Improved industrial plastic components with X-ray

A series of X-ray scans allowed the international engineering company Siemens to improve one of their production methods. More specifically the X-ray scans helped define the optimal production parameters for the injection molding process that Siemens uses to manufacture plastic items for one of the company's industrial application unit.
The X-ray scans and following data analysis were realized in cooperation with the Imaging Industry Portal at DTU.

Challenge

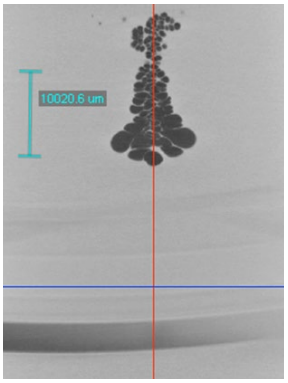
Injection molding is a well-proven technique for manufacturing items in plastic. However, the method does have a tendency to allow for the formation of tiny bubbles of air inside the object. This is normally not a problem, but in the case of one of Siemens' industrial application units, air bubbles in plastic discs may cause the system to break down.

Collaboration

Siemens entered a collaboration with the Imaging Industry Portal in order to get a better understanding of the conditions under which the air bubbles appeared in the plastic items.
A series of plastic items produced under different parameters were scanned using DTU X-ray instruments.

Results

The results clearly pointed to the optimal production regime, where there was almost no air bubble in the plastic discs.



"X-ray CT has proven a powerful tool in the optimisation of our injection-molding process. We saw consistent results showing us where air bubbles are most likely to accumulate. Bearing this in mind it is very likely that we will turn to X-ray CT again in the future"

Kasper Bondo Hansen, Siemens

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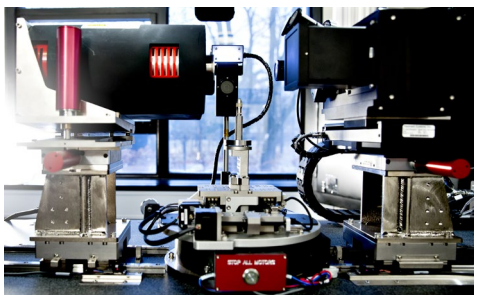

About the Imaging Industry Portal at DTU

The Imaging Industry Portal assists companies in using and implementing 3D Imaging in research, development and production.
The portal offers research-based 3D Imaging service and provides companies with the latest equipment and the most advanced knowledge within 3D Imaging and data analyis.
The Imaging Industry Portal works as a gateway to ESS and MAX IV as well as other large scale facilities.

www.imaging.dtu.dk/english/Industry-Portal