

# Stats & Chats

Essential Information from our Industry Experts

Providing high quality PVD materials to the Advanced Memory Industry

## Time for an LED Switch



Light Emitting Diodes (LEDs) are semiconductor p-n junctions that emit light when forward-biased with electrical current. The peak wavelength emitted is determined by the bandgap of the semiconductor material. Since their invention in the 1960s, LEDs have been made from conventional compound semiconductors such as GaAs and AlGa<sub>x</sub>As<sub>y</sub>. The peak wavelength of these conventional LEDs was in the infrared (GaAs) or the red (AlGa<sub>x</sub>As<sub>y</sub>).

However, in the 1990s, researchers from Japan demonstrated the epitaxial growth of InGa<sub>x</sub>N<sub>y</sub> based LEDs that emit blue wavelengths. These InGa<sub>x</sub>N<sub>y</sub> layers are grown as single crystal thin films on monocrystalline substrates. The most common substrates for blue LEDs are monocrystalline sapphire (Al<sub>2</sub>O<sub>3</sub>), silicon carbide (SiC) and silicon (Si). [See more...](#)

## A Disturbance in the Force

Electromagnetic Interference most commonly occurs in the frequency range of 104 to 1012 Hertz. Some of the most common sources of EMI are from radio transmitters, electric motors, fluorescent lights, power lines and computer circuits. If EMI shielding is not in place to protect sensitive electronic components, device failure can result from electromagnetic spectrum interference. EMI has been known and understood for almost 100 years back to the time of early signal transmission. Currently, EMI shielding has become a fundamental and necessary part of designing an electronic circuit. [See more...](#)

## Recovering Precious Metals

Many precious metals, such as gold, silver, platinum, palladium, iridium, rhodium and ruthenium are used in Physical Vapor Deposition technologies. These precious metals are chosen for advantages such as high electrical conductivity and corrosion resistance, and for a variety of applications including Memory and Low E Glass. However, they represent a significant cost in two ways: one is that precious metals are in themselves expensive; and second, manufacturers can "lose" a high percentage of metal that is deposited onto chamber surfaces and internal fixtures during the evaporation or sputtering process. [See more...](#)

## Semiconductor Support under One Roof

Materion's Advanced Materials facility in Limerick, Ireland is nearing completion of a significant upgrade and expansion. The enhancements will allow us to become a premier supplier to the semiconductor industry for Europe. It will double thin film bonding and debonding capacity for semiconductor customers who use precious thin film deposition materials. [See more...](#)

### MATERION ADVANCED MATERIALS GROUP

2978 Main Street  
Buffalo, NY 14214  
AdvancedMaterials@materion.com  
[www.materion.com](http://www.materion.com)

USA: 800.327.1355  
Europe: +44.1635.22.3831  
Asia: +65.6559.4450



MATERION

April 2015

## Face to Face

Meet Simon Osborne, Materion's Channel Sales Manager for the Advanced Materials Group in Hungerford, UK. One of Simon's key tasks is to bring onboard new "channel partners" (third-party sales representatives, buyers and re-sellers) in locations where Materion does not have a direct sales presence. His responsibilities include working closely with the Channel Partners to ensure they have the resources and training necessary to act on behalf of Materion and are fully compliant with our legal policies. As a Materion employee since 2006, Simon is enthusiastic about the company and its people. "Working closely with outstanding colleagues makes this job easier and more rewarding." [More on Simon....](#)



## Honored for Excellence

The operations staff at Materion was greatly pleased to be recognized with two performance awards in 2014. Receiving the "Perfect Quality Award" from ON Semiconductor and the "Supplier Excellence Award" from Analog Devices Inc. exemplified the care taken in providing all our customers with superior products and services. Materion Advanced Materials President Donald Klimkowicz commented, "I am very proud of our team for being honored with **two** recent awards. Our people have always focused on delivering quality offerings to our customers. We will continue to provide the excellent support and premium products that all our customers have come to expect from us." [See more...](#)

