

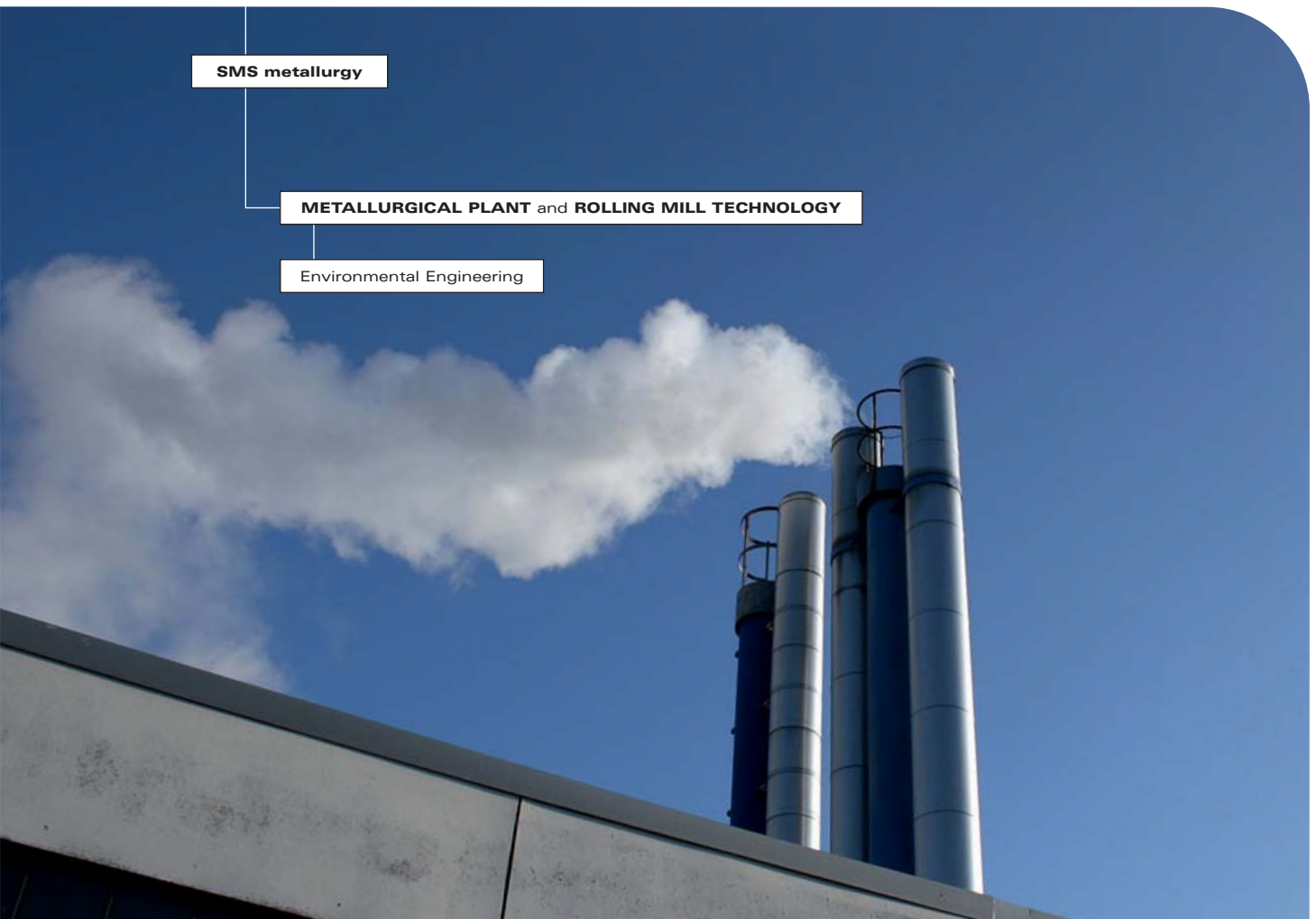
SMS ELEX

ENVIRONMENTAL TECHNIQUE ESP for steelworks

SMS metallurgy

METALLURGICAL PLANT and ROLLING MILL TECHNOLOGY

Environmental Engineering



ESP, ELECTROSTATIC PRECIPITATORS for converter steelworks

SMS ELEX AG

To strengthen their activities in the field of environmental engineering, SMS Siemag AG together with Elex AG jointly founded a new company, SMS Elex AG, on 1 October 2008. This company has its headquarters in Schwerzenbach near Zurich.

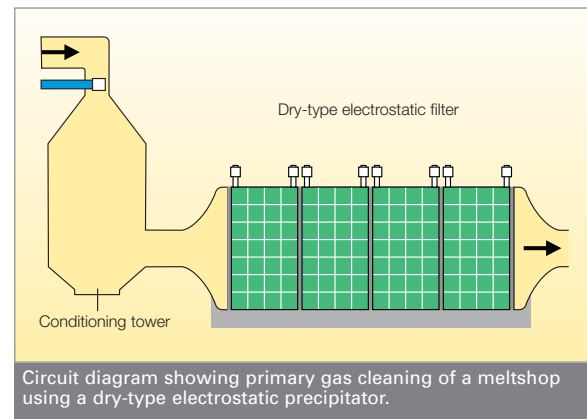
SMS Elex AG will in future build and market a new generation of dry-type and wet-type round electrostatic filters for converter meltshops, including the pertaining units such as conditioning tower and induced-draft fans. These precipitators effectively clean the CO-containing process gases while keeping costs low and thereby meet the most stringent safety and environmental standards.

The new company will also be focusing on the development of new flue-gas cleaning technologies for steel production.



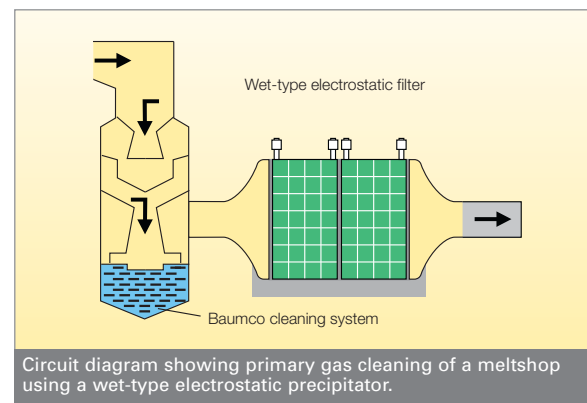
After signing of the contract (from left): Dr. Guido Kleinschmidt, Rüdiger Zerbe, Christof R. Meyerhofer and Ulrich Leibacher.

By setting up SMS Elex AG, SMS Siemag and Elex wish to jointly further pursue their strategy of further improving the environmental and energy balance of their plants and of making their production processes more economical for their customers. The founding of SMS Elex AG will serve to consolidate and enhance the close cooperation between the two companies. Both companies have successfully handled numerous orders in the field of electrostatic precipitators.



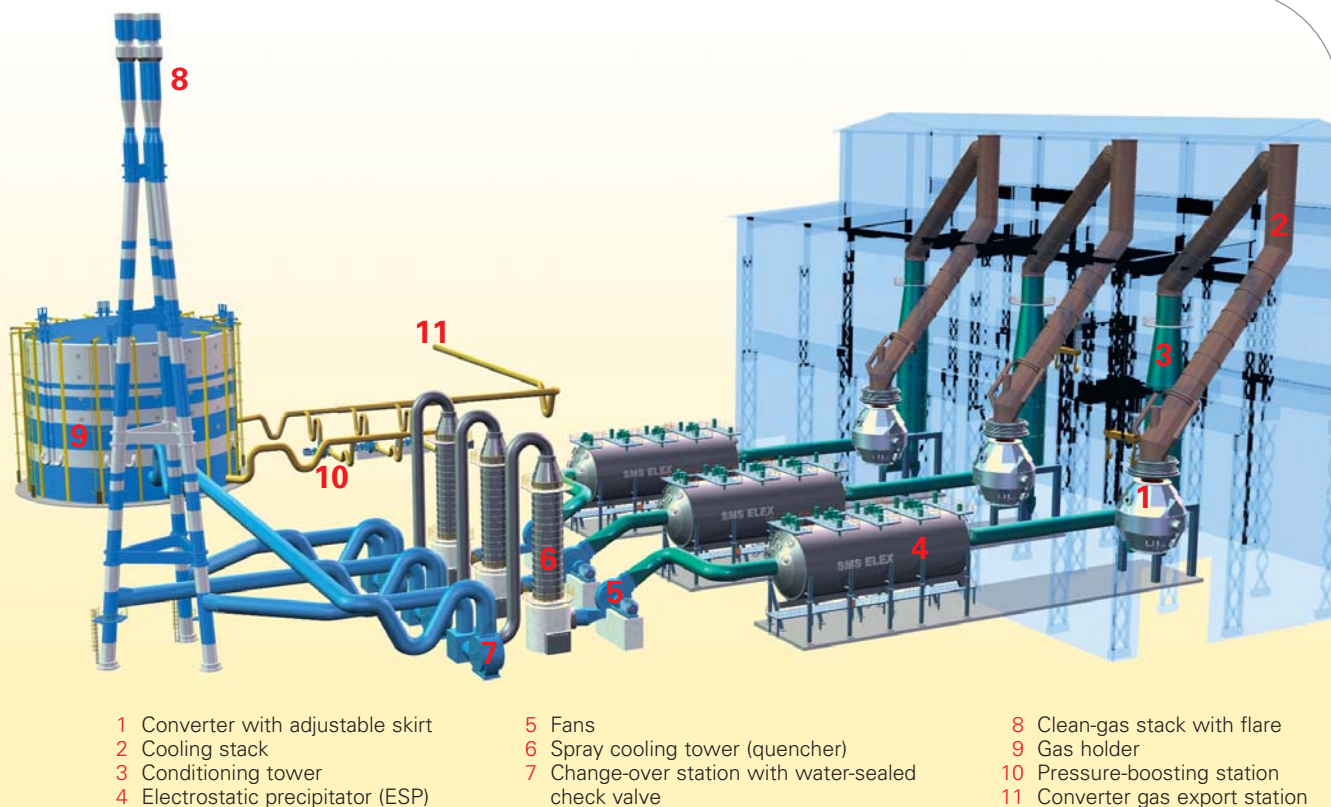
Circuit diagram showing primary gas cleaning of a meltshop using a dry-type electrostatic precipitator.

The dry-type electrostatic precipitators together with a conditioning tower are suitable for the building of new converter meltshops. The low pressure loss, the maintenance-friendly design and the high service life of the precipitator unit ensure low operating costs. Thanks to the high efficiency and separating output, low residual dust contents can be attained and ambitious environmental standards observed.



Circuit diagram showing primary gas cleaning of a meltshop using a wet-type electrostatic precipitator.

For meltshops equipped with the wet cleaning system for converter gases (for example the BAUMCO system), SMS Elex has developed a wet-type electrostatic precipitator. This innovation, which is the only one of its type in the world, allows the integration of an electrostatic precipitator into the existing gas cleaning system. The convincing features of this solution are low investment costs and progressive plant technology which make it possible to react quickly to more stringent environmental regulations.



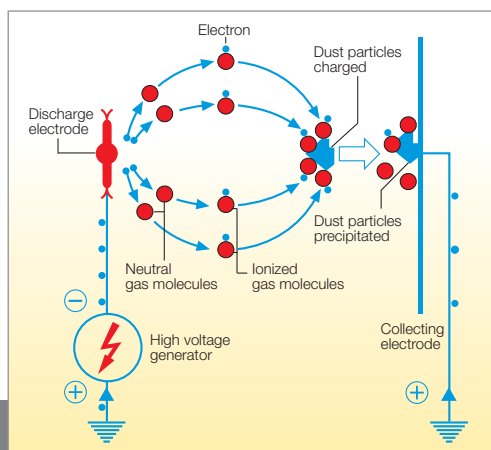
Schematic view of the primary gas-cleaning system of a converter meltshop with ESP.

GAS CLEANING PLANT IN A CONVERTER MELTSHOP

The dust-laden gas arising during the converter process is collected by the primary gas collection system via the converter mouth and conducted to the cleaning and recovery units. The gas is cooled in the conditioning tower before cleaning is performed in the dry-type electrostatic precipitator. Here, extremely small dust particles are efficiently separated. The electrostatic precipitators achieve a degree of separation of well over 99.8 %. In the downstream spray-cooling tower, the cleaned gas is cooled in order to reduce its volume. Depending on the operating phase of the converter, the gas is either conducted to the flare or sent to the gas holder for intermediate storage. For this, the change-over station ensures reliable switch-over. From the gas holder, the converter gas is fed to other consumption points in the works via a pressure-boosting station. The energy contained in the combustible converter gas is used in place of other energy sources. Both the energy costs and the output of CO₂ are thereby reduced considerably.

OPERATING PRINCIPLE OF AN ELECTROSTATIC PRECIPITATOR

The electrostatic precipitator is suitable for the separation of solid particles from gas. Electrons are emitted from discharge electrodes which have been charged with a rectified negative high voltage. These electrons migrate to the collecting electrodes and thereby meet gas molecules and dust particles. As the electrons accumulate on the dust particles, the latter become negatively charged, and the electric field transports them to the earthed collecting electrodes where they remain.



Operating principle.

MEETING your EXPECTATIONS

SMS SIEMAG AG

Steelmaking Plants and
Continuous Casting Technology Division

Eduard-Schloemann-Strasse 4
40237 Düsseldorf, Germany

Phone: +49 (0) 211 881-6915

Fax: +49 (0) 211 881-6982

E-mail: steelmaking@sms-siemag.com

Internet: www.sms-siemag.com

SMS ELEX AG

Jan Adams

Eschenstrasse 6
8603 Schwerzenbach, Switzerland

Phone: +41 (0) 44 806-1646

Fax: +41 (0) 44 806-1649

E-mail: jan.adams@sms-elex.com

Internet: www.sms-elex.com

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