

# Angle Interrogating Optical Sensor ARGOS: Scanning MEMS Mirror for Waveguide Grating based Label-Free Biosensing

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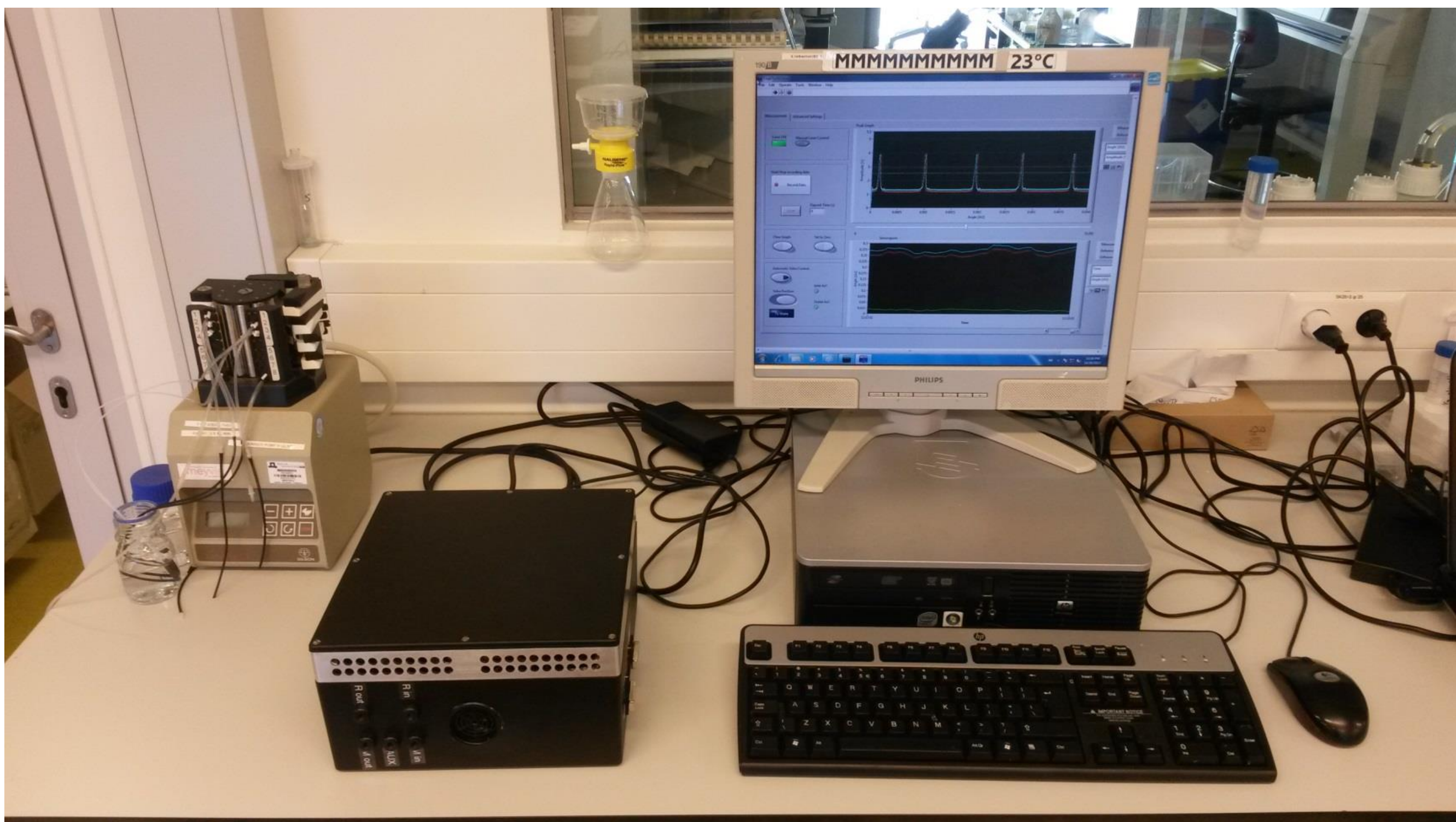
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An angle interrogating optical sensor (ARGOS) based on optical waveguide grating is presented. The label-free optical biosensor system relies on a MEMS micromirror device to interrogate waveguide grating sensing regions on an optical transducer chip by scanning the angle of the incident coherent light, resulting in the determination of effective refractive-index changes on a chemically functionalized interface at a high acquisition rate. The tuneable MEMS mirror allows interrogating a wide dynamic range and hence offers the flexibility to investigate at the point of interest. The optical reader development is part of the European FP7 Project RADAR (Rationally Designed Aquatic Receptors integrated in label-free biosensor platforms for remote surveillance of toxins and pollutants).

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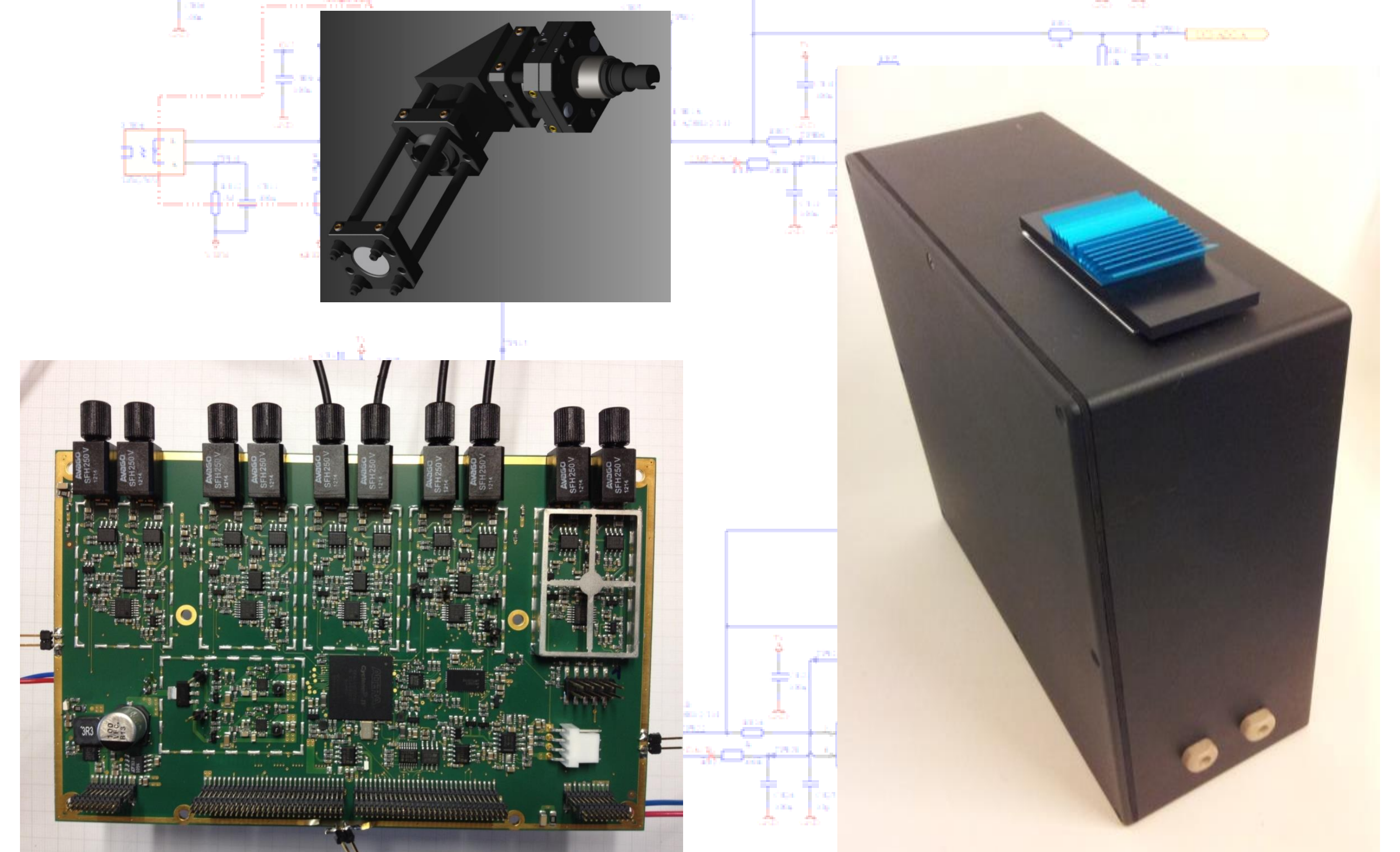
## 1<sup>st</sup> Prototype

Three prototypes have been built and delivered to the partners (Institute of Food Safety, RIKILT, Wageningen, Netherlands / Joint Research Center JRC, IHCP, Ispra, Italy) for evaluation and testing.



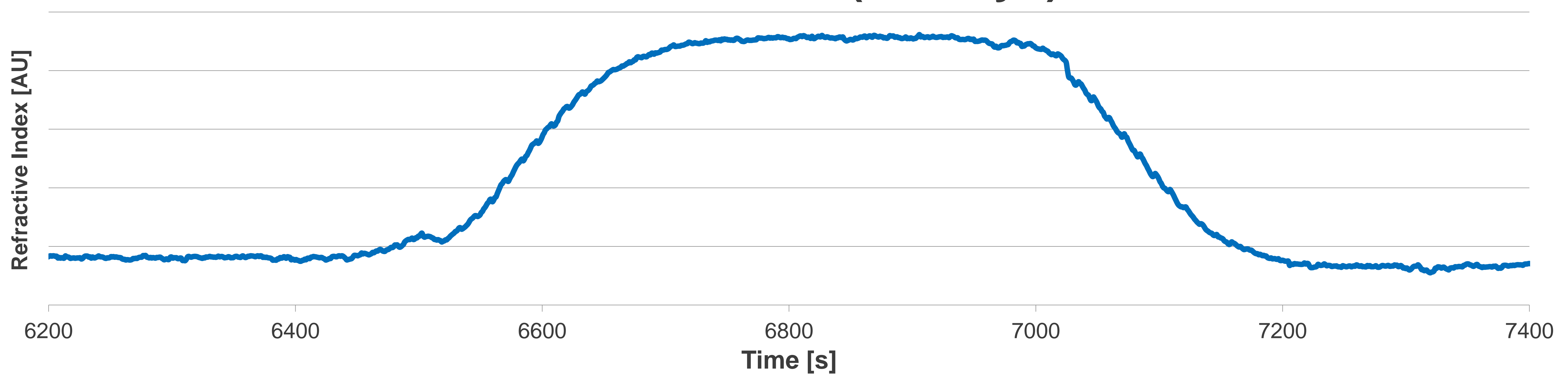
## Next Generation, Fully Integrated System

An improved, fully integrated and autonomous 8 channel system will be ready in 2014.



## Some Results: Fast Response, Low Noise, High Long-Term Stability

**WIOS 20ul/min (1% Glyc)**



**ARGOS 20ul/min (1% Glyc)**

