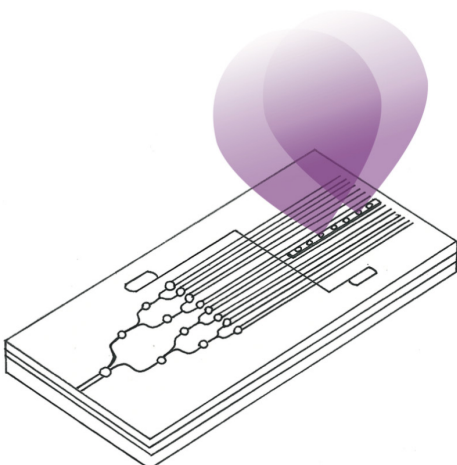


IMEC'S ALL SOLID STATE LIDAR TECHNOLOGY

Imec is developing an affordable LiDAR system-in-a-package which will open the technology to a new range of applications. Thanks to semiconductor technology, this small, highly accurate chip will serve as a sensor that measures distance-to-target by illuminating the target with pulsed laser light and receiving the reflected pulses with a detector.

LIDAR SYSTEM-IN-A-PACKAGE

A LiDAR computes distances by shining a laser, capturing the reflected light, and then forming a 3D image of the environment containing range data. Though LiDAR applications have been in use for high-end applications for decades. Imec is developing a miniaturized, affordable, solid state solution based on 905nm and 1550nm wavelengths that can open up LiDAR technology for all kinds of new applications including autonomous driving, intelligent machine vision and robotics.



KEY BENEFITS

- **Small size and light-weight.** The chip-based solution that imec proposes will guarantee a small size. This will enable integration of the LiDAR in numerous applications. Our light-weight solution will also make it possible to use in applications like drones.
- **Affordable.** By using semiconductor technology, the cost can be drastically reduced.
- **Ranging over several 10's of meters.** While many applications can benefit from this feature, this will be crucial for robots and industrial vehicles to navigate in safety around humans and obstacles.

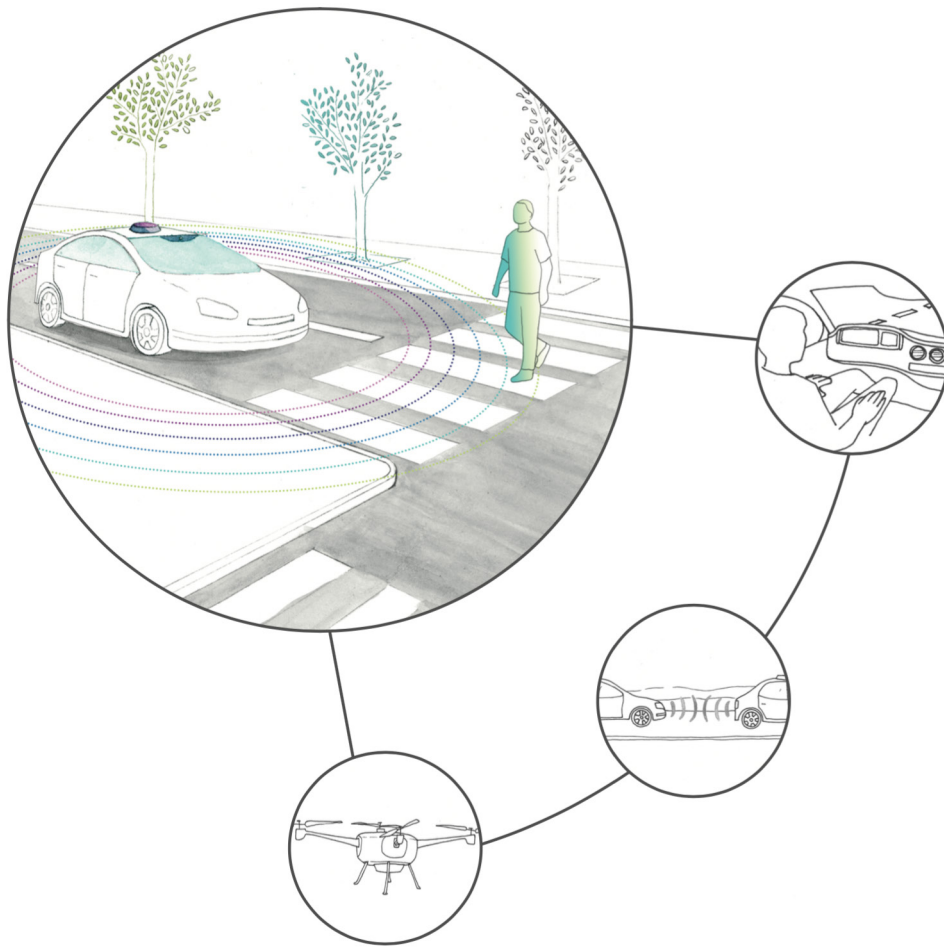
SPECIFICATIONS OF LIDAR DEMO

A first demo is being developed – based on 1550nm – to demonstrate the unique capabilities of semiconductor technology.

- Measurement rates of 1MHz
- Approximately 2 meters ranging distance
- Maximum range of several 10's of meters
- Range resolution of several centimeters
- Capable of performing imaging at several frames per second

APPLICATIONS

- Autonomous vehicles
- Aerial drones
- Automation of factory robots
- Service robots in hospitals and other customer oriented environments
- Assisted surgery
- Intelligent machine vision and robotics



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