



From the LDM Division Chair

by Uwe Happek

The Luminescence and Display Division (LDM), formed only in 1993 (a rather “young” group relative to many of the “classic” ECS Divisions), provides a forum for all aspects of light-emitting processes and techniques for their implementation. Naturally, there have been hot topics that have dominated our sessions in the past, but thanks to the broad background of our member base, speakers will always find an interested audience, and we invite everybody to present a talk on the luminescence of a material or device, or even on the absence of it.


Currently, energy conservation, and its relation to politics, energy dependence, and global warming is (literally) a hot topic, and no respectable scenario for energy security or reduction of greenhouse gases has been offered that does not stress the importance of energy savings. This is where LDM enters the picture: 8% of the energy consumed in the United States is used for lighting. Considering that about half the energy is used by inefficient incandescent light bulbs, which can, and should, be replaced by lamps that are more than five times as efficient, luminescent devices can readily provide a >3% reduction in U.S. energy consumption, accompanied by a similar reduction in pollution, greenhouse gases, and costs.

Based on these numbers, we found it timely to dedicate two articles to novel developments in the generation of lighting. Anant Setlur writes about LED-based solid state lighting and Joseph Shiang gives an overview on OLEDs. In these articles, the term efficacy or the abbreviation lm/W will show up quite often; thus I will give a short introduction into these and other relevant metrics in my Chalkboard column. Changing gears, Jorma Hölsä talks about progress in the field of persistent phosphors, an intriguing process from a fundamental point of view that has many applications.

The issue of energy efficiency will be with us for quite some time, and we offer a dedicated session with the title “Lighting and Energy Efficiency” at the 2010 ECS fall meeting in Las Vegas. There we invite not only research in the field of solid-state lighting, but included are also (but not limited to) contributions on cathodoluminescence and quantum cutting, both for lighting application and solar cell coatings.

Our Division is organizing the “Tutorial in Nanotechnology: Focus on Luminescence and Display Materials” at the ECS Las Vegas meeting. This is traditionally an “invited only” symposium and we are currently assembling a list of speakers who will give us an update of the impact of luminescent nanoparticles and structures.

If your research does not fit into these symposia, try our traditional forum on “Physics and Chemistry of Luminescent and Display Materials.”

See you in Las Vegas! 

About the Author

UWE HAPPEK is Professor of Physics in the Department of Physics and Astronomy at The University of Georgia. Prior to his move to Georgia, he spent five years in the Laboratory of Atomic and Solid State Physics at Cornell University as a post-doc/research scientist. He is a recipient of the Feodor Lynen Fellowship (Alexander von Humboldt Society), the Erskine Fellowship (University of Canterbury, NZ), and the UGA Creative Research Medal. In the L&DM Division he has served as Treasurer, Vice-Chair, and most recently as the Division Chair. His research interests cover many aspects of condensed matter physics, and his preferred experimental technique is optical spectroscopy, from mm-waves to the ultraviolet. He may be reached at uhappek@hal.physast.uga.edu.