

Press Release

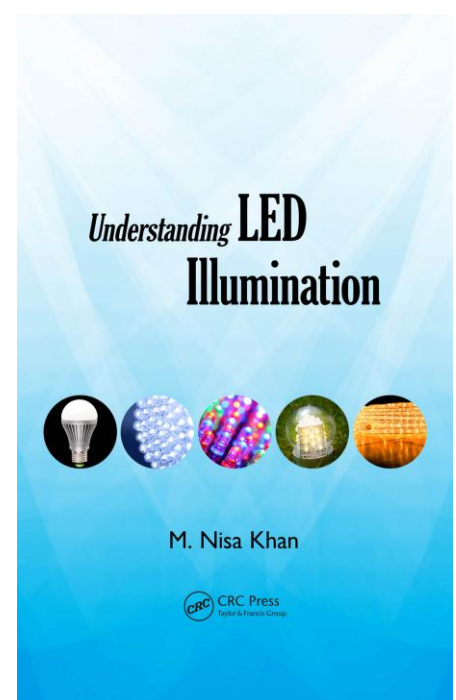
New book addresses the science of LEDs to drive next generation lighting technology

While electric light bulbs have changed the world enormously in the past hundred years, their impact still has not reached many parts of the world in large part because of cost in many poor countries. Light-emitting diode (LED) technology has the promise of revolutionizing the lighting industry by lowering energy consumption, increasing lifetime, reducing size, and improving reliability. This book provides an in-depth introduction to fundamentals and practical aspects of LED lamp design. It teaches the reader the principles of large-space and 3D object illumination for developing competitive LED lamps. The author presents design and simulation requirements for LED lamps with real examples that demonstrate how to make more energy efficient and higher quality lamps. Readers will become familiar with lamp output metrics and characterization methods, which are then applied to prototype lamps for comparison. Light generation, efficiency, theoretical limits, efficiency limiting factors, and LED lamp design elements ("color" quality, color rendering, color temperature, color and intensity variation and mixing) are among the topics covered in this much needed, timely new resource.

As pointed out by the author, "we have an opportunity to save a great deal of energy by switching to LED lights because they are more efficient and can run both on and off the costly electric grid. But understanding LED lamps and making good choices to illuminate our environment require some background, which this book offers by connecting science with society, art, and human psychology."

Readers involved in any aspect of lighting technology, from research to industrialization, sales and marketing will find this book an indispensable, practical resource.

M. Nisa Khan received her bachelor's degree in physics and mathematics from Macalester College in St. Paul, Minnesota, and her master's and Ph.D. degrees in electrical engineering from the University of Minnesota, Minneapolis, USA. During her studies, she worked at Honeywell Solid State Research Center in Bloomington, Minnesota. After completing her doctorate, she was at AT&T Bell Laboratories' (now Alcatel Lucent) Photonics Research Laboratory at Crawford Hill doing pioneering work on 40-Gb/s optoelectronic and integrated photonic devices, and in 2006 started an independent research and engineering company on LED lighting which performs feasibility studies for LED lighting used in entertainment and signage industries, and offers platform design and development solutions for general lighting applications.



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