control for the speed control of medium speed diesel engines is designed. And a set of experiments are carried out to confirm the effectiveness of the proposed control system with dedicated system implemented by Intel 80C196KC micro processor to Daewoo-MAN 6cyl. 1800[rpm] diesel engine driving 3[ψ], 220[V], 250[Kw] generator.

69. A Study on the Development of a Sunlight Collection System Using a Sensor Array Technique

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Nowadays, concerns about the discovery and the development of alternative energies are increased day by day, and naturally researches on the development of alternative energies are reported in every country of the world. Moreover, it is very important to find alternative energies in this country which has little resources. There are many types of energies which belong to alternative energy, such as solar energy, wave energy. wind energy, and so forth. Solar energy is one of the most attractive alternative energies for the future because it is clean, consistently supplied, and widely distributed throughout the earth. Especially, it has high potential to be used in this country which has much better daylights a year. By the way, the density of the solar energy is too low to use the solar energy directly. In order to use it effectively it must be needed to comprise a system to collect the sunlight. To comprise the sunlight collection system, first of all, a solar tracking system is necessary to track the sun during daylighting.

This thesis describes a sunlight collection system during daylighting which comprises a solar tracking element, sunlight collection element, and sunlight transmitting element. The most important element of them is the solar tracking element and this thesis proposes a new type solar tracking system which uses a full sensor method with a two-axis sensor array. And it also develops an algorithm which operates the overall system effectively. Especially, an algorithm called holding mode algorithm is developed to reduce the execution time for the real time tracking.

The developed system has the characteristic that it is applicable the place where the mounted base is moved or where the orientation is changed with time. Because the suggested solar tracking system tracks the sun only using the two-axis sensor array regardless of the information of the position.