

FOSTER PROJECT: DEVELOPING A SALINITY SENSOR BASED ON FIBER OPTIC TECHNOLOGY

Salinisation is an ever growing problem on a worldwide scale and many countries are confronted with the consequences. Organisations such as potable water producers and water authorities as well as the agricultural community take a prime interest in obtaining an insight in the salinity regime of the groundwater and surface waters.

Existing techniques usually are based on measuring the difference in electric potential between a number of electrodes. The problem with these systems however is that the difference in potential measured is not only caused by the salt content of the (ground)water but also by other minerals present in the soil. This results in faulty measurements.



The FOSTER project, co-funded by the Dutch government, aims at the development of a salinity monitoring system based on fiber optic technology. The system will utilise special FBG (Fiber Bragg Grating) sensors developed by TNO Institute for applied research. The operation of such a system is not affected by the presence of other compounds present in the groundwater or surface water. An additional important advantage is that the FOSTER system can collect data at relatively high frequencies which makes it ideally suitable for application in areas with dynamic groundwater regimes.

To achieve this development a consortium was formed of participants TNO, Inventec, Deltares, De Ruyter, Buro Bron, University of Utrecht and Waternet. Within the consortium Inventec, with its extensive experience in fiber optic integration, is responsible for the production of the prototypes, system integration and, ultimately, putting the developed system on the market.