Editorial

We bring the second issue of the thirteenth volume of the Transactions on Machine Design with the following described research.

Enterprises should actively respond to national environmental protection policies, change traditional design methods, and adopt new energy-saving and environmentally friendly green building concepts. Realizing this fact, the author in the opening paper, "**Application of Green Building Design Concept in Architectural Design under Data Mining**," studied the green building design concept and verified its application in architectural design using data mining technology. The author employed Building Information Modeling for green building design.

In the second paper, "**Study on the Motion Characteristics of Cylinders in Sandy Environments**", the author analysed the motion characteristics of cylinders in sandy environments, particularly focusing on the distance required for a cylinder to roll and eventually stop in the sand. A simple device is designed to simulate the process of a cylinder rolling down a slope and in to the sand, and the rolling distance of the cylinder in the sand is recorded. The experiment employs a controlled variable method to test cylinders of different lengths and diameters under the same conditions such as initial height, and sand particle size. The experimental results found that the rolling distance of a cylinder in the sand is positively correlated with both its length and diameter.

In the last paper, "**Initial Study on a Mechanical Starting Mechanism for Two-Stroke Free Piston Engine**", the author proposed a dual two-stroke FPE model using gasoline fuel and spark ignition. The simulation results indicate a starting compression ratio of 3.3, fuel injection of 3 mg, and a combustion duration of 2 ms to 5 ms; under these conditions, the FPE can ignite. The FPE model then transitioned to continuous operation over several cycles with peak cylinder pressures.

We hope these papers generate interest among the machine design users.

Editors