FH MÜNSTER
University of Applied Sciences

Institut für
Optische Technologien

Das Institut für Optische Technologien lädt ein zum Kolloquiumsvortrag

Prof. Dr. Michael Bredol
Prof. Dr. Thomas Jüstel
Prof. Dr. Ulrich Kynast
Prof. Dr. Konrad Mertens
Dr. Stephanie Möller
Prof. Dr. Ulrich Wittrock

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Red Emitting Phosphors – Quo Vaditis?

Dr. Thomas Jansen
Litec-LLL GmbH (Merck Group), Greifswald

Since the commercialization of $K_2SiF_6:Mn^{4+}$, Manganese activated phosphors are considered as suitable red emitting luminescent materials for obtaining phosphor converted light emitting diodes. A shortcoming of Mn^{4+} comprising phosphors, mainly in fluorides, are their low photochemical and thermal stability due to the degradation. A way to circumvent this bottleneck is the use of Mn^{4+} activated oxide compounds. Unfortunately, this red-shifts the photoluminescence towards the 650 to 700 nm range, which is much less suitable for lighting applications. Therefore, current research on Mn^{4+} activated LED phosphors deals with the stabilization of $K_2SiF_6:Mn^{4+}$ and on the finding of novel Mn^{4+} activated fluorides with better thermal as well as photochemical stability.

This work concerns the synthesis, photoluminescence, and thermal quenching behavior of Mn^{4+} in several oxide and fluoride compounds comprising octahedral sites suitable for the incorporation of Mn^{4+}. In addition to the use of Mn^{4+} phosphors for general lighting, applications in display backlighting and agriculture lighting will also be discussed. Finally, other possible solutions of narrow band red emitters will be compared.

Einladender: Prof. Dr. Thomas Jüstel

Ort:
Raum D 145
(Gebäudeteil D, Parkplatz P3)
Stegerwaldstraße 39
48565 Steinfurt

Datum:
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www.fh-muenster.de/iot/kolloquium_iot.php

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