TM03

Poster Session

TM03-7

Energy Saving Hydraulic Control System using Hydraulic Pump/Motor

Yongrae Cho, Bumseung Oh, Kyoungkwan Ahn, Soonyong Yang,
Byungryong Lee(Univ. of Ulsan, KOREA)

Today it becomes a serious problem to exhaustion of a fossil fuel and air pollution by exhaust gases from road vehicles for environment preservation. To solve this problem, the developments of a hybrid vehicle have been processed for the purpose of reducing pollution and energy-savings. By the way, flywheel hybrid vehicle using variable pump/motor was proposed as one feasible hybrid system in place of hybrid vehicle system by the conventional storage battery. The proposed flywheel hybrid vehicle is composed of an accumulator or a flywheel as the energy generation and storage source and three variable hydraulic pump/motor as the energy transfer device. Flywheel has the characteristic of high ...

TM03-8

An Optimal Design of a two stage relief valve by Genetic Algorithm

seungwoo Kim, doowan Im, Kyungkwan Ahn, Soonyong Yang,
Byungryong Lee(Univ. Of Ulsan, KOREA)

In this study, a novel systematic design procedure by Genetic Algorithm of a two stage relief valve is proposed. First of all, a mathematical model describing the dynamics of a balanced piston type relief valve has been derived. Governing equations such as dynamic equations for the main spool and the pilot spool and flow equations for each orifice are established. The mathematical model is verified by comparing the results of simulation with that of experiments. Furthermore, influences of the parameters on the dynamic characteristics of a relief valve have been investigated by simulation of the proposed model. Major design parameters on the valve response are determin...

TM03-9

Design of a Common Control Rod Control System(CRCS) Using Wavelet Transform for Fault Detection

Jong-Min Cheon, Choon-Kyung Kim, Soon-Man Kwon, Jong-Moo
Lee, Jong-Moon Kim(KERI, KOREA)

1. Introduction
2. CRCS
3. Fault Detection
4. Simulation
5. Conclusions
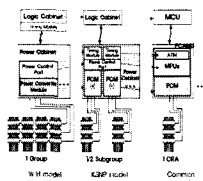
TM03-10

Center Position Control of Cold Rolling Mills Using Cofficient Diagram Method

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

Abstract: In this paper, coefficient diagram method is applied to a center position controller design of the web. The significant property of this controller is the designer can design the controller simultaneously a good balance of stability, response, and robustness. Manabe's CDM is useless for designing high-order plant. We proposed a modified CDM which can be called as approximated pole placement method. The practicality of the proposed method is shown through computer simulation

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TM03-11

A Study on Improvement of Flatness Control for Aluminum Cold Rolling Mill

TaeYoung Kim, Bill Kraeling
(Automation depart Alcan Ulsan plant, KOREA)

Flatness of strip at aluminum cold rolling is one of the important quality parameters of rolled products. The reasons for this are perhaps obvious: for many of the end uses, subsequent processing requires a flat product poor flatness on-line can lead to reduced running speeds and hence to lower production levels. Amongst the reasons for lower running speeds is the increased risk of strip breaks. The Alcan Ulsan plant developed an automatic flatness control system on conventional four high mills for a year. This system compose of three parts as Intel RMX 3.3 operating system, advanced techniques, and flatness error analysis system. Strip flatness be measured by air bearing roll, passing the s...

TM03-12

Tension control of a Hot strip mill finisher using measured speed data

Dukho Lee, Sangchul Won(POSTECH, KOREA)

●Introduction
●Technical Background
●Tension control of a Hot Strip Mill
●Simulation
●Conclusion