

Poster 7



Anna Voytyukova

## Paint recycling for end-of-life construction cladding

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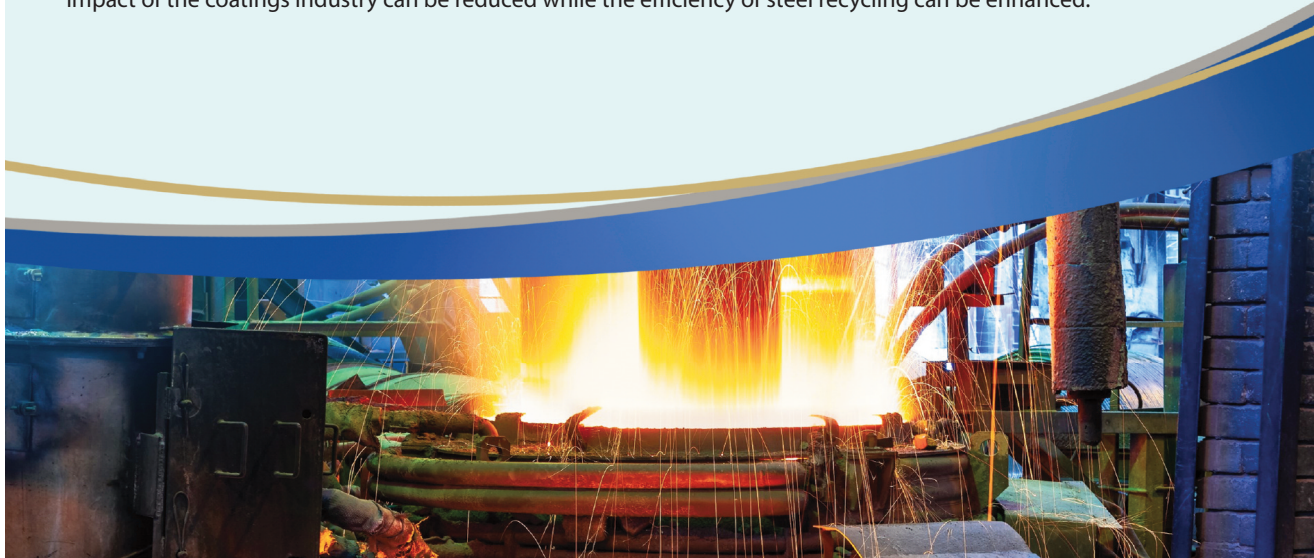
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### ABSTRACT:

The annual global production of pre-painted metal reaches 1.5 billion square meters, with 76% of it utilised in the building industry, particularly for construction cladding. At the end of life, the cladding is recycled, and the metal is recovered. However, the organic coating is typically incinerated, resulting in material waste and increased greenhouse gas emissions. This project aims to develop methods for recycling the organic coating from pre-painted metal, thereby reducing the carbon footprint and promoting the circular economy.

The research investigates various paint removal techniques, including cryogenic treatment and induction heating, while evaluating their impact through life cycle assessment (LCA). The initial results show that the cryogenic treatment promotes the decoating of the PVC plastisol from steel, while the polyester coating exhibits cracking without delamination. The second project goal is the recovery of paint constituents, primarily titanium dioxide, which significantly contributes to the carbon footprint associated with organic coatings.

Recycling organic coatings from pre-painted metal can reduce the reliance on virgin raw materials. The environmental impact of the coatings industry can be reduced while the efficiency of steel recycling can be enhanced.



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