Elucidation and Control of the Ash Deposition Mechanism in Pulverized Coal-fired Boiler

Ash deposition in pulverized coal-fired boiler causes problems

**Slagging**
Molten ash particles collide with the furnace wall, and form ash deposition layers

**Fouling**
Molten ash particles deposit on heat-transfer tubes, and form ash deposition layers

- Operation troubles
- Decrease of thermal efficiency

Fouling in the pulverized coal combustion boiler for electric power business (After 2 years operation)
Elucidation and control of the ash deposition mechanism in pulverized coal-fired boiler

**Ash deposition reduction** → **High efficiency** → **CO₂ Reduction**

To reduce ash deposition…

**Focus on thermal spraying**

**Thermal spraying**

Thermal spraying material molten by arc or gaseous plasma are sprayed to coat the material surface

**Heat transfer tube** (JIS-SUS304)

**Ni alloy** (thickness: 200μm)

**Contents**

1. Ash deposition experiment
2. Study on change in ash deposition characteristics by thermodynamics equilibrium calculation
3. SEM/EDX observation of ash samples after