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MeasurIT Technologies Ltd. are pleased to introduce you to our May technical product update.

Yours sincerely,  
Zoe Williams, zoe@measurIT.com

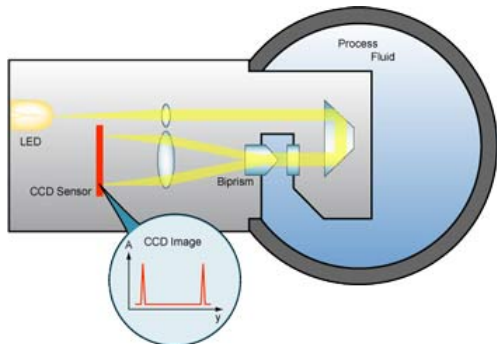
### How Refractometers work?

#### Transmitted Light principle

Refractometry is an ideal analytical procedure for an accurate and reliable measurement of a liquid's purity, concentration or density. A refractometer measures the refractive index of a fluid, a quantity which is characteristic for this specific substance and correlated to other properties such as concentration and density ([more](#)).

Refractometers are widely used for product detection, monitoring or regulating concentration as well as for quality control. They are a very common in laboratories where for example they are used for quality spot checks. With the growing importance of online process analysis, refractometers are now more and more used directly in the process.

The [PIOX R refractometer](#) works with transmitted light. It determines the refractive index of a fluid on the basis of a measurement of the refraction angle of a light beam crossing a prism immersed in this fluid ([Snell's Law](#)).



The light emitted by the sensor's LED (590 nm, sodium D line) is parallelized and bundled before it crosses the fluid to be measured. At the surface of the measuring prism, the light beam is refracted and split in two.

On the CCD sensor behind the prism, two intensity peaks are detected. The distance between them is correlated with the refraction index through Snell's law. The refractive index can thus be calculated and sent to the electronic unit together with the temperature measured by the Pt1000 probe.

The transmitter undertakes the calculation of the temperature compensated refractive index [n<sub>DT</sub>](#). Further defined output quantities are calculated using the fluid's [characteristic curve](#).



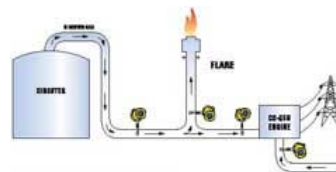
### WWTP Digester Gas

Modern WWTP processes incorporate digester gas flow measurement for:

- Data on digester process performance and control,
- Process control of co-generation systems using digester gas as fuel source.

[Read more about this application.](#)

ST51 is designed and targeted specifically for applications in **biogas, digester gas, natural gas** and other **methane-rich mixed composition gases**.  
[Read more about this flowmeter.](#)



### pH Sensors

**An unbroken record of innovation**  
Ted Barben introduced the first truly reliable pH sensor in 1964. In 1976, he introduced wood-cored pH probe, which offered an increase in ruggedness and life over traditional probes.

Continuing this record of innovation, the patented line of "Axial Ion Path" pH sensors was developed. It has proven to deliver up to **6 times the life of competitive probes**, with the best performance being in the toughest applications.  
[Learn more about BAT pH Sensors.](#)



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