

Technical University of Denmark



## Adhesion Strength of Biomass Ash Deposits

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## Adhesion Strength of Biomass Ash Deposits

Short introductory summary:

Ash deposition on boiler surfaces, especially on convective pass tubes, is a major problem encountered during biomass combustion, hindering heat transfer to the steam cycle. Therefore, regular removal of ash deposits is essential for optimal boiler operation. This study investigates the shear adhesion strength of biomass ash deposits on superheater tubes. Artificial biomass ash deposits were prepared on superheater tubes and sintered in an oven at temperatures up to 1000°C. Subsequently, the deposits were sheared off with the help of an electrically controlled arm. Experiments were performed to analyze the effect of sintering temperature, ash composition, measurement temperature, sintering duration, ash particle size and steel type. In addition to investigating fly ash obtained from biomass boilers, model ash mixtures were developed to understand the effect of different ash components (K, Si, Ca, etc.) on deposit adhesion strength.

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Presenter's biography:

Yashasvi Laxminarayan is a PhD student at the Technical University of Denmark, with particular interests in biomass combustion, ash deposition and removal in boilers. He holds a Master's degree (cum laude) in Chemical engineering from TU Eindhoven.

*Biographies and Short introductory summaries are supplied directly by presenters and are published here unedited*

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