

### Advanced optical design for multicolored LED systems for lighting applications

Chakrabarti, Maumita

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Advanced optical design for multicolored LED systems for lighting applications Maumita Chakrabarti Ph.D Student (01.01.13 - 31.12.15) macha@fotonik.dtu.dk Department of Photonics Engineering Supervisor :Carsten Dam-Hansen, Co-supervisor: Paul Michael Petersen



# LED illumination of the Danish Royal Treasures at Rosenborg Castle

We have optimized and optically modeled the Rosenborg LED system to discover angular distribution in terms of intensity and measured the tristimulus value for color mixing. We have also experimentally proved the system by color correlated temperature (CCT) tuning from 2000 K to 2400 K. Rosenborg system is a high light quality, energy efficient (> 30 Im / W) LED system and has been implemented at Rosenborg Castle with three colored LEDs. By color mixing of the LEDS, 2200 K CCT was achieved with color rendering index (CRI) above 90 and rendering the blue background perfectly.







Renders the blue background

The Rosenborg LED lighting system illuminates the gold treasures with a high light quality and saves the energy better than that of the incandescent lighting system.



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## Multi color high power LED engine

We are developing a new LED-based light engine that will take the LED technology into the future of professional lighting. By meeting the entertainment industry's critical demands for color gamut, color rendering of white light and intensity, the light engine will finally enable a revolutionary replacement of the energy consuming halogen based light sources in professional lighting.

