Smartare Elektroniksystem
ELECTRONIC COMPONENTS & SYSTEMS

Project abstract

Title: Integrated LIDAR system platform for gas profiling in combustion and industrial processes

Objective

The objective is to develop a sensor technology platform based on the new Scheimpflug LIDAR concept, for profiling and monitoring of combustion and industrial processes.

Abstract

NEOLund develops laser technology platforms for industrial and academic applications. One development branch involves innovative technology for LIDAR (light detection and ranging) sensors. Today, NEOLund has developed an atmospheric LIDAR system for monitoring of aerosols and aerial fauna in the km-range. This system has been delivered and tested by multiple sites around the world. Different from conventional LIDAR systems, which are based on photon time-of-flight, the NEOLund systems are based on the Scheimpflug principle, allowing the systems to be significantly, up to a factor of 10, more compact and less expensive while providing the same or superior resolution in time and space.

Based on NEOLund IPs and know-hows, we intend to, in collaboration with several partners, develop a dedicated smart sensor technology platform aimed for applications within combustion and industrial processes. Such applications require significantly more, robust, compact, integrated and cost-effective systems.

The target application for the project is to profile gases in fires, power plants and boilers in multiple dimensions, with the target parameters being particle distribution and gas flow velocities. The platform will also constitute a basis to enable temperature mapping, an area with enormous potential since no other industrial techniques are established today.

The project involves the entire value chain. From early prototype concepts which are developed by Lund University, to integration and engineering into a prototype system fulfilling industrial standards by NEOLund, and finally validation and verification tests at the sites of our two end-user project partners, a large Swedish research institute and a large Swedish power company.

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