

Blue LED, scientific breakthrough with real world impact

IVA, Chemical Society of Japan, Japan Society for the Promotion of Science, Meijo University, Sweden-Japan Foundation and The Japanese Embassy welcome you to a seminar on 21 May 2014

In the 1960's red and yellow-green light-emitting diodes (LEDs) and infrared semiconductor lasers (LDs) were already realized. But there was no prospect of practical blue-light-emitting devices. In 1973, Professor *Isamu Akasaki* decided to develop high-performance blue-light-emitting devices based on GaN p-n junctions. And in 1986 he and his group at Nagoya University created the first electronic-grade high-quality GaN single crystalline material. In 1989, they developed the first GaN p-n junction blue LED.

The development of blue and green LEDs has completed the set of LEDs for the three primary emission colors. Coupled with available high-brightness red LEDs, they imply the development of solid-state full-color displays, traffic lights, signage, and specialized lighting applications.

White LEDs are now being used in TVs, cell phones and displays and beginning to be applied to lighting equipments in houses, offices, factories and outdoors. The UV-LEDs will be used in sterilization, microscopic level diagnoses, and medical treatment.

All of these GaN-based devices are robust, and they enable significant energy savings. Their use will be a major weapon in the fight against global warming.



Prof. Akasaki
Meijo University

Registration and more information

- Date:** Wednesday 21 May 2014, 17:30–20:00 followed by dinner.
Venue: IVA's Conference Center, Grev Turegatan 16, Stockholm, Sweden.
Streaming: www.iva.se/live
Registration: Please register at www.iva.se/seminar-20140521 no later than 14 May. The cost of dinner is SEK 400 (incl. SEK 80 VAT) and should be paid into "bankgiro 5108-2527." Participation in the seminar is free of charge. IVA's corporate id number is 262000-1160.
More info: Contact *Johan Persson*, e-mail johan.persson@iva.se, tel +46-8-791 29 41.



Programme

17:30 **Welcome**
Johan Weigelt, Vice President IVA

Presentation of Prof. Akasaki
Nobuyuki Kawashima, Executive Director, CSJ

Development of GaN-based semiconductors of excellent quality and their p-n junction blue-light-emitting devices
Prof. Isamu Akasaki, Meijo University, Nagoya

18:30 **Nanowire-based LEDs: from materials science to applications**
Prof. Lars Samuelson, Lund University

Properties of GaN and related materials, and the relevance for visible light LEDs
Prof. Bo Monemar, Lund University

Sweden, a solid state for LED
Christofer Sifvenius, Swedish Energy Agency

20:00 **Dinner**

Seminar chaired by: *Prof. Satoshi Kamiyama, Meijo University*



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