

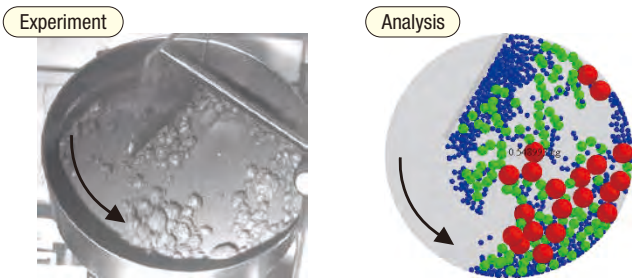


Mechanical Engineering

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

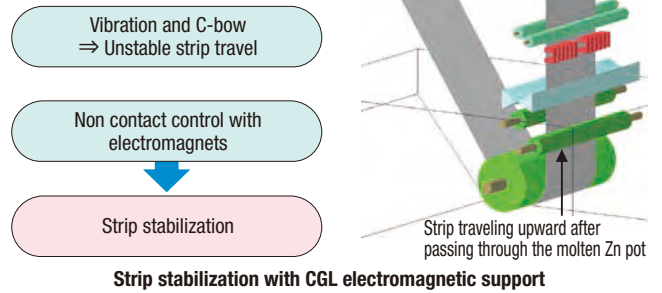
We are developing advanced powder handling techniques, for high efficiency mixing, granulation, and separation. The targets of this technology vary from treating raw material for blast furnace reforming coarse slag produced during iron and steel manufacturing processes.



Simulation of granulation behavior by discrete element method (DEM)

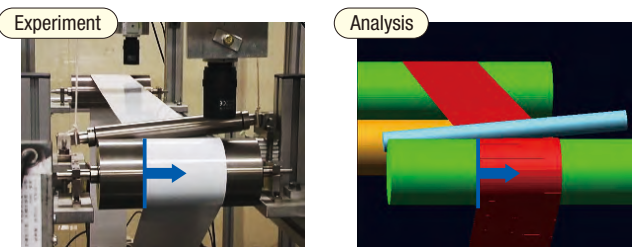
Vibration Control Technology

Continuous galvanizing line (CGL) electromagnetic support technology stabilizes steel sheet strips while strips travel CGL. In this technology, electromagnetic forces that induced by electromagnets control vibration with no contact and prevent camber of strips. We are working on further application of this technology, aiming to stabilize strips after they pass through the molten Zn pot.



Dynamics and Mechanism Analysis, Vibration & Sound Analysis

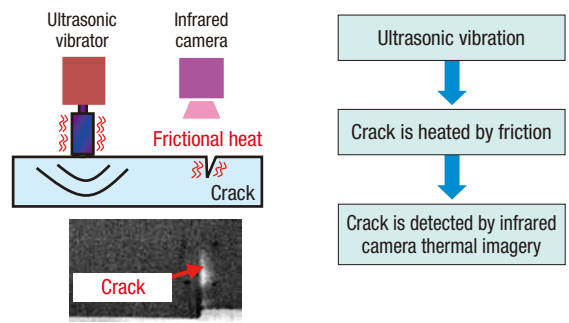
Multi body dynamics (MBD) is a technology for analyzing the movement and mechanism of machines which consists of various interconnected parts. By modeling mechanical parts of production facility, it is able to investigate high-speed machine movements. We applies MBD technology to develop new iron and steel manufacturing processes.



Simulation of strip lateral dynamics (meandering) by MBD

Structural Health Monitoring

Maintaining facilities in good condition is crucial for stable production of high quality steel. Our original facility diagnosis technologies enable longer facility lifecycle and efficient maintenance procedure.



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

Automation Technology

Automation technologies disengage workers from dangerous work, such as handling of molten steel in hot environment, welding or grinding of steel products in dusty environment. In order to reduce those dirty, dangerous and disagreeable work and also improve productivity, we utilize mechatronics for automation by adopting suitable method for each facility and work.



Automation of steel plate conditioning work