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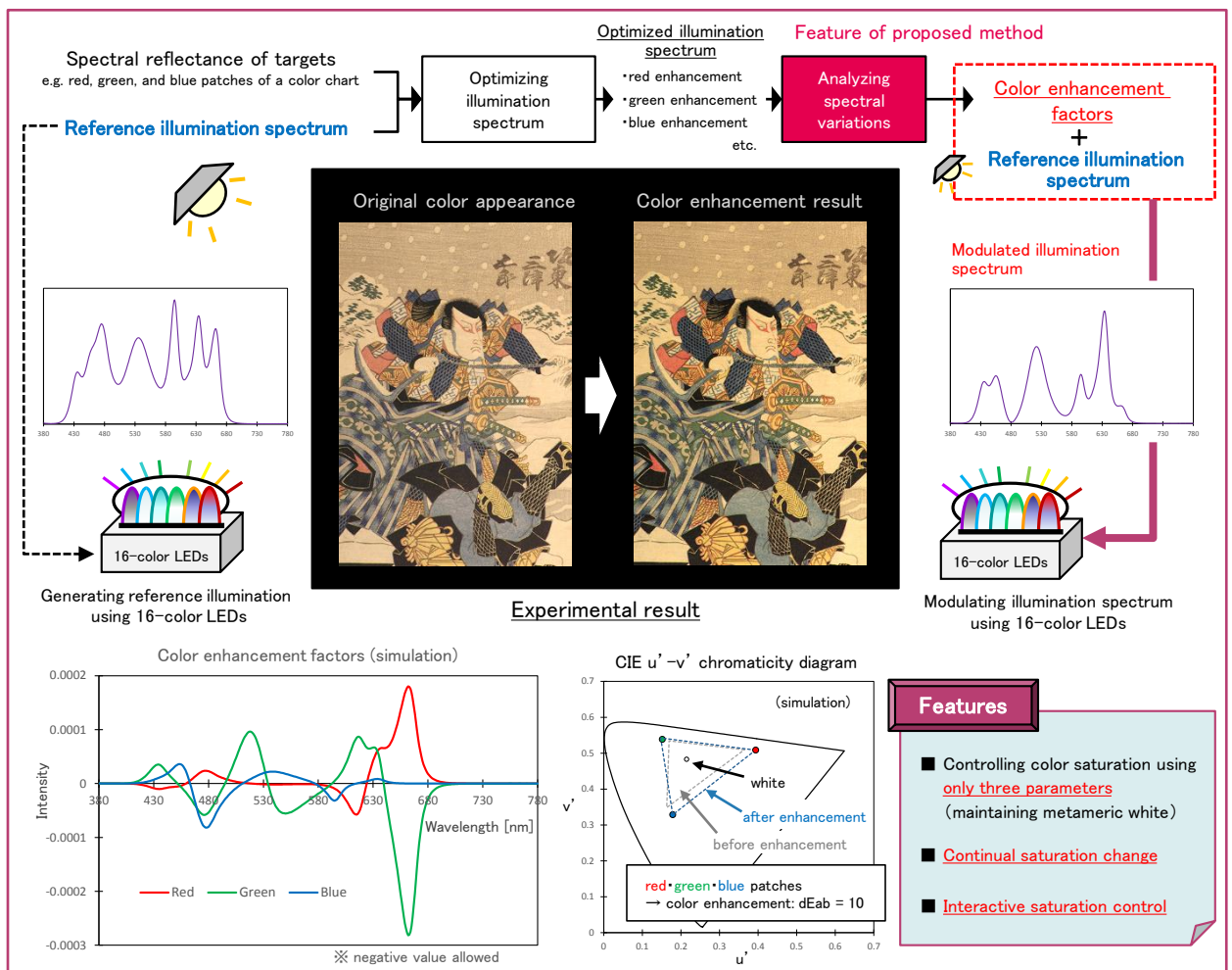
Illumination-based color saturation control

- Spectral operation using color enhancement factors -



Abstract

We introduced **color enhancement factors** to control the spectral power distribution of illumination, which enabled us to **enhance one or several colors at once while maintaining the color appearance of white**. In experiments, three color enhancement factors corresponding to red, green, and blue were calculated using color patches on a color chart and employed for controlling a sixteen-color LED lighting system. The color chart and **old discolored wood-block printings** were illuminated by the modulated light from the lighting system. Each color was continuously and independently enhanced by **changing just three parameters** while preserving **metameric white** and the **color balance** in daylight.



References

- [1] M. Tsuchida, K. Hiramatsu, K. Kashino, "Designing Spectral Power Distribution of Illumination with Color Chart to Enhance Color Saturation," in *Proc. IS&T 24th Color and Imaging conference (CIC24)*, pp. 278-282, 2016.
- [2] M. Tsuchida, K. Hiramatsu, K. Kashino, "Color Enhancement by Optimizing the Illumination Spectrum," *NTT Technical Review*, Vol. 16 No. 1, 2018, <https://www.ntt-review.jp/archive/ntttechnical.php?contents=ntr201801ra1.html>

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