European Metrology Research Programme

EURAMET
European Association of National Metrology Institutes

Industrial Innovation

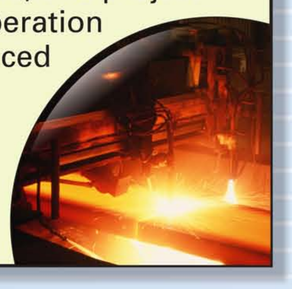
An overview of the funded projects from the EMRP Call 2010 – INDUSTRY

Improving the efficiency of industrial processes

High temperature metrology for industrial applications (IND01)

Reducing energy use through accurate temperature measurement

Industries cannot accurately measure high temperatures (above 1000 °C) so they often run processes too hot and inefficiently. By developing a range of measurement methods accurate at high temperatures, this project will enable more efficient operation of industrial processes, reduced energy use and lower greenhouse gas emissions.



Advancing the European electronics industry

Electromagnetic characterisation of materials for industrial applications up to microwave frequencies (IND02)

Measuring high-speed electronics

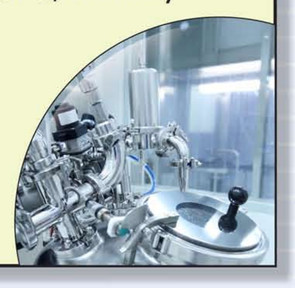
The improved techniques produced by this project will support innovation in the European electronics industry by providing reliable nano, micro and macroscale measurements needed to cope with the increasingly fast operational speeds of electronic devices. It will also help make such devices smaller.

Enabling higher pressure industrial processes

High pressure metrology for industrial applications (IND03)

High-pressure measurements for industry

The pressures used in some modern industrial systems are higher than the current European calibration capability, which is limited to around 1 GPa. This project will develop new standards to extend this calibration capability to 1.6 GPa, thereby supporting the use of high-pressure technologies and improving product quality.



Removing radioactive waste from recycled scrap metals

Ionising radiation metrology for the metallurgical industry (IND04)

Preventing the spread of radiation in European steel

Millions of tonnes of scrap steel are produced each year, which could potentially be contaminated by radioactive sources. This project will produce new reference materials, methods and devices to improve the detection of radioactivity in scrap loads - reducing human health risks, trade disputes and environmental exposure across Europe.

Widening the use of polymers in industry

Dynamic mechanical properties and long-term deformation behaviour of viscous materials (IND05)

Improving confidence in polymer properties

Polymers are often used to reduce the cost and weight of manufactured goods but they are viscous and therefore they can deform under stress and over time. This project will develop measurements of viscous materials, which will help increase the use of polymers in industry and the uptake of recycled materials.

Improving data security with quantum technologies

Metrology for industrial quantum communication technologies (IND06)

Guaranteeing the security of sensitive data

Quantum Key Distribution (QKD) is a quantum communication technology that can theoretically guarantee encryption keys have not been intercepted. However there are no agreed methods to demonstrate its robustness. This project will develop new measurement techniques and input in to standards and regulation in order to validate the practical use of QKD.

Enabling the development of thin film technology

Metrology for the manufacturing of thin films (IND07)

Helping thin film technologies become a reality

Thin film materials possess novel properties not found in bulk materials that enable their use in flexible LCDs and solar panels. This project will improve the nanoscale measurements needed to develop thin film technologies, improving our understanding of film properties and reducing material and energy costs.

New and advanced magnetic sensors

Metrology for advanced industrial magnetics (IND08)

Improving high-resolution electronic measurements

Magnetic sensors are used in industries that require accurate high-resolution data e.g. the consumer electronics and car industries. This project will develop methods to characterise new magnetic materials that could increase the efficiency of electrical equipment, help calibrate magnetic sensors, and enable manufacturers to develop new types of sensors.

Ensuring rapid changes in force do not affect measurement

Traceable dynamic measurement of mechanical quantities (IND09)

Force, torque and pressure measurement over time

Current measurement limitations for force, torque and pressure limit the reliability of vehicle safety and material strength assessments. This project will improve safety by establishing traceable dynamic measurements for force, torque and pressure and precise dynamic mechanical test signals.

Europe's National Measurement Institutes working together

The European Association of National Metrology Institutes (EURAMET) has implemented the European Metrology Research Programme (EMRP), a programme with a value of over 400 M€, organised by 22 NMIs and supported by the European Union.

Full details can be found at: **www.euramet.org**

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