

Workshop »Digital Data creates value – recognising and exploiting opportunities«

Fundamentals before digital data can create value

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In the context of thin film applications, connectivity, data integrity, and consistency in equipment control software play an essential role in ensuring precision, reliability, and productivity. These elements are fundamental for achieving optimal results in this highly specialized field.

Connectivity, first and foremost, facilitates seamless communication between various components of a thin film systems but also to central databases, factoring automation systems like MES (manufacturing execution systems). When equipment, sensors, and data analysis tools are interconnected, it allows for real-time monitoring and adjustments, enabling operators to respond swiftly to changing conditions. This connectivity also paves the way for remote access and control, as experts can troubleshoot, calibrate, or analyze processes from distant locations, reducing downtime and costs.

Data integrity is also important in thin film applications, where the small variations can lead to unpredictable results. Accurate data collection, storage, and transmission are essential for maintaining process stability and quality control. Any data corruption or loss can result in the validity of experiments or manufacturing processes.

Consistency in equipment control software ensures that processes are executed precisely and uniformly, minimizing variations in deposition thickness, surface quality, and other critical parameters. It helps achieve repeatability, a key requirement in research and development, as well as in manufacturing environments. Consistency is also key in certain industries in regards of regulations, safeguarding product quality and compliance.

In conclusion, connectivity, data integrity, and consistency of equipment control software are the fundamentals in thin film applications. So before data can create value the thin film system have to reach a certain level.