



# Dowa: Entering an emerging product market through IP and new technology capability transfer

Photo: UV LED-induced fluorescence from LEDs produced by DOWA engineers at SRI-PARC Campus. Photo courtesy of DOWA.

### A Path to Enter New Markets

To move into new device markets, Dowa Electronics Materials Co., Ltd., a semiconductor materials company, sought to acquire a capability in near-ultraviolet light-emitting diodes (near UV-LEDs). The company had significant materials expertise and in-house R&D, but lacked the knowledge to manufacture and develop this category of LED-based products—and the acquisition of intellectual property alone would not enable them to reach their goal.

### Solution Description

Dowa came to us to acquire key intellectual property in fabricating UV-LEDs. The company engaged PARC (now SRI), which has a world-class competency in optoelectronics, because our experience includes developing lasers in the infrared, visible, and ultraviolet regions of the optical spectrum. SRI scientists had already demonstrated UV semiconductor light-emitting diodes and lasers—including the industry's first grown with a specific material. We had also created the world's first multi-beam lasers, helped Xerox become the first printing company to build a blue laser, and enabled the creation of a new company dedicated to manufacturing high-power, semiconductor lasers.

### Process

During the five-month engagement that involved technology and knowledge transfer, SRI scientists:

- Demonstrated growth of near UV-LED semiconductor devices on Dowa's preferred substrates
- Hosted senior engineers from Dowa's headquarters at the SRI-PARC Campus facility for several months
- Overcame language barriers to train Dowa engineers in configuring the new technology
- Delivered comprehensive documented instruction describing the design, growth, fabrication, and evaluation of UV-LEDs along with equipment setups, specifications, materials, and suppliers

### Results

After SRI transferred the LED knowledge and other intellectual property, Dowa announced that it had used the SRI technology to achieve the world's highest output in the near-UV wavelength range. The company is now developing novel device configurations and intends to enter new device markets.

### About SRI

SRI is an independent nonprofit research institute, headquartered in Menlo Park, California, with a rich history of supporting government and industry. We create and deliver world-changing solutions for a safer, healthier, and more sustainable future. For more than 75 years, we have collaborated across technical and scientific disciplines to discover and develop groundbreaking products and technologies and bring innovations and ideas to the marketplace. Learn more at [www.sri.com](http://www.sri.com).

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