Contribution ID: **402** Type: **Oral Presentation**

Comparative mineralogical characteristics of different Iron Ores

Thursday 9 October 2025 11:40 (20 minutes)

The formation and evolution of our planet have been marked by numerous geological events and transformations, significantly influencing the mineralogical characteristics of iron ore deposits. Iron ore, an important raw material of the steel industry, is globally recognized for its critical role in steel production. Understanding its intrinsic properties is essential for optimizing processes, reducing pollutant emissions, and achieving cost savings.
Despite this, the steel industry often relies solely on the chemical and physical attributes of iron ore for its transformation into agglomerates used in reduction reactors, thereby missing opportunities for enhanced process control.
This study delves into the deeper mineralogical characteristics of iron ores, highlighting the microscopic differences found in samples from various regions. By employing advanced techniques such as optical microscopy, X-ray diffraction, and Scanning Electron Microscope, we aim to provide a comprehensive analysis that supports more efficient and sustainable steel production.

Primary authors: RODRIGUES, Erica; Ms VIEIRA, Maria Beatriz

Co-authors: GRUVIRA FERNANDES CARLOS, André; STOCKL MARTINS DA SILVA, Deborah; SOARES DO ESPÍRITO SANTO, Kamila; Ms SERRA DE MELLO, Lillian

Presenter: RODRIGUES, Erica

Session Classification: Ironmaking Sintering & Pelletizing

Track Classification: Ironmaking - Sintering and pelletising