Emission control becoming important in the agricultural sector

Emitec presents new concepts for emission control

- Innovations for exhaust gas treatment in tractors and agricultural machinery
- First ever continuous Particulate Matter and NO\textsubscript{x} reduction of tractors
- AdBlue dosing system for agricultural machinery

From 2011 also tractors and diesel agricultural machinery with diesel engines will have to comply with more stringent statutory emission limits. Catalysts and filters will be applied for emission control. The further tightening of the emission limits in 2014 will require even higher performing exhaust gas aftertreatment systems.

Emitec Gesellschaft für Emissionstechnologie mbH, Lohmar, as a specialist in exhaust gas aftertreatment and world market leader in steel catalyst substrates and particulate filters, is now offering serial production components and systems for agricultural applications as well.

Top innovation: a combined particulate and NO\textsubscript{x} reduction system

The company will unveil its new innovation, the SCRI\textsuperscript{®}-System, for agricultural tractors at the Agritechnica. SCRI\textsuperscript{®} was developed by Emitec as an integrated system combination for emissions reduction of Particulate Matters and Oxides of Nitrogen (NO\textsubscript{x})

The system works on the principle of selective catalytic reduction (SCR) for NO\textsubscript{x}-reduction. Small quantities of an aqueous urea solution (AdBlue) are being injected into the exhaust gas, controlled according to demand. Urea is converted to ammonia in the exhaust gas and the oxides of nitrogen react with ammonia in the presence of the SCR-catalyst to form the natural components of air, that is, nitrogen, water and carbon dioxide.

The continuous-operating, maintenance-free PM-METALIT particulate filter is integrated in a SCRI\textsuperscript{®}-System. It performs simultaneously the elimination of soot particles, intense mixing of exhaust gas with the AdBlue as well as complete evaporation and ammonia generation of the injected solution.

Such preparation of the exhaust enables optimum functionality of the SCR-Catalyst; applying Emitec's high-efficient, structured metal catalyst substrates allows most compact system sizing for installation in agricultural machinery and tractors.

The SCRI\textsuperscript{®}-System is particularly suitable for serial and retrofit applications for tractors.
A complete solution for serial and retrofit applications
Emitec developed a complete system for SCRI® consisting of an AdBlue tank, an electronic control system, a metering pump, a dosing control valve and injector, the electronic control unit and associated sensors and pipes. The system can operate autonomously, that is, independently from the engine management system, if required.

This makes the system particularly suitable for serial and retrofit applications.

Equipped with the SCRI® emissions control system engines can be tuned for maximum fuel efficiency, which reduces diesel consumption by around five percent and helps to quickly recover the initial investment. All Emitec components are made from metal and designed for harsh everyday work conditions and long operating times.

Emitec will present the first production-ready compact SCRI® system for combined PM and NOx reduction in tractors at stand B66 in hall 013 (see figure).

Photo: Emitec
Emitec: A brief company profile

Emitec Gesellschaft für Emissionstechnologie mbH was founded in 1986 with three employees. Today, the company is a world leader on the metal substrate market for vehicle exhaust gas catalysts and diesel particulate filters. Complete SCR systems round off this product range. Since its foundation Emitec has sold more than 100 million metal substrates of the highest quality with no field failures.

The company employs around 750 people in Lohmar and Eisenach, Germany, at the Fountain Inn plant in South Carolina, USA, and at the plant in Pune, India. Development centres are based in Lohmar and Eisenach.

Emitec’s most important markets are in Europe, North America and Asia. The company has subsidiaries in China, Japan, Korea and Vietnam.

The company’s customers include the major car-, truck- and motorcycle-manufacturer from across the world as well as in the non-road sector producer of tractor-, agricultural and construction engines, recently of diesel locomotive engines, too. Emitec owns over 1,800 patents worldwide, a fact that reflects the company’s innovative strength.

Product Range

Metal catalyst substrates and diesel particulate filters for engine exhaust gas aftertreatment:
METALIT® Metal Substrates, metal substrates with structured foils (LS-Design®, PE-Design™ for ‘turbulent’ cat), Conical Catalyst substrates (ConiCat®), Lambda Sensor Catalysts (Lambdasondenkat™), Electrically Heated Catalysts (EMICAT®), Partial Flow P-DPF Diesel Particulate Filter (PM-METALIT®), Pre Turbocharger Catalysts (Pre Turbo METALIT™), Hybridkat™, Hydrolyse Catalyst for SCR-Systems, Sensor-Catalyst (Sensorkat™) for NOx-Adsorber, Emitec CompactCat®, SCRi® - System

System Components:
AdBlue Dosing System
EMITEC Gesellschaft fuer Emissionstechnologie mbH at a glance:

**Management:**
- Wolfgang Maus (Chairman)
- Andreas Aumüller

**Employees 2009:**
- Approx. 750, including 30 trainees

**Revenue 2008:**
- 170 million euros

**Percentage of sales:**
- Automotive industry: approx. 90%
- Export volume: approx. 50%

**Administration, production and development sites and their products:**
- Lohmar, Germany: Prototypes and series catalyst substrates, head offices, research and development
- Eisenach, Germany: Series catalyst substrates, test centre
- Fountain Inn, SC, USA: Series catalyst substrates
- Pune, Mumbai District, India: Motorcycle catalyst substrates
- Tokio, Japan: Sales office
- Seoul, Korea: Sales office

**Major customers:**
AvtoVaz, Bajaj, BMW, Caterpillar, DAFTRUCKS, Dachangjiang, Daewoo, Daimler, Fiat, Hyundai, Liebherr, MAN, Opel, Porsche, Renault, Scania, Toyota, TVS, Volkswagen Group, Volvo, others