SSUN ENERGY SUMMER SCHOOL

PUBLIC LECTURE

Light Emitting Diodes (LEDs)

HUGE IMPACT FOR SAVING ENERGY

Light emitting diodes (LEDs) and laser diodes (LDs) are the ultimate lighting source. In the 1980s, the blue was a missing colour in the field of LEDs and LDs. If the blue colour were available for the LEDs and LDs, people could make any colour, including white, for applications such as displays, lighting, and others. The high efficiency of blue LEDs and white LEDs would save significant energy and resources. Basically, the LEDs take electrical energy and converts it to bright blue and white light. The light generation is very energy efficient (50%), which is much better than a normal incandescent bulb (5%). The U.S. Department of Energy estimates that up to $98 billion USD in energy costs could be saved by 2020 if we switch to solid state lighting. This would reduce the associated greenhouse gas emission, therefore it could reduce global warming effects dramatically.

Shuji Nakamura

Professor, Materials Science, UC Santa Barbara

& Inventor of the Blue LED Light

August 26, 2009, 7pm

SLAC Campus/Panofsky Auditorium

2575 Sand Hill Road

Menlo Park, CA

SIMES GCEP Precourt Institute for Energy NREL