

GLASS CONVERTING TECHNOLOGY

SPAMI: shaping the future, creating smart solutions for glass converting technology

Spami, a Stevanato Group company, is leading the way in glass converting technology – producing fully automated, high-speed, precision glass forming lines. Since 1971 its equipment has been providing accurate processing of ampoules, vials, cartridges and syringes. It achieves this through delicate container handling throughout the forming process and rigorous product inspection via state-of-the-art camera control systems.

Innovation is at the heart of Spami, with 50 years of pharmaceutical glass manufacturing expertise underpinning a drive to create smart solutions for the factory of the future. Automation, integration and optimization are the three pillars of the company's flexible solutions for even the most stringent pharmaceutical requirements.

When it comes to glass converting technology, there are three main trends Spami is actively investigating:

- Artificial intelligence
- Packing automation
- Predictive maintenance

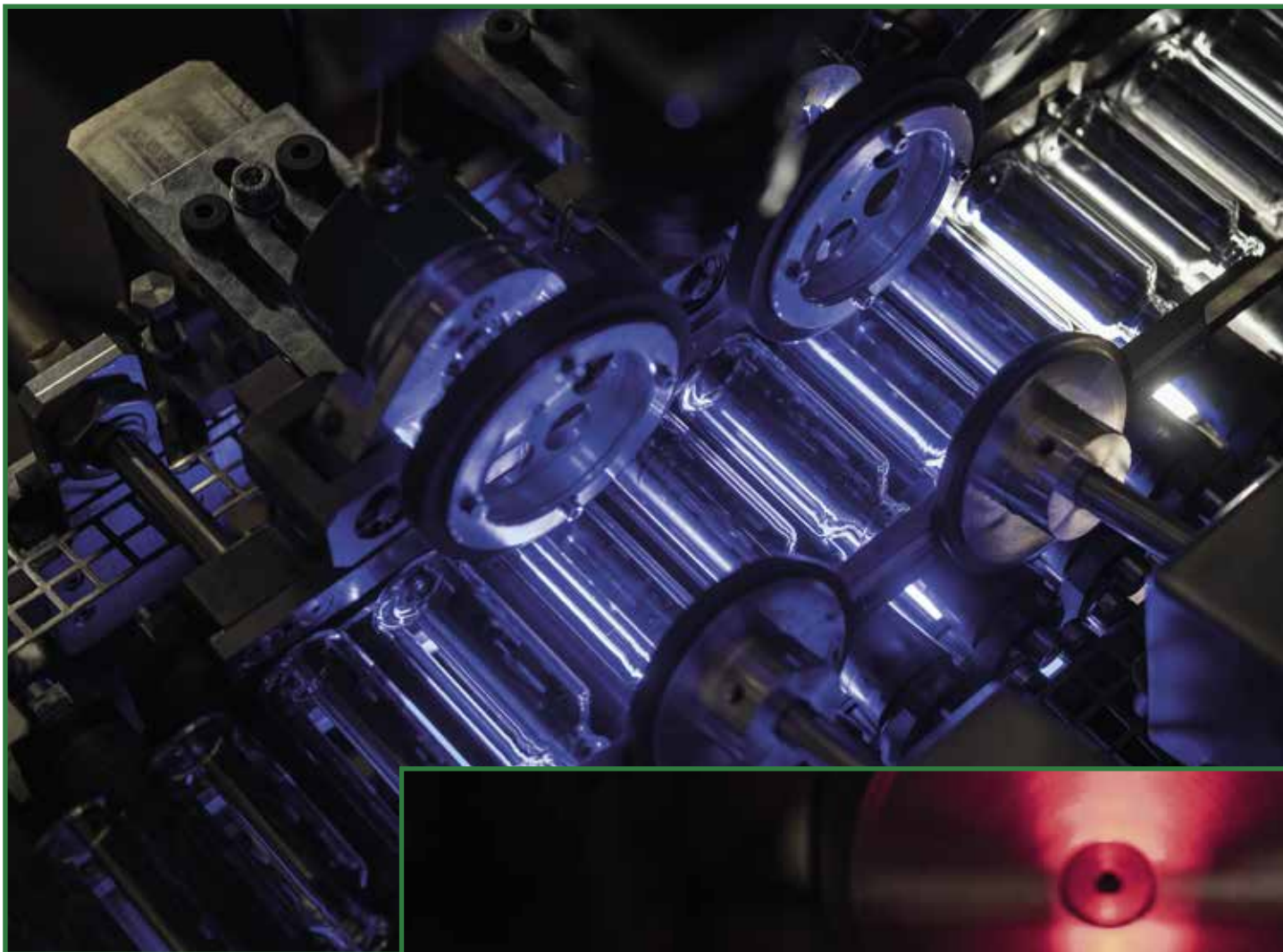
ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI)

– in particular, deep-learning algorithms – is a crucial new tool for boosting performance when it comes to inline cosmetic controls. It can help reduce false rejects, while increasing the detection rate – leading to cost savings and reducing the total cost of ownership.



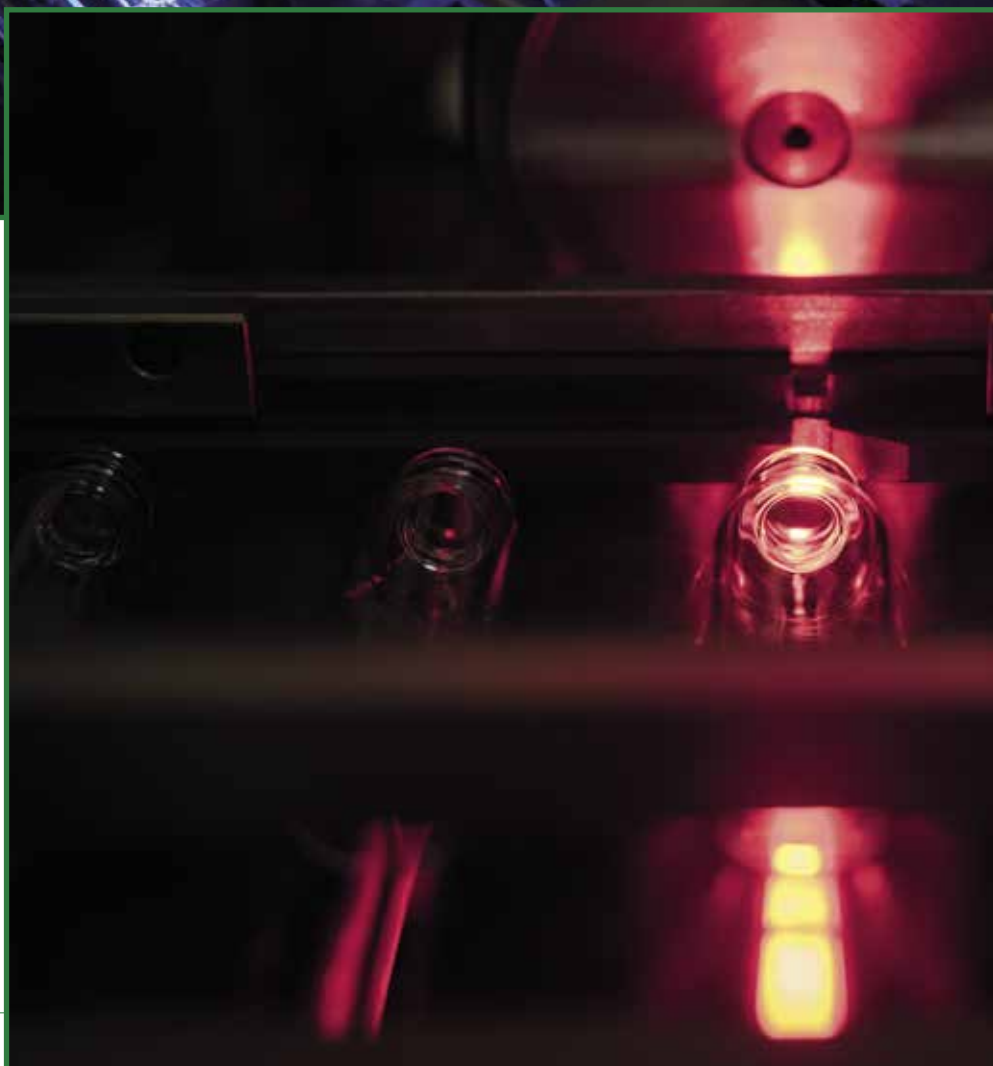
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Applying AI to the forming process can bring precision and optimization. It offers more accurate identification of cosmetic defects and the ability to differentiate them from processing marks that are not really defects but normal glass appearance. And thanks to its capacity to abstract and adapt to a high number of production variables, AI helps reduce false rejects and optimizes production. In recent production tests, there was a tenfold reduction in the false rejection rate when AI was used in the inspection of different containers for cosmetic defects.

PACKING AUTOMATION

Improving end-of-line automation is another way to optimize production. The latest





Spami technology is paving the way to a fully automated packing system – from making the box and adding the label to bringing the final bulk packaging directly to the pallet, ready for product delivery, without human intervention. The benefits include a reduction in errors and production time, as well as an increase in overall equipment efficiency.

PREDICTIVE MAINTENANCE

Automatic analysis of production data and a machine that alerts you when maintenance is required sound like the factory of the future. But, in fact, the latest Spami technology is taking things a step further, as well as improving line capability to auto-analyze production data and plan maintenance services before the line stops.

Collecting and interpret-



ing data produced by machine motors and sensors can reveal crucial new information. As well as routine maintenance, it can highlight, for example, if an obsolete component is causing rejects. This helps reduce product waste and enables maintenance operations to be planned in advance. It also ensures machines are always running in optimized conditions – and safeguards production by reducing the risk of downtime.

ONE-STOP-SHOP

Ten billion containers are produced every year with Spami's equipment, and the company is a one-stop shop when it comes to glass converting technology – for everything from tube loading to packing. Whether a complete forming production line is required or single modules, everything is tailored to a customer's requirements – to deliver state-of-the-art lines for converting glass tubing into ampoules, vials, cartridges and syringes.

Spami's equipment is trusted by many of the largest pharma packaging manufacturers – and its manufacturing lines are certified and validated to process type 1 glass around the world, with local after-sales support covering all regions. Professional project

management is also available for plant design, construction and engineering for the production of bulk and ready-to-use pharmaceutical primary packaging.

Uniquely in the industry, Spami systems are FULL CE-compliant, within a culture of innovation, rigorous standards, continuous improvement and rapid response to market needs. In Europe, this includes EU Directives 2006/42/EC, the Machinery Directive; 2014/35/EU 'On the safety of low-tension apparatus'; and 2013/30/EU 'On electromagnetic compatibility'. They also comply with North American standards, as laid down by ANSI, UL and NFPA, and Russian and Brazilian standards. ■



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