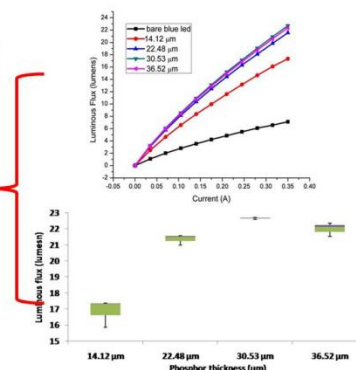
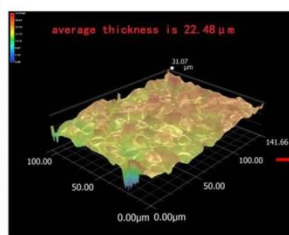


Two Recent articles on Reliability from the Center of Reliability Science and Technologies, Chang Gung University, Taiwan

Physical Limitations of Phosphor layer thickness and concentration for White LEDs

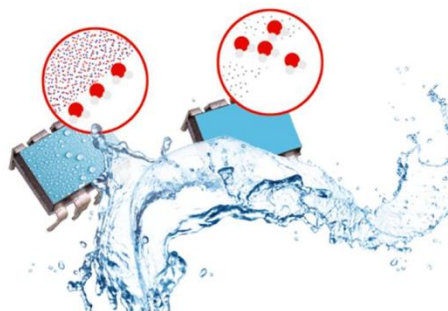
In this work, we found that increasing the phosphor layer thickness and concentration can increase its temperature, and there is also a maximum thickness and concentration beyond which their increase will not lead to lumen increase, but only temperature increase. Higher thickness and higher concentration also results in warm light instead of White light. The maximum thickness and concentration are found to be limited by the scattering of light rays with higher % decrease of blue light rays than the yellow light rays. The results obtained in this work can also be used to compute the temperature and thermo-mechanical stress distribution of an encapsulated LED, demonstrating its usefulness to the design of encapsulated LED packages. Simulation software like ANSYS and TracePro are used extensively to verify the root cause mechanisms.



Tan, Cher Ming, Preetpal Singh, Wenyu Zhao, and Hao-Chung Kuo. "Physical Limitations of Phosphor layer thickness and concentration for White LEDs." *Scientific reports* 8, no. 1 (2018): 1-14. (I.F: 4.122)

Moisture resistance evaluation on single electronic package moulding compound

Non-destructive evaluation indices that correlate with the moisture resistance of integrated circuit packages are developed. These indices are developed from detailed studies on the functional groups in a moulding compound, and their effectiveness is verified experimentally. With these indices, one can ensure the moisture resistance of an individual package without the need for the standard humidity tests which require long test durations on a limited number of samples where extrapolation with statistical uncertainty will be present.



Tan, C. M., Narula, U., Seow, G. L., Sangwan, V., Chen, C. H., Lin, S. P., & Chen, J. Y. (2020). Moisture resistance evaluation on single electronic package moulding compound. *Journal of Materials Chemistry C*. (I.F: 6.641)