The powders are produced from molten glass compositions – shown above being poured from a furnace – which are then solidified, shattered and ground to customised particle sizes

produce more petrol than the UK consumes, but more diesel is used than the nation produces. Mr Hendry also accepted what Mr Pearson told Anglia Business in the last edition – that a regular, three yearly capital investment of about £150 million was needed to keep the plant operating.

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Machine boosts glass production

Output from a UK glass manufacturer will be boosted 300% by a new inspection system developed in Cambridgeshire.

Cera Dynamics ordered the system from automation consultancy Innomech in Ely to improve product quality further and meet global demand for its products, particularly from China and Taiwan.

"The glass is a granular material and most of the bits are a few millimetres in size," said Peter Woods, programme manager at Innomech. "Cera has to ensure the glass has the right properties to make products such as dental implants or the bead of glass holding the wires together inside a halogen bulb's glass envelope."

The new automated system is about eight feet off the ground and less than a metre wide. Parts were bought in, but the concept and design work was all done by Innomech, which also made the software.

The system gives an efficient and accurate final inspection of glass frit before shipping. A vibratory feeder with a 200 kilogram capacity spreads the powdered material onto a moving belt, which is then illuminated under white light and imaged with a line scan camera fitted with a colour filter to detect any over sized particles by taking 5,000 images a second.

The particle stream is carefully lit to avoid any false rejections caused from refracted light or reflections. Particles which don't meet the specification are automatically removed from the bulk as it passes over a series of pneumatically powered diverters. The machine's capacity is 100 kg per hour.

Cera Dynamics, which is based in Corby, Northamptonshire, originally found Innomech's website and approached the consultancy to see if they could overcome a production issue. "This is not a case of putting in a machine and making people redundant," Mr Woods explained. "This is removing a bottle neck from a production process so that you can release existing staff to do better things."

Before Innomech's machine arrived, Cera's staff had been picking out the imperfect glass granules by hand at about 25 kg and hour. "Apart from being very slow, you cannot imagine that someone is going to have the ability to concentrate assiduously every day."

After the experience with Cera, Innomech is interested in talking to other firms which want to adapt the automation system to suit different materials. "Anything which is granular and can be fed in the same way and inspected in the same way could be suitable," Mr Woods said. "It might be difficult if there was someone with a competitive product to Cera's – particularly if someone from China came along and said they would like a system as well."

There are two parts to Innomech's business. One is special purpose automation, which includes the glass inspection machine. Many of the projects help to assemble medical devices or test them.

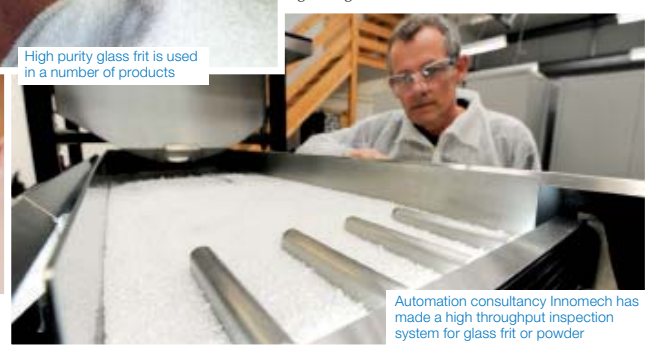
The other part is making more standard products, and Innomech makes the equipment to put drugs into gelatine capsules for companies such as Capsugel, the world's largest producer of the capsules. Innomech also makes machines for use in the early stages of drug development which can dose out very precise amounts.

Historically, Innomech's turnover has been about £2 million, and the business employs less than 20 people, most of whom are designers, engineers, controls specialists, technicians or support engineers. "Things have been very tough over the last few years," Mr Woods said. "But there is a lot of stuff in the workshop, and the number of leads we have been getting which have converted into projects is growing."

Cera Dynamics has developed a range of fluoride glass frits as components for white dental fillers, veneers and tooth implants

Photo: Exesics Photography

High purity glass frit is used in a number of products



Automation consultancy Innomech has made a high throughput inspection system for glass frit or powder