



# MICROSENSE TECHNOLOGY LTD.

## FOUNDED

in **2012**

R&D department of the company "LED Microsensor NT"

## CORE OF THE INNOVATION:

To create on the basis of solid solutions GaSb-InAs light-emitting-diode heterostructures that fully cover mid-infrared range from 1,600 to 5,000 nm.

## ADVANTAGES OF THE TECHNOLOGY:

LED-matrices of mid-infrared range allow within parts of a second scan the range in which absorption bands of basic chemical agents are located. The technology allows analyzing concentration of up to 50 chemicals. Major impact was made on developing sensors for measuring concentration of CO<sub>2</sub>, H<sub>2</sub>O, and hydrocarbons (C<sub>x</sub>H<sub>y</sub>).

## PRODUCT IMPLEMENTATION

**2013**

## PEOPLE

### GENERAL DIRECTOR:

Nickolay Stoyanov Стоянов Николай Деев

### TECHNICAL DIRECTOR:

Sergey S. Molchanov

## Peculiarities of the product

**1**

Light-emitting diodes of the mid-infrared range have been developed on the basis of long-term research of narrow-bandgap heterostructures that had been held by the project team members at Ioffe Physical Technical Institute. Currently there are no direct analogues of this product in the market.

**2**

There exist some functional analogues. At the moment all the sensors offered in the market have substantial drawbacks: bad selectivity and need for frequent and complicated calibrating (catalytic and absorption sensors), high price, large size, high energy consumption (optical sensors based on heat and laser infrared emission sources). It doesn't allow all the above-mentioned sensors to become a mass product.

**3**

A number of universities such as Montpellier, Lancaster and private research laboratories like Hamamatsu company (Japan) and Laser Components company (USA) lead research in order to create heterostructures that provide mid-range infrared emission. However, the current research level does not allow commercial models emerge in the market within the next 5 years.

