



Successful R & I in Europe 2025 | Düsseldorf | 06, March, 2025



**Electrification of ceramic industries high temperature heating equipment -
eLITHE**

Hybrid kiln for brick and roof tile production

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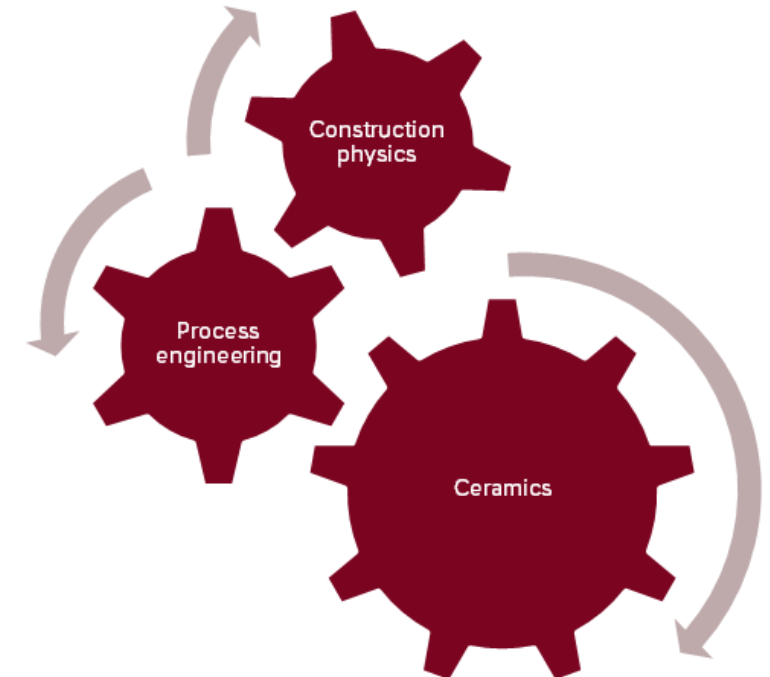
About us & main topics

About us

- Founded in 1952 as a research center for the brick and tile industry.
- The IZF is a non-profit association. Its members are companies from the brick and tile industry and ceramic plant manufacturers.
- Products with and for which we work, are roof tiles, perforated bricks, clinker bricks ...

Main topics

- **Raw materials**
Brick raw materials (clay), raw material extraction, storage, etc.
- **Preparation, shaping**
Plasticity, formability, etc.
- **Drying**
Drying speed, types of dryers, process analysis etc.
- **Firing**
Tunnel kiln, atmosphere, process analysis etc.
- **Construction physics / Civil engineering**
Sound reduction index, thermal conductivity, fire resistance etc.



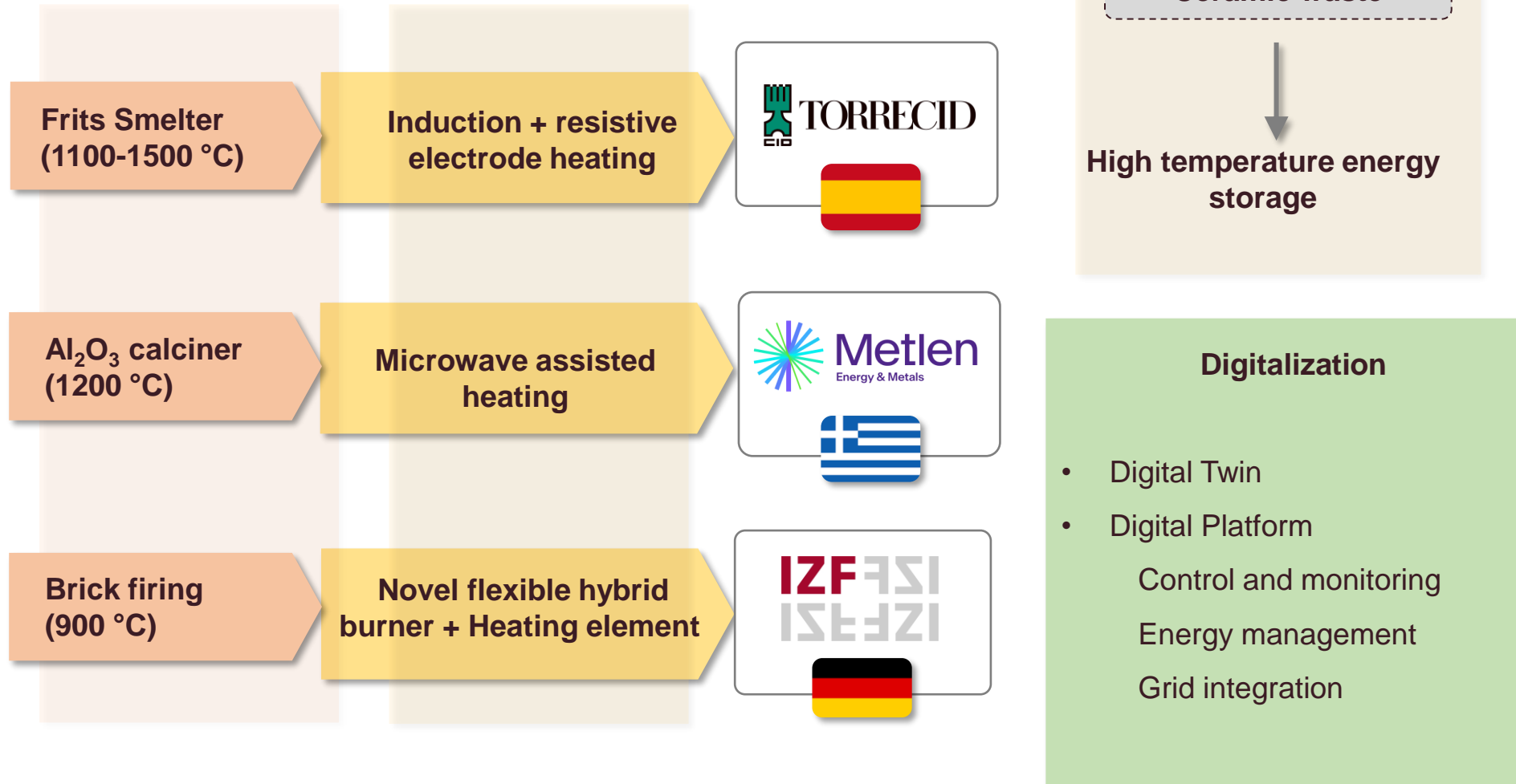
eLITHE - Aim



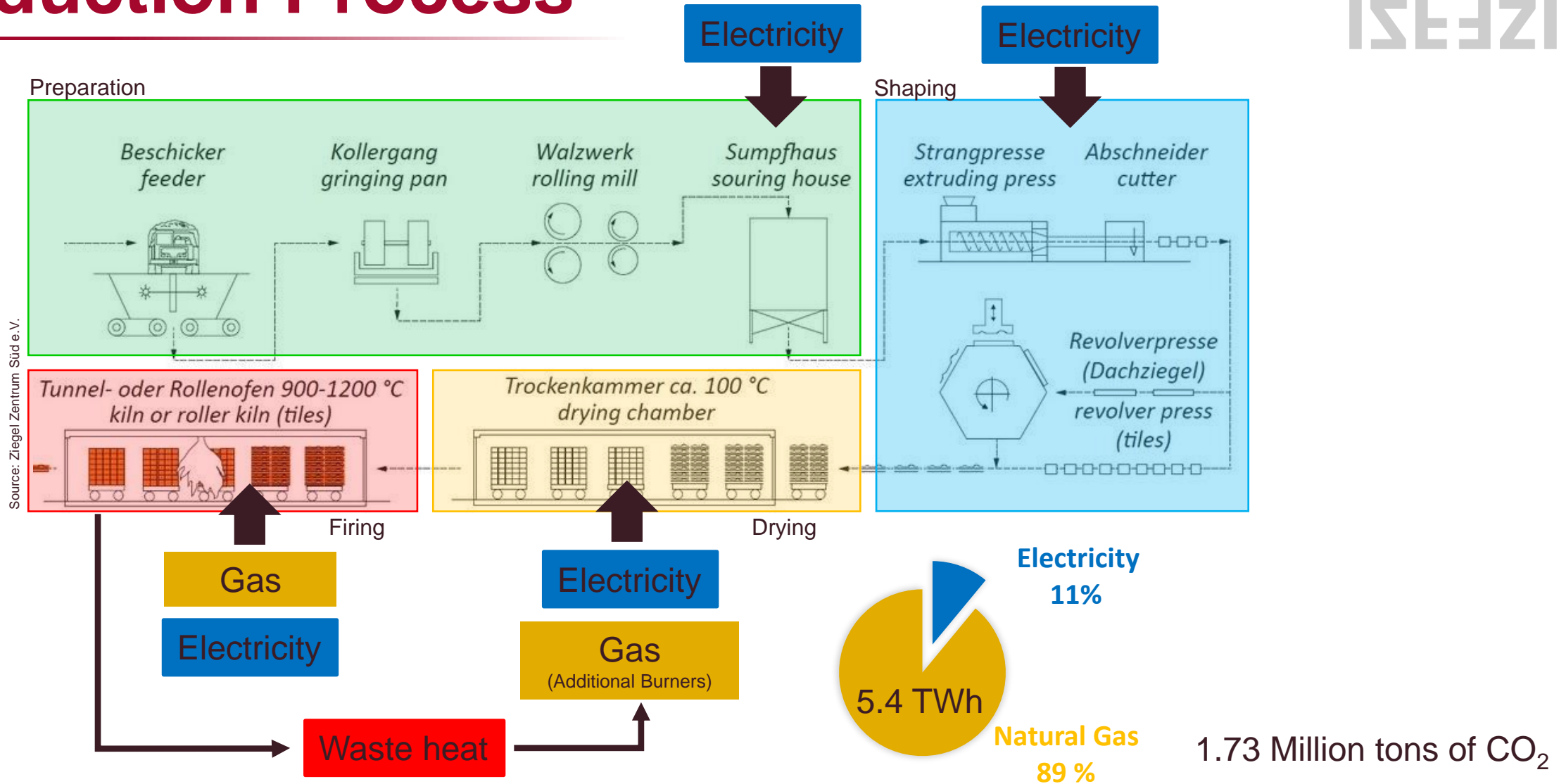
High temperature process



Furnace electrification



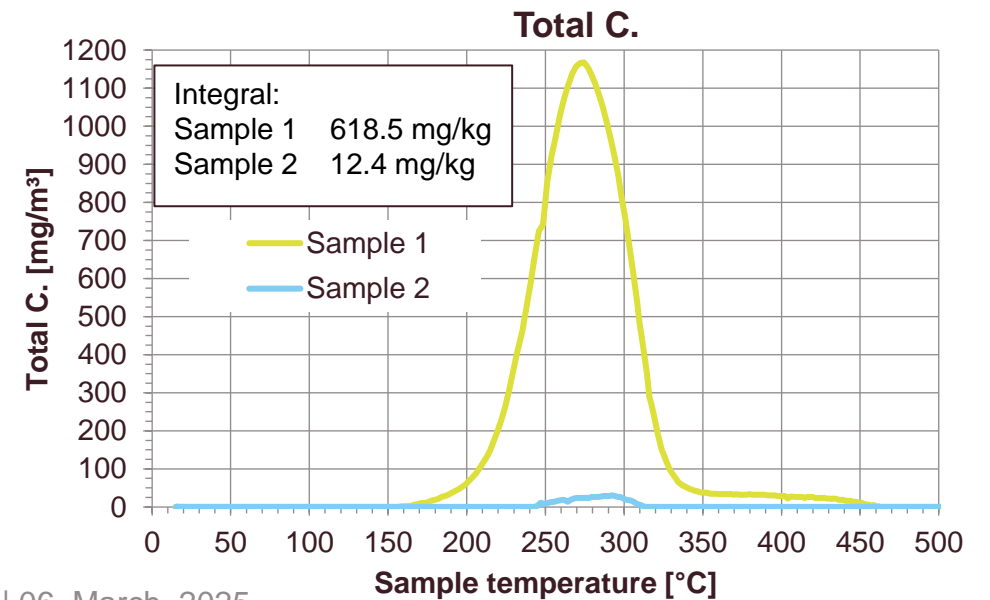
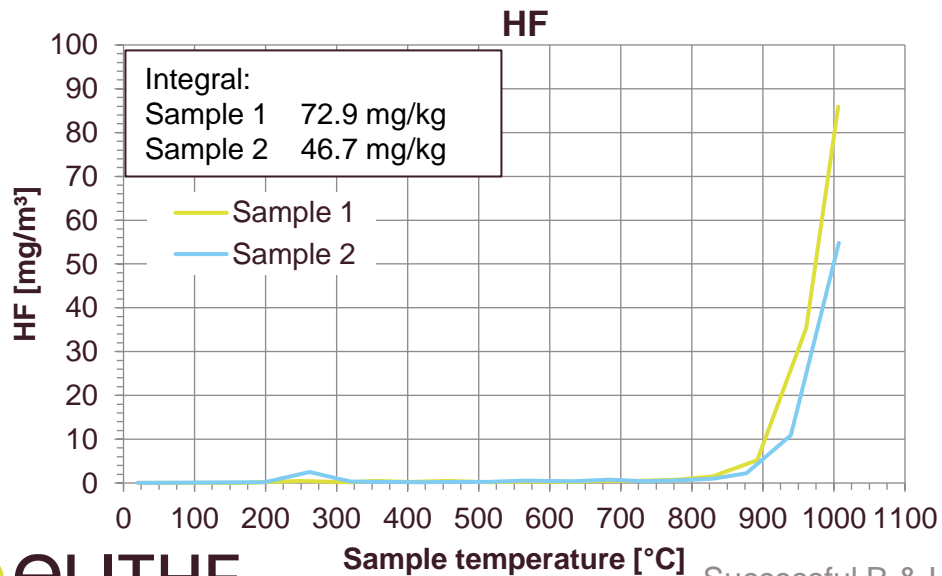
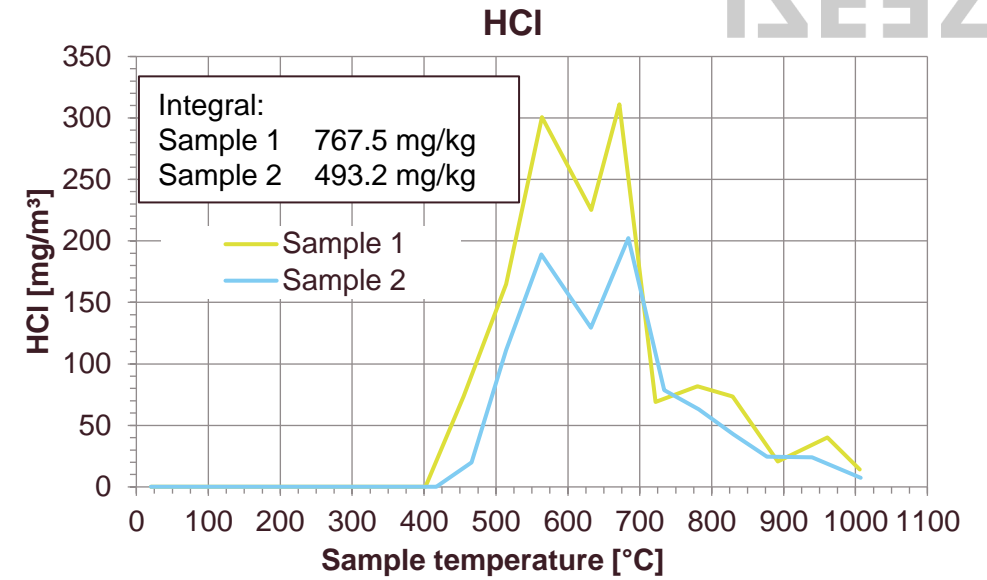
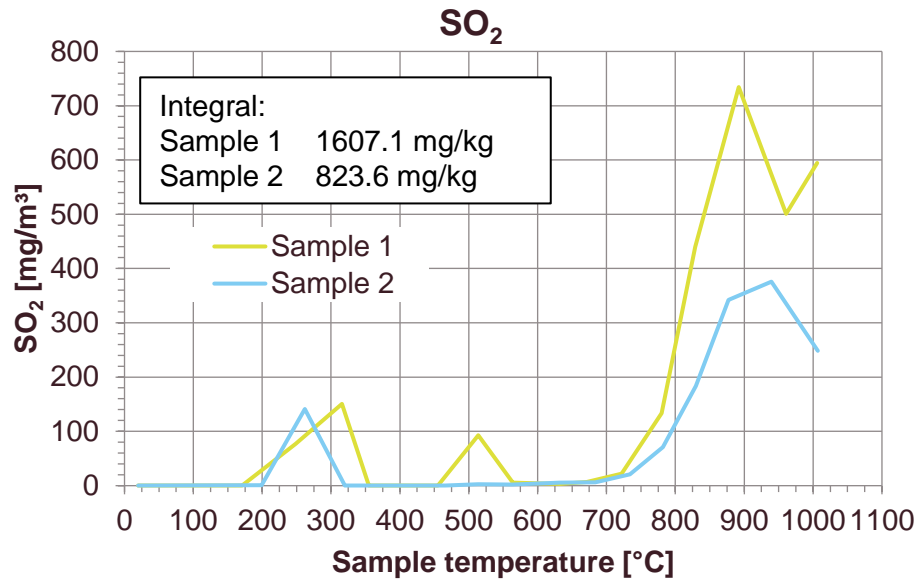
Production Process



*Source: Roadmap for a greenhouse gas neutral brick and roof tile industry in Germany, 2021

Average energy requirement 2020*

Expulsion curve



Hybrid brick firing

Outside of the kiln



Inside of the kiln



- Electric heating element (230 kW)
- Circulation system which can handle temperature up to 900°C
- Hybrid burner – (Natural gas, hydrogen and electricity)
- Simulation of burner.

Work Package Partners



Thank you

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