



Article Side

LED Lighting Technology for Reducing Energy Consumption: an Overview by [Jessica Williams](#)

Article published on December 3rd 2011 | [Technology](#)

Lighting technology has been witnessing a new revolution with the emergence of lighting devices based on semi conductor chips, also known as Light Emitting Diodes (LEDs). Few decades back, LED technology was used only for indicator applications, such as lighting signal that we see in electrical iron. However, with the progress in LED technology in the 1980s, new vistas have opened. Particular breakthrough was the invention of blue LEDs. Using phosphors, new methods are developed to combine red, green, and blue LEDs. Researches by lighting engineers at US-based Cree and Australia-based Valen Light Technologies are particularly noteworthy. Valen Light is also focused on developing semiconductor materials that use organic material carbon.

Although first Light Emitting Polymers (LEP) was developed in the 1990s, yet applied use of them for practical purposes has so far been limited. Polymers are malleable and can be altered to different shapes. It is predicted that synchronization of LED and LEP lighting can find uses in much more diverse applications going forward. Valen Light has developed a rich set of quantitative methods for optical and thermal modeling and simulation. Optical design also has an important function in enhancing the LED efficiency. For lighting engineers working on LED products, how well light is re-directed out of the active layers is an ongoing challenge.

At Valen Light, improving EQE (External Quantum Efficiency) is an ongoing challenge for lighting engineers. EQE is the ratio of numbers of photons emitted from the LED to numbers of electrons entering the device: it shows how well the device is in converting electrons to photons.

Today, LED light bulbs are increasingly used for street lighting, building lighting, monumental lighting, and canopy lighting among others. Latest LED lighting products are made from cutting-edge PMMA lens (the secondary optic), leading to optical efficiency of around 90 per cent. Cree LED's niche is that it uses semiconductor materials based on silicon carbide, gallium nitride, and other such related compounds.

Solar and LED-based lights can pave the way for massive reduction in oil consumption worldwide. It is estimated that light bulbs deployed in shelter and street lighting utilizes about 19 per cent of electricity generated worldwide in a year. Therefore, it is pertinent that LED light bulbs along with other LED devices are encouraged to be developed by the state. LED lights consume three to four times less energy than incandescent bulbs.

Article Source:

<http://www.articleside.com/technology-articles/led-lighting-technology-for-reducing-energy-consumption-an-overview.htm> - [Article Side](#)

[Jessica Williams](#) - About Author:

Valen Light Technologies manufactures advanced luminaries to optimize lighting performance and reduce energy consumption. Our use of Cree's [LED outdoor lighting](#) technology coupled with our unique optics delivers unparalleled light output that ensures maximum light spread and uniformity. Why not visit us now at [valenlight.com](http://www.valenlight.com) to know more about Valen Light initiatives in building a greener planet. For more information please visit: <http://www.valenlight.com/>

Article Keywords:
led light bulbs, led outdoor lighting

You can find more [free articles](#) on [Article Side](#). Sign up today and share your knowledge to the community! It is completely FREE!