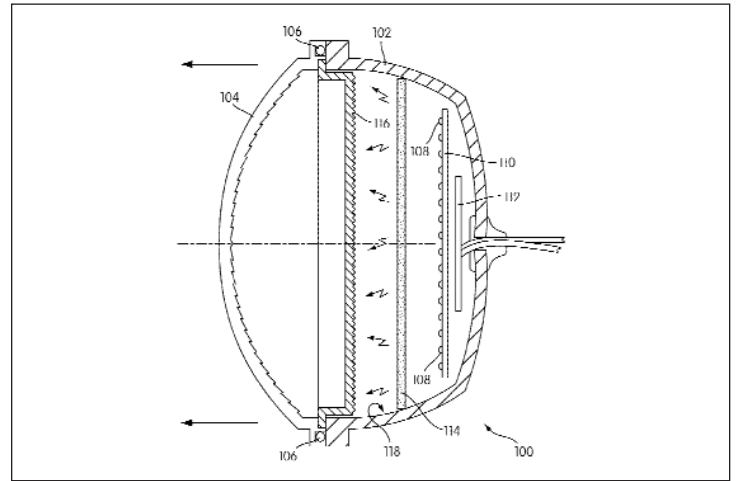


PATENTS

About Our Patents

Intematix Intellectual Property Leadership



Intematix' extensive intellectual property (IP) portfolio gives us competitive advantages in all of our product and application areas. Moreover, we are committed to continuously increase the strength of our patent portfolio by investing in research and development dedicated to advancing phosphor materials, remote phosphor, quantum dot and other important lighting materials, components, systems and applications. Our expertise includes: luminescent materials, light and color mixing, LED lighting assemblies and optics, displays and signs.

Patent Statistics

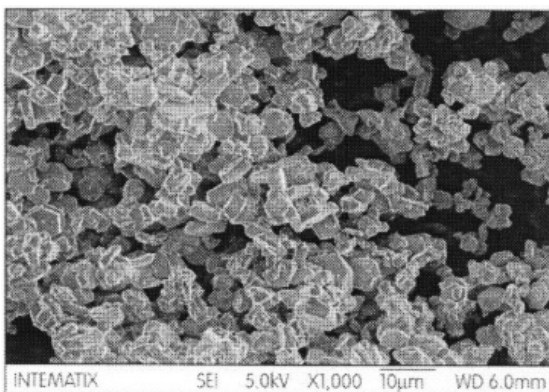
- Over 70 issued patents worldwide
- 48 issued US patents
- Over 270 pending patent applications
- Over 75 pending applications in the United States
- Filed in: Brazil, Canada, China, the European Union, Japan, Korea and the United States

Product & Technology Families

- Phosphor Materials
- Remote Phosphor Light Sources
- Light Emitting Diodes (LEDs)

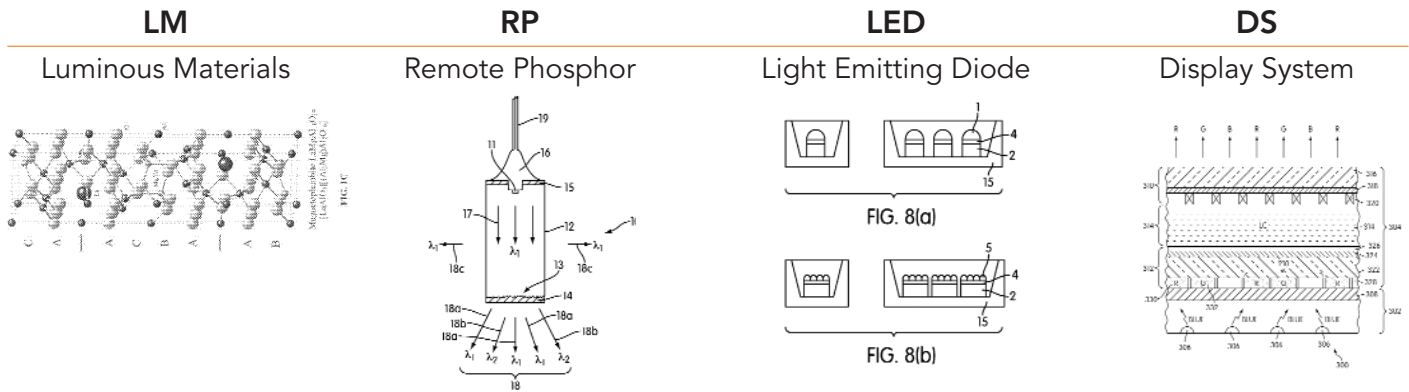
Lighting Applications

- Remote Phosphor
- Display Systems
- General Lighting
- Signage & Signals



The chart below shows a sampling of our issued patents and patent applications in phosphor, remote phosphor, display and lighting technology—and illustrates our strength and leadership in these markets. In addition to the below we have extensive IP and technology licensing rights worldwide.

Field Key



US Patent Collection – Phosphor, Remote Phosphor & LEDs

Field	No.	Title
RP	7,972,030	Light emitting diode (LED) based lighting systems
RP	7,937,865	Light emitting sign and display surface therefor
LM	7,922,937	Two-phase silicate-based yellow phosphor
RP	7,915,627	Light emitting device with phosphor wavelength conversion
LM	7,906,041	Silicate-based green phosphors in red-green-blue (RGB) backlighting and white illumination systems
LED	7,887,719	Phosphor systems for a white light emitting diode (LED)
RP	7,883,226	LED signal lamp
DS	7,845,839	Light emitting display
LM	7,820,075	Phosphor composition with self-adjusting chromaticity
LM	7,755,276	Aluminate-based green phosphors
LM	7,754,656	Production of nano-powder based combinatorial libraries
LED	7,737,636	LED assembly with an LED and adjacent lens and method of making same
LM	7,736,536	Compositions comprising a mixture of a BAM phosphor and at least one other hexaaluminate
RP	7,703,943	Color tunable light source
LM	7,655,156	Silicate-based orange phosphors
LM	7,648,650	Aluminum-silicate based orange-red phosphors with mixed divalent and trivalent cations
LM	7,601,276	Two-phase silicate-based yellow phosphor
LM	7,575,697	Silicate-based green phosphors
DS	7,541,728	Display device with aluminate-based green phosphors
LM	7,399,428	Compositions comprising high light-output yellow phosphors and their methods of preparation
LM	7,390,437	Aluminate-based blue phosphors
DS	7,388,813	Time display device
LM	7,311,858	Silicate-based yellow-green phosphors
DS	7,307,920	Timer display device having light generating module with circular arrangement
LED	7,267,787	Phosphor systems for a white light emitting diode (LED)

Patents continued on next page.

US Patent Applications – Phosphor, Remote Phosphor & LEDs

Field	No.	Title
LED	20110084296	Light Emitting Diode and Manufacturing Method Thereof
LED	20110058353	LED-Based Lamps
LM	20110037380	Phosphor Composition With Self-adjusting Chromaticity
RP	20100321919	LED Based Lamp And Light Emitting Signage
LM	20100308712	Nitride-based Red-emitting Phosphors In Rgb Red-green-blue Lighting Systems
LED	20100295079	Manufacture Of Light Emitting Devices With Phosphor Wavelength Conversion
LED	20100295078	Manufacture Of Light Emitting Devices With Phosphor Wavelength Conversion
LED	20100295077	Manufacture Of Light Emitting Devices With Phosphor Wavelength Conversion
LED	20100295070	Light Emitting Device
LED	20100237760	LED Based Lamp
RP	20100188867	Light Emitting Diode Lighting System
RP	20100188839	Light Emitting Diode Lighting System
LED	20100181582	Light Emitting Devices With Phosphor Wavelength Conversion And Methods Of Manufacture Thereof
RP	20100164346	Light Emitting Device With Phosphor Wavelength Conversion
RP	20100102250	Phosphor Based Authentication System
RP	20100067217	LED Lighting Arrangement Including Light Emitting Phosphor
RP	20100067216	LED Lighting Arrangement Including Light Emitting Phosphor
RP	20100060130	Light Emitting Diode (LED) Lighting Device
RP	20100052560	Color Tunable Light Source
RP	20100027293	Light Emitting Panel
LM	20100019202	Two-phase Silicate-based Yellow Phosphor
LM	20090294731	Silicate-based Green Phosphors
LM	20090283721	Nitride-based Red Phosphors
RP	20090262516	Light Emitting Device With Phosphor Wavelength Conversion
LED	20090224652	Multiple-chip Excitation Systems For White Light Emitting Diodes (LEDs)
LED	20090171510	Method And System For Controlling LED With Power Line Carrier
DS	20090168398	Light Emitting Display
LED	20090134414	Light Emitting Device With Phosphor Wavelength Conversion And Methods Of Producing The Same
LED	20090117672	Light Emitting Devices With Phosphor Wavelength Conversion And Methods Of Fabrication Thereof
RP	20090101930	Light Emitting Device With Phosphor Wavelength Conversion
RP	20090086475	Color Tunable Light Emitting Device
RP	20080278927	Color Tunable Light Source
RP	20080252197	Color Temperature Tunable White Light Source
RP	20080218993	LED Signal Lamp
RP	20080218992	Light Emitting Diode (LED) Based Lighting Systems
RP	20080192458	Light Emitting Diode Lighting System
DS	20080158480	Photo-luminescence Color Liquid Crystal Display
DS	20080151143	Light Emitting Diode Based Backlighting For Color Liquid Crystal Displays
LM	20080138268	Nano-yag:ce Phosphor Compositions And Their Methods Of Preparation
LM	20080116786	Novel Silicate-based Yellow-green Phosphors
LM	20080116421	Compositions Comprising A Mixture Of A Bam Phosphor And At Least One Other Hexaaluminate
LM	20080111472	Aluminum-silicate Based Orange-red Phosphors With Mixed Divalent And Trivalent Cations
LED	20080111141	Light Emitting Diode Assembly And Method Of Fabrication

Patents continued on next page.



Field	No.	Title
DS	20080074583	Photo-luminescence Color Liquid Crystal Display
LED	20080073616	Novel Phosphor Systems For A White Light Emitting Diode (LED)
LM	20080036364	Two-phase Yellow Phosphor With Self-adjusting Emission Wavelength
RP	20080029720	LED Lighting Arrangement Including Light Emitting Phosphor
LM	20080018235	Aluminate-based Green Phosphors
DS	20070240346	Light Emitting Sign And Display Surface Therefor
LM	20070029526	Silicate-based Orange Phosphors
LM	20060261309	Two-phase Silicate-based Yellow Phosphor
LM	20060158090	Novel Aluminate-based Green Phosphors
LM	20060145123	Silicate-based Green Phosphors
LM	20060028122	Novel Silicate-based Yellow-green Phosphors
LM	20060027786	Aluminate-based Blue Phosphors
LM	20060027785	Novel Silicate-based Yellow-green Phosphors
LED	20060027781	Novel Phosphor Systems For A White Light Emitting Diode (LED)
LM	20060022170	Compositions Comprising High Light-output Yellow Phosphors And Their Methods Of Preparation

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Intematix Corporation

Intematix Corporation is a materials development innovator, providing customizable, patented phosphors that serve as the foundation for high-quality, energy-efficient LED light. Intematix products enable attractive, vivid color quality, superior consistency, uniformity and stability. Headquartered in Fremont, California, Intematix maintains R&D, manufacturing, business and support operations in the United States, Asia and Europe.

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