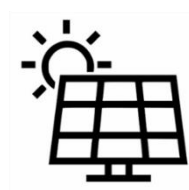
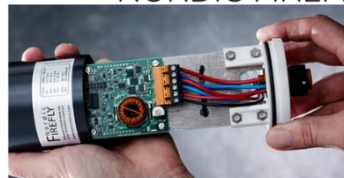


IoT Photovoltaics Demonstrator

DTU Fotonik
Institut for Fotonik



NORDIC FIREFLY



outsider



Value Proposition

Small form-factor IoT devices with long battery life-time acquires much interest due to the introduction of new IoT communication technologies (LoraWAN, SigFox and NBIoT). Size, battery life-time and cost of IoT devices are often limited by the battery of the device. Developing a battery-less, solar powered IoT device that is low-power developed using state of the art microcontrollers and IoT communication technologies will solve many challenges within the rising IoT market.

Business Opportunity/Commercial Perspectives

Small battery-less IoT devices have many uses. Mainly due to small size and due to a reduction maintenance. Food transport, logistics, GPS asset tracking are a few relevant market opportunity areas. Reduced cost (initial cost and maintenance cost) and compact size makes this product attractive for several IoT use cases.

Technology Description

With the development of an ultra-small ASIC integrated circuit, FORCE has enabled power harvesting of small currents. Typically power harvesting is challenged by strict requirements to voltage and/or current making the collection of power challenging. DTU Fotonik's Photovoltaics group are able to create custom solar panels that in turn can be made very small. The small size is acceptable due to the efficiency of the ASIC. The IoT team at DTU Fotonik are involved in this project to further materialize this into a small, solar powered IoT device capable of providing GPS location, temperature, humidity using LoraWAN communication technology. The goal is to develop a IoT photovoltaics demonstrator.

Development Phase

The development is currently ongoing as a collaboration between FORCE technologies and two groups at DTU Fotonik (Photovoltaics and IoT). The collaboration has led to a joint proposal submitted to ELFORSK. The proposal was positively received and budget negotiations are currently ongoing. Two Danish companies, Nordic Firefly and Out-Sider, are also part of the consortium. The demonstrator is currently being assembled and will be ready for demonstration end of December 2019.

The inventors

Martin Petersen mnpe@dtu.dk
Sarah Renée Ruepp srru@dtu.dk
Peter Poulsen ppou@dtu.dk
Samer Ismail sis@delta.dk

Contact Information

DTU Fotonik
+45 4525 6381
mnpe@dtu.dk

Seeking

- Funding/Investors
- Licensee
- Partner/Research Collaboration
- IPR Sale