

Foreword and Editorial

International Journal of Computer-aided Mechanical Design and Implementation (IJCMDI)

We are very happy to publish this issue of an International Journal of Computer-aided Mechanical Design and Implementation by Global Vision Press.

This issue contains 1 article. Achieving such a high quality of papers would have been impossible without the huge work that was undertaken by the Editorial Board members and External Reviewers. We take this opportunity to thank them for their great support and cooperation.

In the paper “A Basic Study on Development of Movable Light-Shelf System with a built-in PV”, the constant increase of energy consumption in the building sector is causing many problems such as global warming. In particular, as the consumption of lighting energy is second to only cooling and heating, a wide variety of research and technology development is being performed to resolve this problem. The light-shelf is a type of natural daylighting system that introduces outdoor natural light deep into the room, and various studies have been carried out in recognition of its efficiency. In particular, a previous study that combined a PV with a light-shelf was significant in terms of producing energy through the light-shelf. However, the previous study introduced the case in which the integrated PV and light-shelves attached the PV to the reflector of the light-shelf. In this way, the light-shelf and the PV operated at the same angle, which resulted in low daylighting and concentration efficiency. Therefore, the purpose of this study is to propose a movable light-shelf system with a built-in PV which operates at independent angles. The conclusions are as follows. The light-shelf system with a built-in PV proposed in this study consists of a structure where the light-shelf is installed at the bottom with the PV on top. In particular, the upper section has a hole to allow natural light to flow into the light-shelf at the bottom for daylighting. In addition, we enhanced the effectiveness of this study by suggesting control measures to operate the light-shelf system with a built-in PV. However, this study has limitations as it did not evaluate the performance of the light-shelf system with a built-in PV. Therefore, additional studies need to be performed in the future to evaluate and verify the performance.

December 2019

**Editors of the December Issue on
International Journal of Computer-aided Mechanical Design and Implementation**

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