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Aspects of corrosion and slagging in cofired biomass power plant characterized by Thermo-Optical Measurement technique

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The optimization of the combustion process of biomass and coal and the analysis of combustion products and the possible reduction and capture during combustion, are key factors for the reduction of CO₂ emission. Also the observation of corrosion, slagging and fouling is one of the most important focus points due to the development of new technologies to reduce cost of operation, increase efficiency of combustion and safety of the complete process and handling. The Fraunhofer ISC works since over 20 years on the development of new measuring methods to optimize the heat treatment of material. One special focus lies on Thermo-Optical Measurement systems designed for in situ characterization of materials within each kind of heat treatment under variable conditions. Measurements can be conducted under temperature conditions ranging from room temperature up to 2400 °C. This so-called Thermo-Optical measuring method, briefly TOM, will be adjusted continuously to the needs of industrial applications in cooperation with a huge number of development departments of many companies and universities.

In our talk we will visualize the process of cofiring biomass and coal and its impact on the environmental material in the boiler and characterize the corrosion, fouling and slagging of the cofired fuel.

