A Study of 3-Dimension Graphic Monitoring System for Spent Fuel Dismantling Process
Kim Sung-Hyun, Song Tae-Gil, Lee Jong-Youl and Yoon Ji-Sup
(Korea Atomic Energy Research Institute)

To utilize the uranium resources contained in the spent nuclear fuel generated from the nuclear power plants, the remote handling and dismantling technology is required. The dismantling process of the spent fuel is the most common process involved in the spent fuel recycling, the rod consolidation and the disposal processes. Since the machine used in the dismantling process are located and operated in isolated space, so called a hot cell, the reliability of machines is very important. To enhance the reliability of the process, in this research, the graphical monitoring system is developed for the fuel dismantling process. The graphic model of each machine is composed of many parts and every parts of the graphic model are given their own kinematics. Using the kinematics and simulating the graphic model in the virtual environment, the validity of the conceptual design can be verified instead of...

Improvement of Mass Flow and Thickness Accuracy in Hot Strip Finishing Mill
Hong Sung C.
(POSCO)

Finishing mill (FM) is set up with rolling conditions (rolling speed, rolling force, roll gap, etc.) calculated by a FSU (Finisher Setup) model considering the temperature, qualities and size of a transfer bar and a strip at the entry and exit of FM before the transfer bar is rolled through FM. If the accuracy of setup is low mass flow unbalance occurs, so that the accuracies of the strip thickness and width become lower or rolling operation fault occurs. Therefore, to enhance the performance of the FSU model and to improve mass flow and the thickness accuracy of a strip in the 7-stand finishing mill using a hot strip speed measurement system. This study is being performed. In this paper, the speed measurement system, a developed neural network for predicting...

Optimal supervisory control for multiple-modelled discrete event systems
Lee Moon-Sang and Lim Jong-Tae
(KAIST)

In this paper, we present a procedure to design the robust optimal supervisor which has the minimal cost in the sense of average for a given multiple-modelled discrete event system (DES). In order to design the robust optimal supervisor, we extend the optimal supervisor design algorithm for a deterministic DES to the case of multiple-modelled DESs. In addition, using the proposed algorithm with modified costs of events and penalties of states, we can show whether a robust supervisor for a given multiple-modelled DES exists and design the minimally restricted robust supervisor.

Hierarchical Decentralized Supervisory Control of Discrete Event Systems
Seong Gyu Kim and Jong Tae Lim
(KAIST)

In this paper, we consider a hierarchical decentralized supervisory control of discrete event systems under partial observation in two-level hierarchical structure since the observability is a practical and general property in modeling of real systems. Hierarchical consistencies of controllability and observability on the hierarchical decentralized supervisory control are investigated and relevant conditions are proposed to ensure such hierarchical consistencies.