

Measuring Pitch in Papermaking Processes

Applied Analytics Application Note No. AN-023 — Revised 11 September 2013



Application Summary

Analytes: **pitch (tree resin)**

Detector: **OMA-300 Process Analyzer (using UV-Vis dispersive absorbance spectrophotometer)**

Process Stream: **water**

Introduction

Tree resin, despite its usefulness throughout history (e.g. in waterproofing ancient Roman ships), is an enormous pain in the specific context of papermaking. Known industrially as pitch, this organic matter emerges from the wood in the pulping process, which aims to isolate strictly the cellulose fibers from which paper is made. If the pitch is not washed away, it will stick to the rolls and wires of the papermaking machinery while also staining the canvas and causing breaks in the paper web. In high-volume printing, machine shutdown and web breaks translate to huge financial losses.

Ensuring that pitch does not accumulate in the mechanical pulp is achieved by verifying the inverse, i.e. that the pitch remains dissolved in the pulping process wastewater. The various organic compounds that constitute pitch commonly have strong light absorbance around the 280nm wavelength due to their conjugated double bonds; this trait makes the concentration of these organic compounds in water highly detectable through UV-VIS spectrophotometry. The OMA-300 continuously monitors pitch in water and can predict problems by registering any sudden decrease in dissolved pitch. This system allows for automated feedback mechanisms such as the injection of fine talc or other fixative chemicals to disperse pitch deposits.

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Further Reading

Subject	Location
OMA-300 Process Analyzer Data sheet	http://www.a-a-inc.com/documents/AA_DS001A_OMA300.pdf
Advantage of Collateral Data Technical Note	http://www.a-a-inc.com/documents/AA_TN-202_CollateralData.pdf



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