



Solid-State Lighting Patents Resulting from DOE-Funded Projects

As of December 2008, 22 solid-state lighting (SSL) patents have been awarded to research projects funded by the U.S. Department of Energy (DOE). This achievement demonstrates the value of DOE SSL projects to private companies and indicates notable progress toward commercialization. Since December 2000, when DOE began funding SSL research projects, a total of 90 patent applications have been submitted, ranging from large businesses (44) and small businesses (16) to universities (26) and national laboratories (4). The table below provides specific patent information.

Primary Research Organization	Title and/or Number of Patent Applications (Titles in bold indicate patents that were granted.)
Agiltron, Inc.	Two patent applications filed.
Boston University	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
Cree, Inc.	Light Emitting Diode with Porous SiC Substrate and Method for Fabricating Light Emitting Diode with High Aspect Ratio Sub-Micron Roughness for Light Extraction and Methods of Forming Light emitting diode with high aspect ratio submicron roughness for light extraction and methods of forming Light emitting diode package element with internal meniscus for bubble free lens placement One other patent application filed.
Dow Corning	Four patent applications filed.
Eastman Kodak	Ex-Situ Doped Semiconductor Transport Layer Doped Nanoparticle-Based Semiconductor Junction Three other patent applications filed.
Fairfield Crystal Technology	Method and Apparatus for Aluminum Nitride Monocrystal Boule Growth
GE Global Research	Light-Emitting Device with Organic Electroluminescent Material and Photoluminescent Materials Luminaire for Light Extraction from a Flat Light Source Mechanically Flexible Organic Electroluminescent Device with Directional Light Emission Organic Electroluminescent Devices and Method for Improving Energy Efficiency and Optical Stability Thereof Series Connected OLED Structure and Fabrication Method Organic Electroluminescent Devices Having Improved Light Extraction Electrodes Mitigating Effects of Defects in Organic Electronic Devices Hybrid Electroluminescent Devices OLED Area Illumination Source Eight other patent applications filed.
Georgia Tech Research Corporation	One patent application filed.

International Technology Exchange	One patent application filed.
Light Prescriptions Innovators	Optical Manifold for Light-Emitting Diodes Optical Manifold for Light-Emitting Diodes Two other patent applications filed.
Maxdem Incorporated	Polymer Matrix Electroluminescent Materials and Devices
Nanosys	Nanocrystal Doped Matrices
OSRAM Opto Semiconductors, Inc.	Integrated Fuses for OLED Lighting Device 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
Pacific Northwest National Laboratory	Organic Materials with Phosphine Sulphide Moieties having Tunable Electric and Electroluminescent Properties Organic Materials with Tunable Electric and Electroluminescent Properties
Philips Electronics North America	High Color-Rendering-Index LED Lighting Source using LEDs from Multiple Wavelength Bins Three other patent applications filed.
PhosphorTech Corporation	Light Emitting Device Having Selenium-Based Fluorescent Phosphor Light Emitting Device Having Silicate Fluorescent Phosphor Light Emitting Device Having Sulfoselenide Fluorescent Phosphor Light Emitting Device Having Thio-Selenide Fluorescent Phosphor
Sandia National Laboratory	Cantilever Epitaxial Process One other patent application filed.
Universal Display Corporation	Binuclear Compounds Organic Light Emitting Device Structure for Obtaining Chromaticity Stability Organic Light Emitting Device Structure for Obtaining Chromaticity Stability Stacked OLEDs with a Reflective Conductive Layer One other patent application filed.
University of California, San Diego	Rare-earth activated nitrides for solid state lighting applications Two additional patent applications filed.
University of California, Santa Barbara	Plasmon Assisted Enhancement of Organic Optoelectronic Devices Silicone Resin Encapsulants for Light Emitting Diodes Five other patent applications filed.
University of North Texas	One patent application filed.
University of Southern California	Fluorescent Filtered Electrophosphorescence Fluorescent Filtered Electrophosphorescence OLEDs utilizing macrocyclic ligand systems Materials and architectures for efficient harvesting of singlet and triplet excitons for white light emitting OLEDs Organic vapor jet deposition using an exhaust Phenyl and fluorenyl substituted phenyl-pyrazole complexes of Ir Low Index Grids (LIG) to Increase Outcoupled Light From Top or Transparent OLED Three additional patent applications filed.

For more information on the DOE SSL Project Portfolio, see www.ssl.energy.gov/projects.html.

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