CRM Group

From years, the **CRM Group** is involved **in improving** the process and **products** in the metal industry. The industrial systems developed inside the Sensors And Measurements department are particularly devoted to help controlling the process and ensuring the **quality of the products.**

The industrial conditions in which these sensors have to operate, allow to cope with most production environments. Therefore, these developments could find **applications in other sectors** such as glass, paper, ...

Competencies

The **CRM Group** staff has developed advanced skills in: **spectroscopy,** continuous and pulsed **lasers, on-line microscopy,** optical design, visible and infrared cameras, specific **lighting,** home-made electronic hardware and software, data analysis and signal processing, **image processing** algorithms, **real-time** and **multi-threading** software, adapted mechanics, housing and cooling for **harsh and hot environment,** closed-loop control, ...

"To develop environment friendly processes & products for a sustainable future is our priority"

CRM Group
Avenue du Bois Saint-Jean 21, P59
B-4000 Liège

Contacts :
G. Moreas - genevieve.moreas@crmgroup.be
G. Monfort - guy.monfort@crmgroup.be
V. Tusset - vittorino.tusset@crmgroup.be
J. Borlée - jean.borlee@crmgroup.be

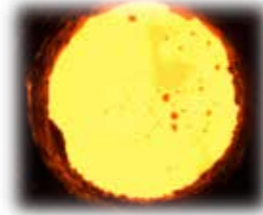www.crmgroup.be

CRM GROUP

SENSORS & MEASUREMENTS
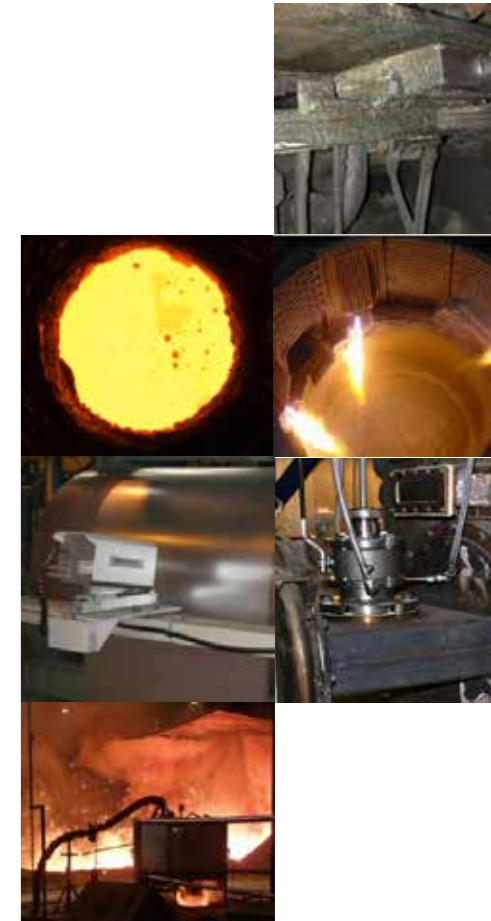
"Turning on-line measurements into optimum quality"

An Outline of sensors ...

Liquid level measurement

o Measurement of liquid level in harsh conditions: high temperature, dust, …
→ Focus laser beam onto a molten metal surface

Dynamic positioning

o Continuous follow-up of the position of mechanical parts to allow closed loop control during production
→ Adjust the distance between the wipers to optimise the galvanising process

CrossBow Meter

o Continuous shape measurement of highly reflective product
→ Shape measurement of galvanised strip to continuously control the position of the guiding rolls and to improve the homogeneity of the coating thickness

Infrared vision

o Characterisation of products using temperature and emissivity
→ On-line monitoring of steel pickling
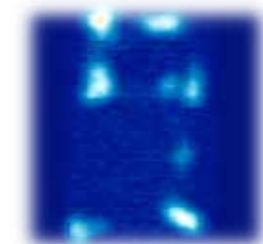
RollScope

o On-line visualisation and analysis of moving surface in very harsh environment
→ Continuous control of roll degradation in steel rolling

OLM - On-Line Microscopy

On-line characterisation of moving surface (up to 30m/s) at microscopic scale

GaScope

o On-line characterisation of microstructures and surface textures
→ Real-time quality assessment of galvannealed coating

SRM - Surface Roughness Measurement

o On-line quality control of roughness
→ Timely detection of wear of rolls and improper roll forces

WaviSurf

o Waviness and roughness measurement for quality assessment
→ Better control of process conditions and product quality

FlowLIBS

→ Control of the blast furnace by continuously monitoring the composition and temperature of the molten hot metal
→ Analysis of the silicon concentration in the runner

Serafin

→ Control of preheating and oxygen lancing in Electric Arc Furnaces
→ Optimisation of the operating pattern and blow-back prevention

OTTM - Oxide thickness and temperature measurement

→ On-line thin coating quality control
→ On-line FeO thickness measurement at nanometer scale

Blade wear monitoring

→ Shape control of moving profiles
→ Monitoring of side-trimmer degradation in strip production

Paralign

→ Guiding rolls alignment in all kind of continuous lines by use of optical gyroscopes