

C6

Time : 3:30 ~ 3:45

Room : 259

Design of Solar Lighting System to achieve uniform illumination over fiber-bundle

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In active daylighting schemes, optical fiber plays an important role to transmit sunlight in the interior with high efficiency. Traditional fiber-based daylighting systems were not able to attain uniform illumination over the fiber-bundle. We propose a method for achieving collimated light, which illuminates the fiber-bundle uniformly. Light is collected and focused toward a collimating lens through a parabolic concentrator. Collimating lens distributes light in each optical fiber uniformly. An optics diffusing structure is used in the interior to spread the light through the fiber-bundle. The results clearly reveal that the efficiency in terms of uniform illumination, which also reduces the heat problem for optical fibers, is improved. Finally, the proposed solar lighting system will turn out convenient in terms of energy saving and reduction in greenhouse gas emissions.
