

## Seminar

### COLOUR QUALITY OF LED LIGHTING

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#### Summary

Current criteria for the evaluation of indoor lighting are based on the  $V(\lambda)$  function that results in photometric parameters like luminous efficacy, luminance or illuminance and descriptors of related phenomena such as glare or visual acuity. With the development of high-efficient LED illuminating systems that consist of multi-colour and white LEDs, the aspects of colour quality and human centric lighting are now in the focus of current lighting research. This workshop contains lectures and discussions on the fundamental aspects of intercultural colour preference of German and Chinese observers for LED illumination with variable CCT between 2700 K and 6500 K and with high colour rendering indices, on the mechanisms of colour discrimination, the optimization of LED spectra to specific painting colours specially measured in the Sistine Chapel in Vatican City. A current intensively discussed subject of today's LED lighting industry will also be tackled: how can the balance between colour fidelity and colour gamut as well as the white point be optimized by using the flexible spectra of a multi-LED light engine? The similar concept is to optimise LED spectrum to develop a colour discrimination index for showing the texture details. Finally, regarding to a lack of UV in the LED white lights, is whiteness another lighting quality measure? The aim of the workshop is to help participants create suitable lighting concepts and design optimal LED spectra.