



## Technology Request

Diffusion	International
Title	Manufacturer of optical fibres
Reference	52761
International Ref.	TRSE20161202001
Deadline	16-12-2017
Abstract	<p>A Swedish SME developing and selling research instruments based on their own developed NPS technology (NanoPlasmonic Sensing) is looking for a manufacturer of optical fibres that would be used as sensors in harsh environments. The company is looking for partners interested in entering a manufacturing agreement and/or a technical cooperation agreement.</p>
Description	<p>The Swedish start-up company has 6 employees and was established in 2010. Their own sensor technology NanoPlasmonic Sensing (NPS) and measuring instruments are today sold all over the world, mainly to R&amp;D communities to study processes at surfaces and interfaces on the nanoscale.</p> <p>The fibres will be used as carrier of the sensing elements (nanoparticles), which will enable an easy implementation inside of the given applications, in this case in batteries. The sensor equipment consists of a light source, an optical fibre, and a detector. The measurement will be made in reflection, which implies an optical splitter that connects the sensor fibre with the fibre to the detector, and the light source.</p> <p>Today the company has problem with insufficient reproducibility of the sensor performance, mainly due to rough cleaving, and bad optical connectors that enhance undesirable back reflection, which creates high background noise signals.</p> <p>Consequently, the company is looking for partners interested in entering a manufacturing agreement and/or a technical cooperation agreement.</p>
Innovative Aspects and Main offer advantages	
Development phase comments	
Industrial Property Rights comments	
Collaboration Types	Manufacturing agreement
Type of partner sought	<p>In the initial phase it is important to work within the visible light area, which implies multimode optical fibres. Due to the harsh environments the fibre has to be robust and chemical inert.</p> <p>Length of fibre: 10-30 cm</p> <p>Diameter of fibre: Does not really matters, mostly a question of how durable the fibre will be.</p> <p>Sensing area: with light in visible region (400-1000 nm)</p> <p>To enable sensing along the optical fibre the coating and cladding need to be removable in the sensing area. The measurement will be performed in reflection.</p> <p>The company is initially looking for a partner with knowledge of small series fabrication and adjustments towards high quality performance. Later on, when the sensor will be mass produced, the company is looking for knowledge within cost efficiency and large volume production.</p> <p>Another valuable knowledge is to design or choose optical splitters that in an efficient and robust way split the light from the light source, the sensing fibre, and the detector.</p>
Specific area of activity of the partner	<p>Type of partner sought: industry</p> <p>Specific area of activity: manufacturer of 50 optical fibres with connectors.</p> <p>Expected by the partner: Provide a short offer corresponding to technical specifications followed by discussions on type of partnership.</p>

Task to be performed