

Measurement of moisture, hard- to softwood ratio, and more in pressurized parts of the production - Optimize your cooker, increase throughput, optimize energy consumption

The cooking process in the production of fibers for MDF/HDF or pulp production takes place at high pressures and temperatures. Until now, no suitable measuring technology has been available to measure (!) the actual water content rather than only roughly calculate/estimate it.

This is where the APOS DigesterView system comes in. An APOS spectroscopy system with a ruggedized temperature- and pressure-resistant probe is used to measure the moisture content in the area of the cooker discharge screw - online, in process.

After signal processing, the generated values are smoothened with a low-pass filter and then passed on to the control technology of the plant.

This is Industry 4.0 at its best: APOS DigesterView brings transparency to the cooking process and enables higher throughputs, capacity increases and energy savings.



Fig. 1: Screenshot visualization module



Fig. 2: Spectrometer Unit CSU

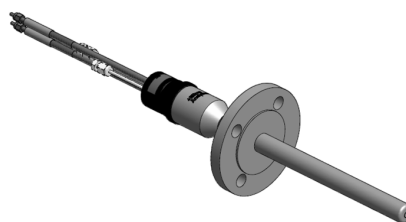


Fig. 3: Reflection probe

APOS DigesterView	
Measuring position	Cooker output
Measuring principle	Reflection, spectroscopy
Measuring rate	approx. 60 measurements/min
Temperature range	up to 240 °C (inside/material temp.), 150 °C (outside)
Pressure range	up to 50 bar
Measuring parameters	Water content/moisture. Hard- to softwood. Other parameters possible, e.g. percentage of lignin or other parameters.

Company Profile



APOS is *the* system integrator for optical measurement systems for the wood industry, providing solutions for the panel board industry, the pulp and paper industry, the thermal use of wood, etc.. Wood, being a complex material, is our focus – we know the specifics of wood because wood is all we do.

APOS is part of Nynomic group, a medium-sized group of companies focusing on contact free measurement solutions in various industries. Besides APOS, the group consists of m-u-t GmbH, LayTec AG, Spectral Engines Oy, tec5 AG, Avantes B.V., LemnaTec and Sensortherm, with subsidiaries in other European countries, the US and China.



APOS uses hardware components from its sister companies to assemble ruggedized spectroscopy system hardware and applies its home grown software solutions and calibrations to provide ready-to-use measurement solutions for our worldwide customers. APOS provides two solution families, **ProcessOPT** and **ReceivingOPT**.

Know your process: the **ProcessOPT** product line offers in-line measurement systems that provide accurate real-time information on e.g. water content/moisture, ash/minerals content, calorific value, wood type, lignin, TOC and more. All Systems offer a modular, state-of-the-art visualization and various interfaces to third party systems. All systems are made for tough environmental conditions and only need one annual maintenance. Accurate, robust, low maintenance costs, quick ROI.



On-site operation/Field work



Receiving OPT BA-T 300

Pay-for-quality: the unique **ReceivingOPT** product line offers various system types for immediate quality check of wood when it comes through the gate. Use ReceivingOPT BA for fixed installations in dump pits, BA-T for thermal biomass or BA-T 300 for log wood chain saw dust or chips. All provide immediate information on the relevant parameters. Highly accurate, values provided in real time or maximum 3 minutes, easy to use, robust, low personnel costs. The state-of-the-art solutions that replace more and more drying ovens.

APOS, the system integrator on optical measurement solutions for the wood industry. Proven, robust, quick ROI and high durability. German built. Experts in optical systems. Experts in wood.