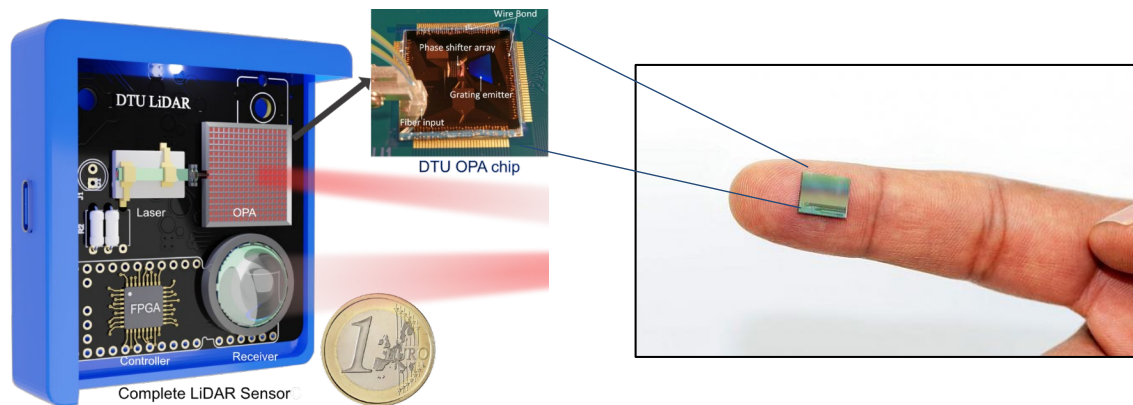


Integrated optical phased array LiDAR Sensor



Value Proposition

Light detection and ranging (LiDAR) is a technique for measuring the distance between sensor and objects by measuring the time difference between emission of the light and its return to the sensor, after being reflected by objects. By fast scanning the light both horizontally and vertically, a 3D image with precise depth information can be obtained, which has a broad range of applications including autonomous driving, robotics, geography, surveying, etc. Conventional mechanical LiDAR has a light scanner based on mechanical moving, however, it is bulky, slow, expensive and sensitive to the vibration. Optical phased array (OPA) can electronically control the phase of light emitters and allow for stable, rapid and precise 2D beam steering without any mechanical moving parts, making it immune to the vibration. Our OPA Lidar is the world's first and unique solid-state on-chip Lidar covering 180° view with only one sensor, which brings industries such as automotive and robotics a Lidar sensor with full field of view (180°) at a low cost.

Commercial Perspectives

It is estimated that LiDAR market will explode with an expected CAGR of 29% (2018-2024). Access to cheaper LiDAR systems will enable more application platforms make use of LiDAR for 3D depth perception. Denmark's robotics, automation and drone industry has grown significantly in recent years and is now home to global market leaders, high-growth startups and world-leading research. There are more than 300 robotic, automation and drone companies in Denmark. Our compact OPA LiDAR with small size and light weight is very suitable to be integrated in a robot or a drone and can add values for the robotic and drone companies in Denmark.

Technology Description

We are developing an OPA LiDAR to bring down both the size and cost. Our patent-pending device has solved the three hardest problems of OPA LiDAR, i.e. field of view (FOV), long-range detection and background noise, by a radically innovative OPA design. Our OPA LiDAR chip is based on silicon photonic platform and can leverage the technology of commercial CMOS foundries, the same technology that develops silicon-based microprocessors in computers, facilitating mass production at a low cost.

Development Phase

Current technological readiness level: TRL 3/4. The OPA emitter has been successfully demonstrated in the lab. Next step is to develop a full OPA LiDAR including both emitter and receiver. The full OPA LiDAR system needs to be optimized and a prototype needs to be made for the test in relevant scenarios.

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Seeking / interested in

Funding
Investors
Collaboration
Industrial partners