VIGO SYSTEM Epitaxy Division

EPITAXIAL NANOTECHNOLOGY
going beyond single technology solutions

VIGO SYSTEM

Boston Electronics
AS ONE OF THE FEW COMPANIES ON THE MARKET WE OFFER A BROAD RANGE OF HIGH QUALITY EPI-WAFERS THAT CAN BE MANUFACTURED BOTH IN LARGE VOLUMES AS WELL AS IN SMALL TEST BATCHES.

We produce high-grade III-V compound semiconductor epitaxial structures for photonic devices (F-P, VCSEL, QCL lasers, photodetectors), microelectronic devices (diodes, transistors) and others.

We focus on highly innovative products for wireless, telecommunication, sensing or printing applications.

We offer technological solutions that exceed current limits of knowledge. We have succeeded in developing unparalleled epi-structures for lasers, transistors and photodetectors, creating new quality benchmarks.

We provide extensive research and development services - whether you are at the concept stage of your product design, need innovative upgrades to your existing products or seek out-of-the-box solutions.
OUR PRODUCTS

GaAs - BASED PRODUCTS
- AlGaAs/GaAs
  - NW edge emitting lasers
- VCSELs
- FETs, HEMTs, Schottky diodes
- varactors

InP - BASED PRODUCTS
- InGaAsP/InP - strained or matched QW edge emitting lasers and SOAs 1300 - 1600nm
- InGaAs/InP - NW edge emitting lasers
- InGaAsP/InP - VCSEL structures
- InAlGaAs/InP - edge emitting and VCSEL structures
- InGaAsP/InP - passive devices
- InGaAs - photodetectors
- InAlAs/InGaAs/InP - HEMTs

Manufactured to specification

WHEN PERFORMANCE MATTERS

OUR HOLISTIC APPROACH ELEVATES THE TECHNOLOGY TO CREATE SOLUTIONS THAT CONSISTENTLY EXCEED EXPECTATIONS

STATE-OF-THE-ART EQUIPMENT
Using AIXTRON’s MOVPE (metal organic chemical vapour deposition) multi-wafer system, we produce exceptionally high-quality epitaxial structures. The Laytec’s in-situ monitoring allows measurements that provide precise control of the growth process.

- AIX 2800 G4 system
- horizontal laminar flow reactor
- multiple rotation of substrate carriers
- 12 x 2, 3, 4, 8 x 6 inch wafer configuration

QUALITY ASSURANCE
Reliability is one of our core values. We test all products comprehensively using reflectometry, electron microscopy, X-ray diffraction, atomic force microscopy, photoluminescence, Hall effect method, SIMS (secondary ion mass spectrometry), DIC (differential interference contrast) microscopy, EC-V profilemetry, spectrophotometry and more to ensure quality and uniformity.
WE THINK BEYOND WAFER

WE DON'T PROVIDE ONLY PARTS TO SYSTEMS. WE ESTABLISH AN EFFECTIVE AND TRUSTING RELATIONSHIP WITH OUR CLIENTS PASSIONATELY HELPING THEM ON THEIR SPECIFIC ISSUES.

PROVEN TECHNOLOGY

We have more than 35 years’ experience in producing high-grade II-VI compound semiconductor epitaxial structures. Our epi-wafers are characterized by:

- ultra-high purity,
- precisely controlled thickness, chemical composition, optical and electrical properties,
- excellent uniformity,
- reproducibility.

R&D CAPABILITIES

We offer extensive R&D services to produce customized materials for specific applications. We also provide our clients with technological support in carrying out R&D projects and propose new methods and approaches for producing highly successful epitaxial structures.

EPITAXIAL NANOTECHNOLOGY

Cross-sectional scanning electron microscopy (SEM) images of AlGaAs / GaAs epilayers

Atomic force microscopy study of the surface morphology of InGaAsP epilayer (Ra -100pm)

SIMS measurements of AlGaAs / GaAs periodic structure

SIMS measurements of InGaAs epilayer doped with Si and Zn

Photoluminescence (PL) map of 4” InGaAsP epilayer

X-ray diffraction of In(19%) GaAs / AlGaAs / GaAs

Atomic force microscopy (AFM) image of InAs QDs / InP

going beyond single technology solutions
ENT is Vigo System’s Epitaxy Division that produces high-grade III-V compound semiconductor epitaxial structures for photonic devices (F-P, VCSEL, QCL lasers, photodetectors), microelectronic devices (diodes, transistors) and others.

Vigo System is the world’s leading manufacturer of standard and customized high-tech uncooled photodetectors of middle and long wavelength range for security, military technology, industrial, space, medical, transport and environmental protection applications.