

## DOE Solid-State Lighting Portfolio

# Solid-State Lighting Patents Submitted as a Result of DOE-Funded Projects

As of January 2008, a total of eighteen solid-state lighting (SSL) patents have been granted as a result of Department of Energy-funded research projects. This demonstrates the value of DOE SSL projects to private companies and notable progress toward commercialization. Since DOE began funding SSL research projects in 2000, a total of 71 patent applications have been applied for or awarded as follows: large businesses – 40; small businesses – 15; universities – 13; and national laboratories – 3.

Organization	Title of Patent Application (Bold title indicates granted patent)
<b>Agiltron, Inc.</b>	Two patent applications filed.
<b>Boston University</b>	Formation of Textured III-Nitride Templates for the Fabrication of Efficient Optical Devices Formation of Textured III-Nitride Templates for the Fabrication of Efficient Optical Devices Nitride LEDs Based on Flat and Wrinkled Quantum Wells Optical Devices Featuring Textured Semiconductor Layers
<b>Cree, Inc.</b>	<b>Light Emitting Diode with Porous SiC Substrate and Method for Fabricating</b> Light Emitting Diode with High Aspect Ratio Sub-Micron Roughness for Light Extraction and Methods of Forming Two other patent applications filed.
<b>Eastman Kodak</b>	Five patent applications filed.
<b>Fairfield Crystal Technology</b>	Method and Apparatus for Aluminum Nitride Monocrystal Boule Growth
<b>GE Global Research</b>	<b>Light-Emitting Device with Organic Electroluminescent Material and Photoluminescent Materials</b> <b>Luminaire for Light Extraction from a Flat Light Source</b> <b>Mechanically Flexible Organic Electroluminescent Device with Directional Light Emission</b> <b>Organic Electroluminescent Devices and Method for Improving Energy Efficiency and Optical Stability Thereof</b> <b>Series Connected OLED Structure and Fabrication Method</b> <b>Organic Electroluminescent Devices Having Improved Light Extraction</b> Electrodes Mitigating Effects of Defects in Organic Electronic Devices Hybrid Electroluminescent Devices OLED Area Illumination Source Eight other patent applications filed.
<b>Georgia Tech Research Corporation</b>	One patent application filed.



**U.S. Department of Energy**  
**Energy Efficiency and Renewable Energy**

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

<b>International Technology Exchange</b>	One patent application filed.
<b>Light Prescriptions Innovators</b>	<b>Optical Manifold for Light-Emitting Diodes</b> Optical Manifold for Light-Emitting Diodes Two other patent applications filed.
<b>Maxdem Incorporated</b>	Polymer Matrix Electroluminescent Materials and Devices
<b>Nanosys</b>	Nanocrystal Doped Matrices
<b>OSRAM Opto Semiconductors, Inc.</b>	<b>Integrated Fuses for OLED Lighting Device</b> Novel Method to Generate High Efficient Devices, Which Emit High Quality Light for Illumination Novel Method to Generate High Efficient Devices, Which Emit High Quality Light for Illumination OLED with Phosphors Polymer and Small Molecule Based Hybrid Light Source Polymer Small Molecule Based Hybrid Light Source
<b>Pacific Northwest National Laboratory</b>	Organic Materials with Phosphine Sulphide Moieties having Tunable Electric and Electroluminescent Properties Organic Materials with Tunable Electric and Electroluminescent Properties
<b>Philips Electronics North America</b>	High Color-Rendering-Index LED Lighting Source using LEDs from Multiple Wavelength Bins Three other patent applications filed.
<b>PhosphorTech Corporation</b>	<b>Light Emitting Device having Selenium-Based Fluorescent Phosphor</b> <b>Light Emitting Device having Silicate Fluorescent Phosphor</b> <b>Light Emitting Device having Sulfoselenide Fluorescent Phosphor</b> <b>Light Emitting Device having Thio-Selenide Fluorescent Phosphor</b>
<b>Sandia National Laboratory</b>	<b>Cantilever Epitaxial Process</b>
<b>Universal Display Corporation</b>	<b>Binuclear Compounds</b> <b>Organic Light Emitting Device Structure for Obtaining Chromaticity Stability</b> <b>Organic Light Emitting Device Structure for Obtaining Chromaticity Stability</b> Stacked OLEDs with a Reflective Conductive Layer One other patent application filed.
<b>University of California, San Diego</b>	One patent application filed.
<b>University of California, Santa Barbara</b>	<b>Plasmon Assisted Enhancement of Organic Optoelectronic Devices</b> Silicone Resin Encapsulants for Light Emitting Diodes Four other patent applications filed.
<b>University of Southern California</b>	Fluorescent Filtered Electrophosphorescence