DANISH TECHNOLOGICAL INSTITUTE

NEWSLETTER DTI TRIBOLOGY CENTRE

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The Tribology Centre is proud to announce that their latest investment, a new, high-current ion accelerator, will soon be ready for production and R&D activities. The unit is currently being commissioned, and the site acceptance test (SAT) has just been finalized at our production facilities in Aarhus, Denmark.

The new, high-current 1090 Danfysik accelerator currently being installed at the Tribology Centre, Danish Technological Institute, Aarhus.

The new, fully automated Danfysik ion accelerator will among other things be used for boosting the capacity for production of our commercial CrN Super Slip (CrN-SS) coating. The CrN-SS coating is a unique chromium nitride coating produced by reactive sputtering (PVD) followed by ion implantation. In the industry, the CrN-SS coating is well known for enabling easy release of complicated geometries as well as providing both corrosion and wear protection during plastic injection moulding. Thus, the coating contributes to maintaining reduced cycle times and diminishing quality degradation of the moulded parts.

In addition to increasing the production capacity, the new ion accelerator will be employed for different R&D activities. In particular, the new ion accelerator will form an important technology platform in a just granted project "Super-Moulds", where the next generation of slip coatings for plastic injection moulding will be developed. In the Super-Moulds project, Danish and Swiss partners will be developing superior injection moulds by combining surface texturing with new PVD coatings and ion implantation solutions. The project has been funded by the Innovation Fund Denmark and the Swiss funds SERI and CTI under the common frame of EUREKA (E!11229), enabling a gearing of the Danish and Swiss funds.

The Super-Moulds project provides a unique opportunity for developing future injection moulds and processes, which will increase the productivity through shorter cycle times due to an easier demoulding process. The project builds on a ground-breaking method for quantifying the ejection forces during the actual demoulding process.

The Super-Moulds project integrates knowledge along the entire value chain from the plastic producers, the toolmakers and the moulding companies to specialists in surface texturing, coating development, fundamental surface characterisation and test-moulding. If you are interested in keeping up with the Super-Moulds project and to be invited to open seminars, please send an e-mail to lpn@dti.dk, and we'll add you to our newsletter.

Recently, the Danish and Swiss partners of the Super-Moulds consortium were gathered for a kick-off meeting

Super-Moulds project partners:

- **Institute of Applied Plastics Research at Engineering College Fribourg (iRAP, Ch)**
- **DuPont Performance Materials (Ch)**
- **GF Machining Solutions (Ch)**
- **Winther Mould Technology A/S (DK)**
- **Danish Technological Institute (DK)**
- **Danish Fundamental Metrology (DK)**
- **Novo Nordisk A/S (DK)**
- **Gibo Plast A/S (DK)**
- **SP Moulding A/S (DK)**
- **Danish Plastics Federation (DK)**

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