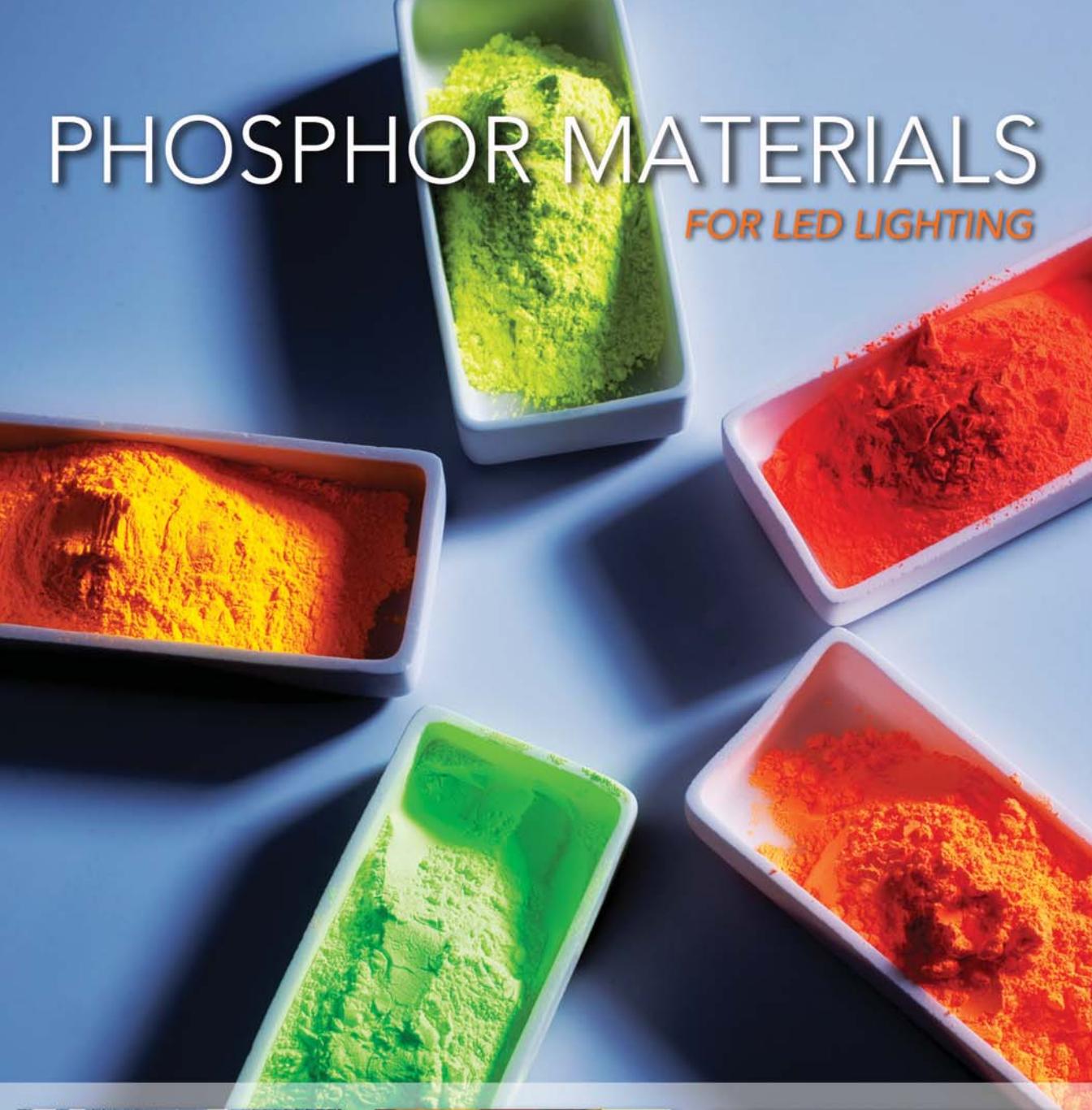


PHOSPHOR MATERIALS

FOR LED LIGHTING



INTEMATIX

INTEMATIX, MAKING LIGHT BETTER



CHOICE

Providing a broad array of colors and materials

RELIABLE

Offering high volume, global production and a certified quality system

IP LEADERSHIP

Proven innovator with a deep focus on intellectual property

EXPERIENCE

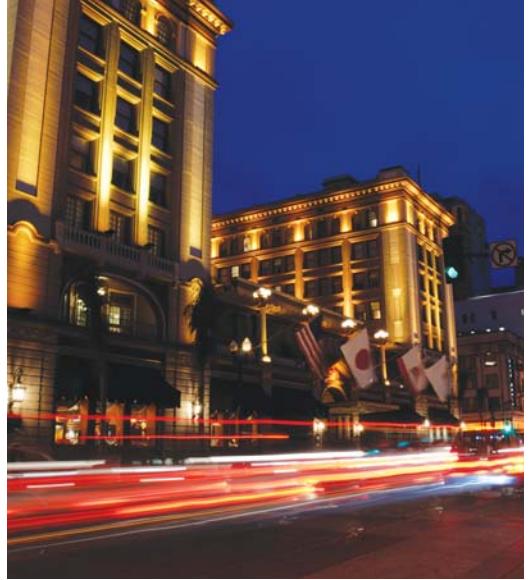
Delivering phosphors backed by years of research in materials development

QUALITY

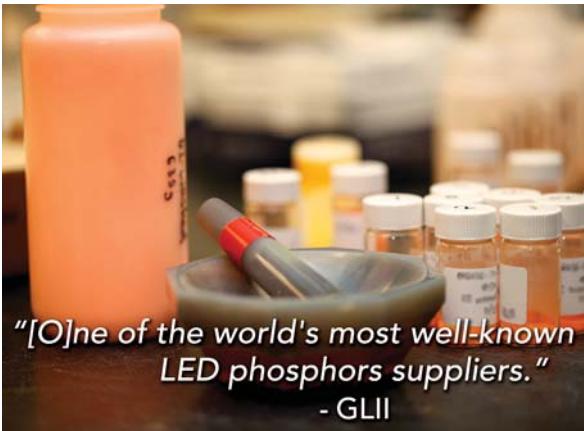
Ensuring the highest quality and performance, while working with you to optimize the phosphor solutions for your specific application

Phosphors Create the Lighting Experience

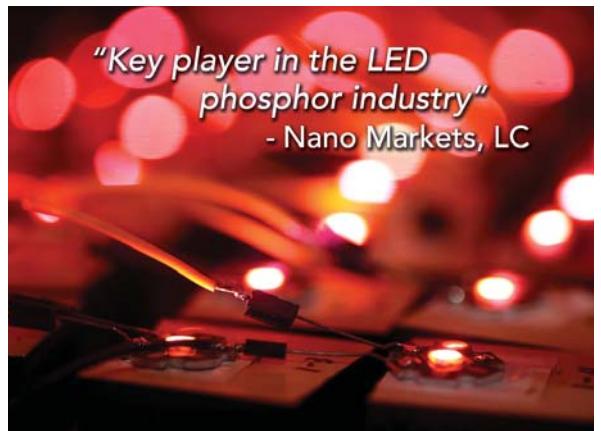
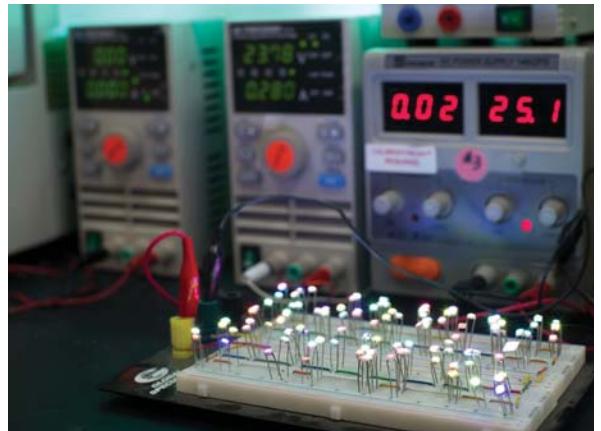
Phosphor performance defines the light quality of LEDs in products you know and love; from smartphones, tablets, and HDTVs to the latest in energy-efficient home lighting. To create high quality white light, phosphor materials are deposited on blue-emitting LED chips. The blue light is absorbed and a different color is emitted by the phosphor. The LED-phosphor combination produces white light with a variety of specific color qualities, depending on the chemistry of the phosphor material. Astonishingly, up to ninety-five percent of the light we see comes from the phosphor. Intematix IP-backed phosphors ensure the quality of light required by every LED application.



Intematix labs discover, manufacture and ensure the quality of our world-class phosphors.



"[O]ne of the world's most well-known LED phosphors suppliers."
- GLII



"Key player in the LED phosphor industry"
- Nano Markets, LC

The Broadest Range of Phosphor Products

Intematix's portfolio of phosphor products includes GAL (Aluminate), NYAG (Garnet), Nitride and Silicate families which emit green, yellow, red, and orange light. Our broad range of phosphor offerings is designed to enable the highest value solution that satisfies the quality, reliability and efficacy needs for any application. Plus, we have the expertise and experience to understand how phosphor combinations interact, thereby shortening your design time and enabling you to get a top-performing LED to market faster.



Nitrides

Intematix offers an extensive portfolio of IP protected red Nitride materials, ranging from the brighter short wavelengths to longer wavelength, deep reds.

- Enables high CRI, up to 98
- High reliability and efficiency, up to 95%
- Energy efficient warm white light
- Enables wide color gamut

NYAG

Intematix yellow and green NYAGs (Garnets) are among the highest efficiency phosphors in the industry, making them a standard in phosphor-converted LEDs.

- High lumens per watt cool white
- Application design freedom
- Proven solution for general illumination
- Tight color and particle control for higher yield

GAL

Intematix's IP protected yellow and green GAL (Aluminate) phosphors are optimized for high power LEDs by maintaining a high brightness over a broad thermal range.

- Up to 98 CRI in IP protected blends with red phosphors
- Enables cool and warm whites
- Excellent for long life products
- Higher value substitute for YAG, Silicate
- No chromaticity shift in high power LEDs

Aluminate Design Options



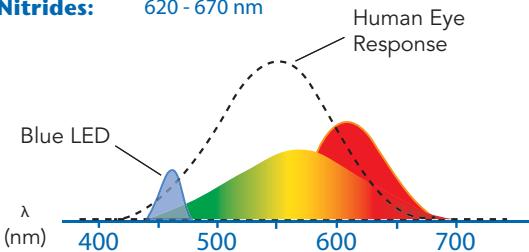
Silicates

Intematix offers the widest range of Silicates, from blue-green to orange and everything in between. Our Silicates are known for their high efficiency and dazzling brightness.

- Ideal for displays; more emission passes through color filters
- Highest lumen per watt for lighting
- Enables complete spectrum solution
- Enables a wide range of light sources, UV-violet-blue

Intematix Broad Spectral Coverage Enables Superior Color Quality

Silicates: 507 - 610 nm
GAL: 515 - 560 nm
NYAG: 545 - 564 nm
Nitrides: 620 - 670 nm



Efficient and Reliable by Design

Intematix has built our leadership in phosphor materials by developing new phosphors and improving existing products to satisfy the rapidly advancing needs of LED packagers and manufacturers. Since the introduction of LED backlighting, Intematix has developed and enhanced high reliability and high quantum efficiency phosphors with tight particle size control to ensure ease of integration.

Intematix strives for excellence in our phosphor solutions. Led by a strong R&D department, we continuously optimize our phosphors to increase performance levels by tightening specs, increasing brightness and creating an array of particle sizes.



Intellectual Property Protected

Intematix is a proven innovator with a deep focus on intellectual property.

With hundreds of patents and patent applications in the areas of Phosphor Materials, Phosphor Applications, and Other, Intematix is a world leader in enabling quality LED lighting and display technology. Intematix's Phosphor Material IP portfolio alone has well over 300 issued patents and patent applications that cover all of the major geographic markets throughout the world, including The United States, Korea, Japan, China, Taiwan, and Europe.

Our comprehensive patent portfolio is the result of the company's commitment to research and development. Each of our phosphor families includes key IP – including both patents and proprietary trade secrets – that help make us the industry leader. Intematix firmly stands behind all of its products with indemnification protection for customers.



Intematix Corporation

Intematix develops essential materials to drive the LED lighting revolution. The company's comprehensive range of phosphors and remote phosphor components can be used to build the foundation for the world's LED lighting products and systems including general lighting, displays, automotive and many others. A broad product selection of phosphors for LED makers and ChromaLit remote phosphors for lighting system manufacturers accelerate time-to-market, improve light quality and efficacy and reduce costs.

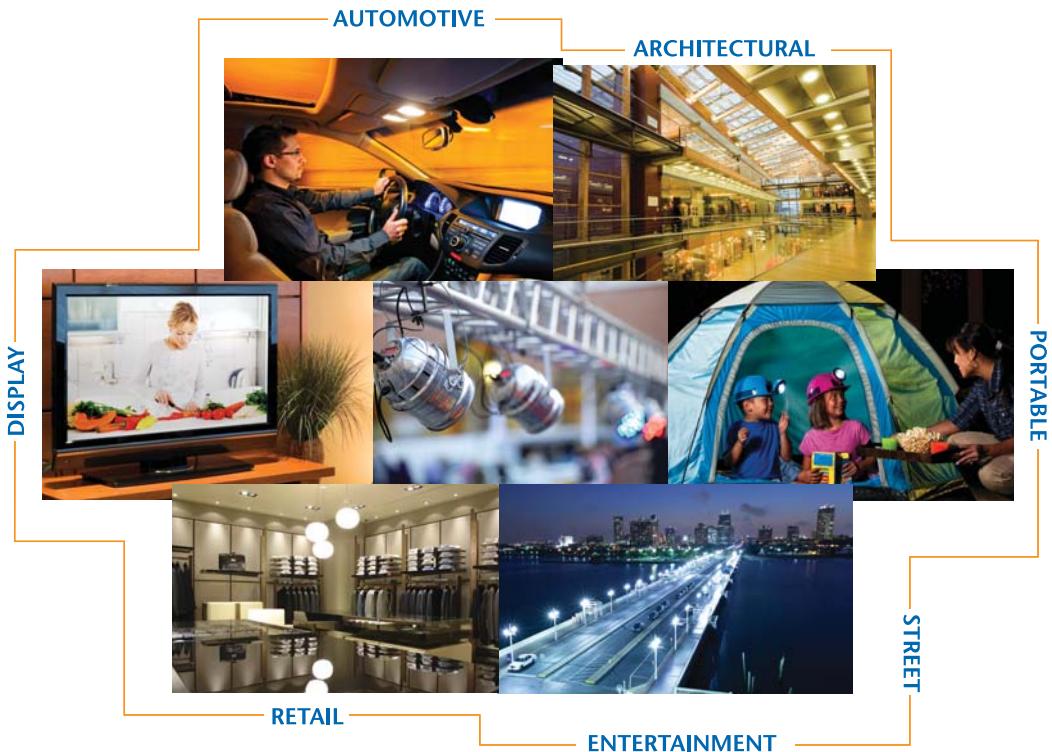
Intematix Corporate Headquarters

46430 Fremont Boulevard • Fremont, CA 94538

Tel: +1.510.933.3300 • Fax: +1.510.668.0793

www.intematix.com

For more information please email phosphor@intematix.com



Intematix Phosphors' Wide Range of Applications