Invitation to the 83rd AMAP Colloquium

Presentation by

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H2 and H2O – Challenges for the Refractory Lining Concepts of Aluminum Furnaces

On Thursday, ***January 18th, 2024 at 4 p.m.***
with subsequent discussion at AMAP

All interested persons are sincerely invited to the AMAP foyer.
Snacks and refreshments will be available.

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H2 and H2O – Challenges for the Refractory Lining Concepts of Aluminum Furnaces

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Abstract

The current situation:

“Hydrogen shall be the new Carbon” and therefore worldwide investigation programs to develop industrial processes with significantly reduced carbon footprint were launched.

The presence of Hydrogen (H2) in the combustion atmosphere of a furnace unit requires the consideration of various decision criteria when selecting suitable refractory materials.

When selecting materials, a number of parameters and boundary conditions such as H2 concentration in the furnace atmosphere including residual components, furnace temperature and process parameters must be taken into account.

This presentation will give an overview of current lining concepts, as well as discuss known interactions, theoretical thermodynamical calculations and findings from practice.

The resulting elaboration can serve employees of aluminum smelting plants and refractory departments as a guideline for material selection in aggregates with increased H2 content.