

## Popular science summary of the PhD thesis

PhD student	Ashish Chawla
Title of the PhD thesis	Advanced Process Models for Analysis and Process Control of Continuous Casting of Iron
PhD school/Department	DTU Construct

### Science summary

\* Please give a short popular summary in Danish or English (approximately half a page) suited for the publication of the title, main content, results and innovations of the PhD thesis also including prospective utilizations hereof. The summary should be written for the general public interested in science and technology. Before the thesis defence, the summary is sent to DTU's Office for Communication and Media and to the media *Ingeniøren*:

With technological advancement at its zenith since the dawn of mankind, the foundry industry lags in the age of intelligent technologies. The reason for the human-dependent nature of the operation is a conventional mindset and harsh environment where temperatures can be up to 1400°C.

The Industrial PhD at Tasso, manufacturer of Cast-Iron bars, in collaboration with the Danish Technical University, aims to automate the manufacturing process of making Cast Iron. The automation will result in a sustainable, safe, and robust production that will increase the productivity and quality of Tasso's product.

A mathematical model of the process will be developed using the fundamental principles of science. Thereafter, using artificial intelligence and modern statistical tools, the process would be digitized, which will limit human interaction in the foundry, which will ultimately result in an efficient and optimised foundry and will meet the present-day manufacturing sector standards of the 4<sup>th</sup> Industrial Revolution.

Please email the summary to the PhD secretary in the department