

Submission Summary

Conference Name

26th International Conference on Computer and Information Technology

Paper ID

310

Paper Title

Blue-Light Blocking Glasses Using Machine Learning

Abstract

The objective of short-wavelength ("blue") light-filtering lenses is to enhance physiological wellness and sleep. While UV filters are commonly used, there is limited information about their relative effectiveness in reducing exposure to blue light while preserving visibility. Five light sources were utilized to test fifty standard lenses: the sun, a fluorescent ceiling luminaire, an incandescent lamp, and a blue LED array. To calculate the percentage of transmission, absolute irradiance was measured at baseline and for each lens across the visible spectrum (380-780 nm). Additionally, transmission specificity was evaluated to determine whether light transmission was primarily non-proficient (380-454 nm and 561-780 nm) or circadian-proficient (455-560 nm). Lenses were grouped by tint, and metrics were compared between the groups. Red-tinted lenses transmitted the least amount of circadian-efficient light. In this paper, our focus was on studying the various properties of blue blockers across different lighting conditions and investigating patterns that could have potentially assisted future users of blue blockers effectively through different findings.

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Primary Subject Area

Deep Learning/Machine Learning

Submission Files

Blue-Light Blocking Glasses Using Machine Learning_ICCIT.pdf (479.9 Kb, 9/5/2023, 1:14:29 PM)