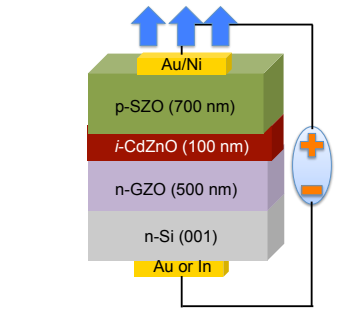
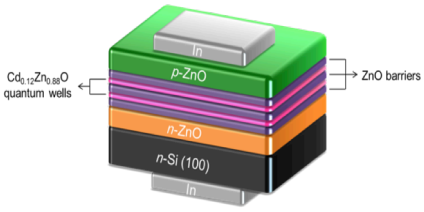
Innovation in Cost-effective Energy Research at IIT Indore





Today, our nation is facing the vital challenges of rejuvenating our economy, strengthening our energy security, and reducing greenhouse gas emissions. Solid-state lighting (SSL) in terms of meeting cost-effective and environment-friendly white light emissions is an emerging technology with the potential to address all three of these challenges. SSL will mean greener homes and businesses that use substantially less electricity, making them less dependent on fossil fuels.

Amongst other SSLs, **blue light emitting diodes (LEDs)** based on ZnO materials are critically significant in terms of realizing white luminescence with the highest ***luminous efficacy*** and ***color rendering index***, while rendering the ***cost/efficiency value reduced substantially***. Researchers of **Hybrid Nanodevice Research Group (HNRG), led by Dr. Shaibal Mukherjee** in Electrical Engineering at IIT Indore have recently demonstrated, ***for the first time in the world***, dual ion beam sputtering (DIBS)-grown ZnO double-heterojunction and multiple-quantum well (MQW)-based **BLUE LEDs** operating at room temperature. The achievement is remarkable also considering the fact that the fabrication of such bright blue LED has been accomplished **outside any industrial-grade CLEANROOM environment**.

For more information, one may visit HNRG website available at: http://iiti.ac.in/people/~shaibal/