



Mechanical Engineering

Our undertakings of integrating machine elements and using advanced mechanical technologies contribute to innovate manufacturing processes and improve in productivity and quality of steels.

Powder Handling

We are developing advanced technologies for powder handling and granulation processes. The aim is to improve the efficiency and quality of steel production.

Electromagnetic

Simulation



Simulation of granulation behavior by discrete element method (DEM)

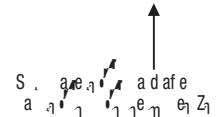
Vibration

Controlled granulation (CGL) is a key technology for steel production. It involves the use of electromagnetic support to stabilize the strip during granulation.

Vibration control
 \Rightarrow U_{vib} \Rightarrow U_{mag}

Natural frequency
 \Rightarrow f_{nat}

Strip stabilization



Strip stabilization with CGL electromagnetic support

Dynamics and Mechanism Analysis, Vibration & Sound Analysis

Multi-body dynamics (MBD) is used to analyze the complex interactions between different components of a machine. This helps in identifying potential issues and optimizing the design.

Electromagnetic

Simulation



Simulation of strip lateral dynamics (meandering) by MBD

Inspection

Structural health monitoring (SHM) and damage assessment are crucial for ensuring the safety and longevity of steel structures. Infrared thermography is a key technique used for this purpose.

Structural health monitoring and damage assessment of steel structures by infrared thermography

Automation Technology

Automation technology is being used to streamline and optimize steel plate conditioning work. This includes the use of advanced sensors and control systems to ensure consistent quality and efficiency.

Automation of steel plate conditioning work