

First Near UV Laser Diode Developed In China

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AIXTRON AG, a leading provider of deposition equipment to the semiconductor industry, today announced the development of the first near UV laser diode by the Institute of Semiconductors at the Chinese Academy of Science (ISCAS) in Beijing, using a Thomas Swan MOCVD reactor.

Two years ago, ISCAS expanded its research and development capability by installing a state-of-the-art Thomas Swan Close Coupled Showerhead (CCS) MOCVD reactor. The 3x2" GaN on sapphire and 1x4" gallium nitride (GaN) on silicon MOCVD reactor has been utilized primarily for the development of short-wavelength laser diodes and UV photo-detector based devices.

After two years of research, the State Key Laboratory on Integrated Optoelectronics research group at ISCAS, led by Professor Hui Yang, in collaboration with another research group headed by Professor LiangHui Chen has been successful in developing the first near UV laser diode in Mainland China.

The near UV laser diode employed 5 period InGaN/GaN MQWs as the active region and AlGaIn/GaN superlattices as the cladding layer, which was epitaxially grown on a GaN/Sapphire template. The lasing wavelength is 410 nm. The laser diode is gain-guided with a strip width of 5 micrometers and a strip length of 800 micrometers.

The 3x2" (1x4") Close Coupled Showerhead reactor is part of the

successful CCS reactor family. These reactors with capacities of up to 19x2” have established their leading role in the LED industry. LED manufacturers in Taiwan, USA, South Korea and Japan are successfully using these reactors for the epi-growth of green, blue, and UV LED structures.

Source: AIXTRON AG

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