



Contribution ID: 81  
Paper

Type: Oral Presentation - Presentation will be held without submitting a Full Paper

## Accelerating decarbonization in the steel industry through process design and optimization

*Wednesday, 21 May 2025 16:30 (20 minutes)*

The steel industry is a major contributor to global greenhouse gas emissions. As the world transitions to a low-carbon economy, the steel sector faces increasing pressure to reduce its environmental impact.

In this presentation, we will explore how process digital twins, powered by advanced modelling and simulation tools, can be leveraged throughout the steel manufacturing lifecycle to drive sustainability initiatives. We will discuss using digital twins to model and optimize steel production processes for improved cost and energy efficiency, integrating CCUS technologies, as well as green hydrogen process design and scale-up to support the transition to hydrogen-based steel production. By attending this session, participants will gain insights into how process digital twins can transform the steel industry's journey towards decarbonization, helping producers achieve their ambitious sustainability goals.

### Speaker Country

UK

### Are you interested in publishing the paper in a Steel Research International special issue?

**Primary author:** Mr PEREIRA, Simao Fernandes (Siemens Industry Software GmbH )

**Presenter:** Mr PEREIRA, Simao Fernandes (Siemens Industry Software GmbH )

**Session Classification:** Industry 4.0: Automation, modelling and on-line process analyses

**Track Classification:** Industry 4.0: Automation, modelling and on-line process analyses