il-Jung Kim, and Jong-An Park (Chosun Univ.)

It is necessary to have enough transmission capacity for advanced internet techniques and various digital home appliances networking. Home appliances interface IEEE1394 technique has much wealthy transmission skill. IEEE1394 is using home appliances through various information form image and voice change data real time print out. In this paper, AVC CTS technology and IEEE1394 technology are introduced. Digital Video Camera includes compression format using DV. System composition control is consisted of protocols like IEC-61883 and AV/C command set standard.

13:00 – 13:50 **I-FMP-03**

Detection and Location of Partial Discharge in Oil Filled Transformer

Seung-Whan Lee, Hak-Joon Oh,and Chan-Soo Chung(Soongsil Univ.), Man-Soo Yun(Seoul Jeongsu Polytechnic college)

The research for detecting of insulating deterioration in transformer has been studied from long ago. Analysis method of combustible gas, which is included in insulating oil, has been widely used in detection of transformer pre-fault detection due to the effectiveness of its method. Recently the fault effect of the large transformer is very critical in a power system, therefore the on-line monitoring and diagnostic system is needed. In addition, the more accurate method of detecting a Partial Discharge (PD) location should be developed. For preventive maintenance against discharge failures, it is important not only to detect the discharges, but also to accurately estimate their positions. However, ...

13:00 – 13:50 **I-FMP-04**

A Tape Feeder Inspection System for Measuring Feeding Accuracy

Tai-Hoon Cho (Korea Univ. of Techmology and Education)

A tape feeder of a SMD(Surface Mount Device) mounter is a device that sequentially feeds electronic components on a tape reel to the pick-up system of the mounter. As components are getting much smaller, feeding accuracy of a feeder becomes one of the most important factors for successful component pick-up. Therefore, it is critical to keep the feeding accuracy to a specified level in the assembly and production of tape feeders. This paper describes a tape feeder inspection system that was developed to automatically measure and inspect feeding accuracy using machine vision. It consists of a feeder base, an image acquisition system, and a personal computer. The image acquisition system is composed of CCD cameras with lens...

13:00 – 13:50 **I-FMP-05**

Design of an Adaptive Nonlinear Compensator using a Wavelet Transform Domain Volterra Filter and a Modified Escalator Algorithm

Dong-Oh Hwang, Dong-Jun Kang, and Sang-Won Nam (Hanyang Univ.)

An efficient adaptive nonlinear compensator, based on a wavelet transform domain adaptive Volterra filter along with a modified escalator algorithm, is proposed to speed up the convergence rate of an adaptive LMS algorithm. In particular, it is well known that the (e.g., slow) convergence speed of an adaptive LMS algorithm depends on the statistical characteristics (e.g., large eigenvalue spread) of the corresponding auto-correlation matrix of the input vector. To solve such a convergence problem, the proposed approach utilizes a modified escalator algorithm and a wavelet transform domain adaptive LMS Volterra filtering technique, which leads to diagonalization of the auto-correlation matrix of the ...

13:00 – 13:50 **I-FMP-06**

Adaptive algorithm for Double-Talk Echo Cancellation

Hak-Joon Oh, Seung-Whan Lee, Hae-Soo Lee, Chan-Soo Chung(Soongsil Univ.)

In the double-talk situation where both the near-end and far-end signal present, the performance of echo cancellation using the conventional LMS algorithm is easily degraded because it freezes the adaptation in this situation. Recently CLMS and ECLMS algorithms were proposed to solve this problem. These algorithms could be used to adapt the filter's parameters continuously even in the double -talk situation. In this paper, we propose new recursion formulas to calculate the ECLMS algorithm. And we compare and analyze the performances of double-talk echo canceller according to changing the value of channel tracking factors α, β and forgetting factor λ. The computer simulation was performed and the results showed that, ...