

USE CASE SUMMARY

PAPER & PULP



MOISTURE DETECTION TO REDUCE WARP IN CORRUGATED BOARD PRODUCTION

Corrugated board is a simple but ingenious material. It is inexpensive and light, but still robust and 100% recyclable. Modern machines produce at speeds of 400m/min and at widths of more than 3m, resulting in an output of 80.000 m² of corrugated board every hour. The availability of innovative sensing solutions can boost digitalization and increasing automation of the production process.

THE CHALLENGE

- Unknown and varying moisture content in the paper leads to warping in corrugated board production
- Warped corrugated board leads to failures in postprocessing and is the main cause of production rejects
- Currently, not being able to measure moisture results in > 1 billion € overall losses per year due to rejects
- Monitoring moisture content would allow automated machine control and reduced rejects

ASTOUNDING REAL LIFE DATA

- Worldwide annual production of 250 billion m², which is the size of Great Britain¹
- 2/3 of German products are packed with corrugated board²
- 2% of corrugated board production is directly recycled as rejects



THE CURRENT APPROACH

- On-demand manual one-spot measurements of moisture using hand-held devices
- High manual effort, insufficient data, no process automation possible

THE BETTER WAY

- Material sensors can be used to detect the moisture content
- Use multiple sensors to resolve the moisture distribution across the whole web width
- Use the gathered information to set the perfect moisture level using automated machine control

THE SENORICS SOLUTION

Senorics' innovative spectrometer-on-chip sensor solution is:

- Process compatible: Seamless in-line integration in the production machine
- Continuous, reliable and fast tracking of paper moisture content
- Cost-effective: Multiple measurement spots possible
- Robust: no moving parts included in contrast to conventional spectrometers

SENORICS IN A NUTSHELL



Robust, small, mobile



Broad spectral coverage



Low cost & powerful

THE BENEFITS

The Senorics sensor solution helps improving product quality and reducing rejects, which is:

- Good for your profit:
Reduced rejects = reduced costs
- Good for customer relations:
Less complaints = higher satisfaction
- Good for the whole process chain:
Reliable post-processing = higher process efficiency
- Good for the climate:
Reduced rejects = reduced water and energy consumption for recycling (> 1 Mio. t CO₂ per year)

THE NEXT STEP

Are you interested in our solution? Please visit our webpage for more information or contact us.

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References:

¹ freedoniagroup.com/industry-study/world-corrugated-boxes-3339.htm

² wellpappen-industrie.de/data/04_Verband/05_Publikationen/03_ZahlenFakten/ZahlenFakten-2020.pdf