Contribution ID: **200** Type: **Oral Presentation**

Optimized Control of an EAF off-gas system by Video Analysis

Wednesday 8 October 2025 10:00 (20 minutes)

Gas cleaning and dedusting systems are essential for any steelmaking facility, but they often face significant fluctuations in operational requirements. Emissions can vary based on different input materials or product mixes, necessitating adjustments in the dedusting system's operation. Manual optimization by operators is challenging due to fluctuating operating parameters, and furnace underpressure measurements used as control signals often suffer in the rough working environment.

To address these inefficiencies, an intelligent sensor system based on video analysis was developed. This innovative system uses advanced video analysis techniques to monitor and optimize dedusting systems in real-time.

Implemented at an Electric Arc Furnace (EAF) for stainless steel production, the system continuously analyzes video data to detect and respond to fluctuations in operational parameters more accurately and efficiently than existing sensor technologies. This ensures peak efficiency, reducing energy consumption and improving overall performance.

Initial results show improvements in energy efficiency and operational effectiveness. The achieved savings and enhanced control over emissions will be presented to demonstrate the system's capabilities. These results highlight the potential for widespread adoption of video-based intelligent sensor systems in the steelmaking industry, paving the way for more sustainable and efficient operations.

Primary authors: Mr GLECHNER, Julian; Mr AULA, Matti; Mr FISCHER, Paul; STEINPARZER, Thomas (Primetals Technologies Austria)

Presenter: STEINPARZER, Thomas (Primetals Technologies Austria)

Session Classification: Energy Efficiency & Recovery

Track Classification: Environmental and energy aspects in iron and steelmaking