

Sustainable PM high-speed steels: Options and challenges

Monday, 24 March 2025 15:30 (20 minutes)

A sustainable steel production involves using renewable energy sources, reducing carbon dioxide emissions, and minimizing and recycling waste during the production process. However, the most significant effect in case of tool steels is increasing the scrap rate during melting, and more specifically using correctly sorted scrap. To achieve this, a circular economy involving steel producer, customer and scrap dealer must be set up. One challenge is that high performance tools are mostly coated to improve their performance. However, coatings contain elements which are usually not used as alloying elements in tool steel production. Hence, the properties of the tooling material could be influenced by introducing unwanted alloying elements via scrap. A solution would be to remove the coating prior to using the scrap for new steel production. The aim of this work was to elucidate the usage of correctly sorted scrap in terms of CO₂ emission and how it possibly affects material properties and performance in application.

Speaker Country

Austria

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

No

Primary author: Dr LEITNER, Harald (voestalpine Böhler Edelstahl GmbH & CoKG)

Presenter: Dr LEITNER, Harald (voestalpine Böhler Edelstahl GmbH & CoKG)

Session Classification: Sustainability

Track Classification: Production: Reducing of the CO₂ footprint