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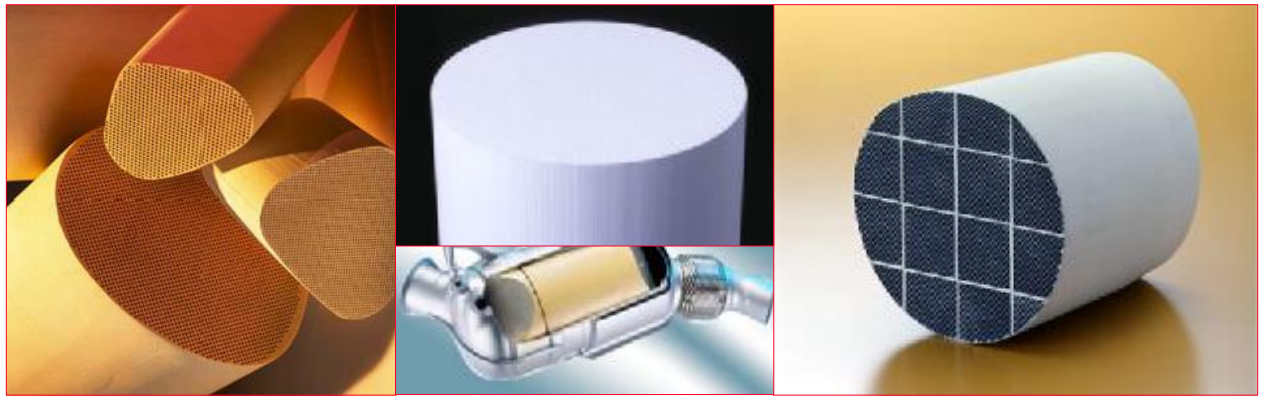

Innovative

Heat Treatment of Ceramics

Using „Low O2“ Technology

Content

- Debinding processes
- Discontinuously operated kiln plant with „Low O_2“ technology
- Continuously operated kiln plant with „Low O_2“ technology
- Result
- State of the Technology
- Innovation

Debinding Processes

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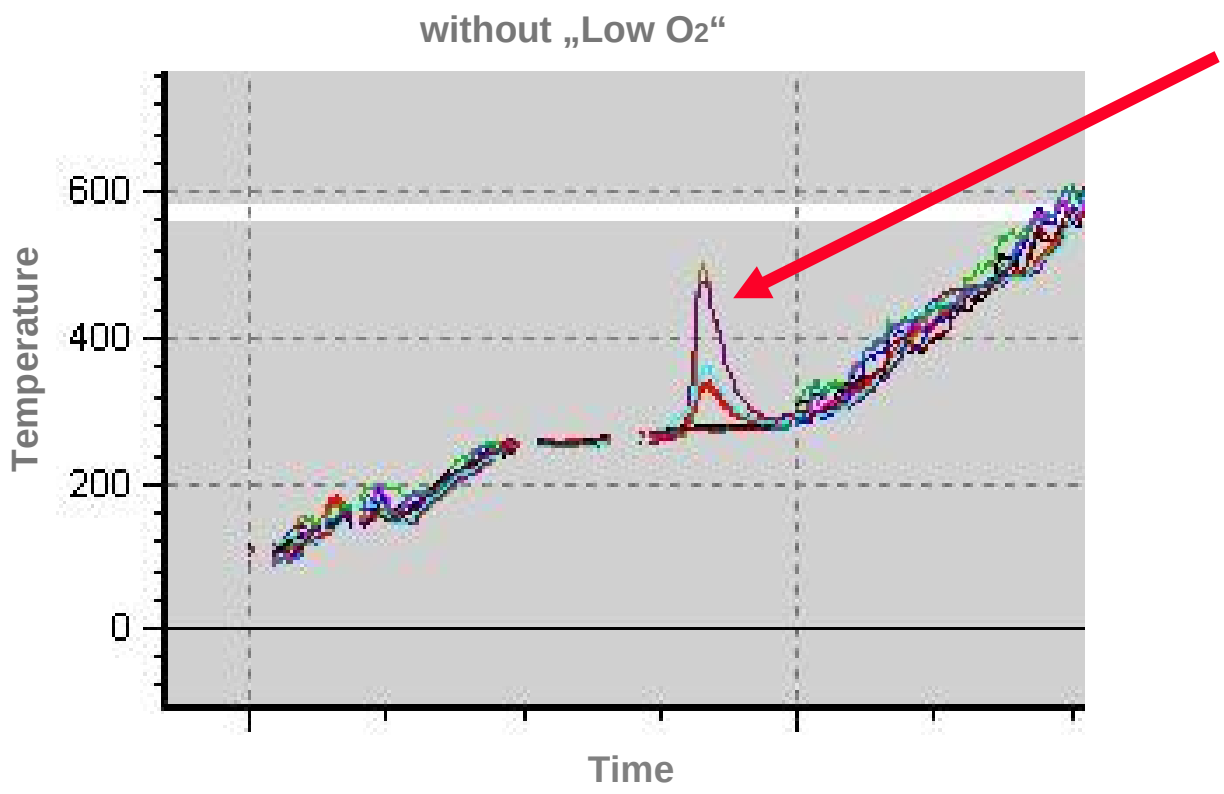
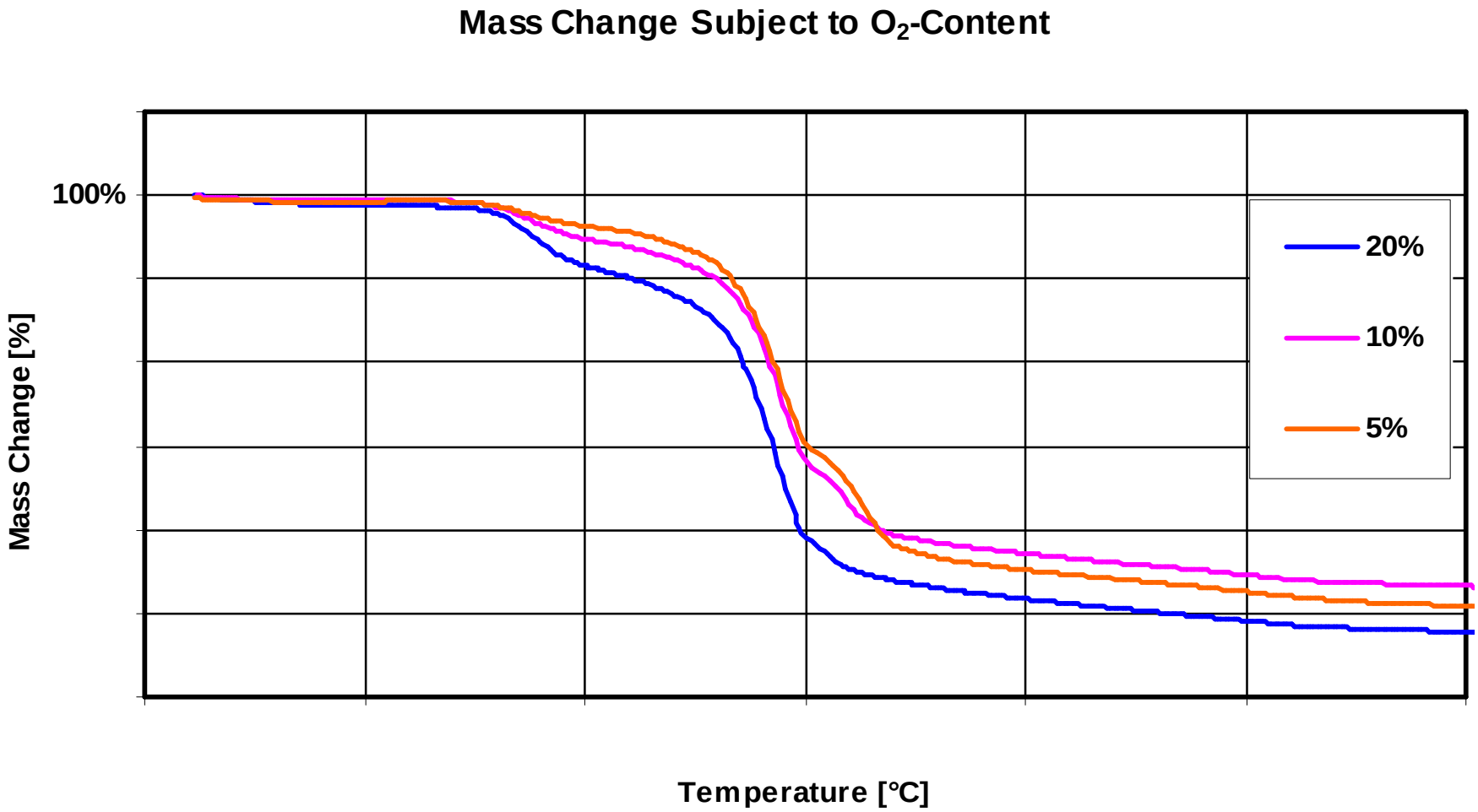
In the traditional firing the debindering time requires up to 50 % of the entire firing time



Uncontrollable reaction in the product

Almost the entire weight loss takes place between 150 °C and 400 °C



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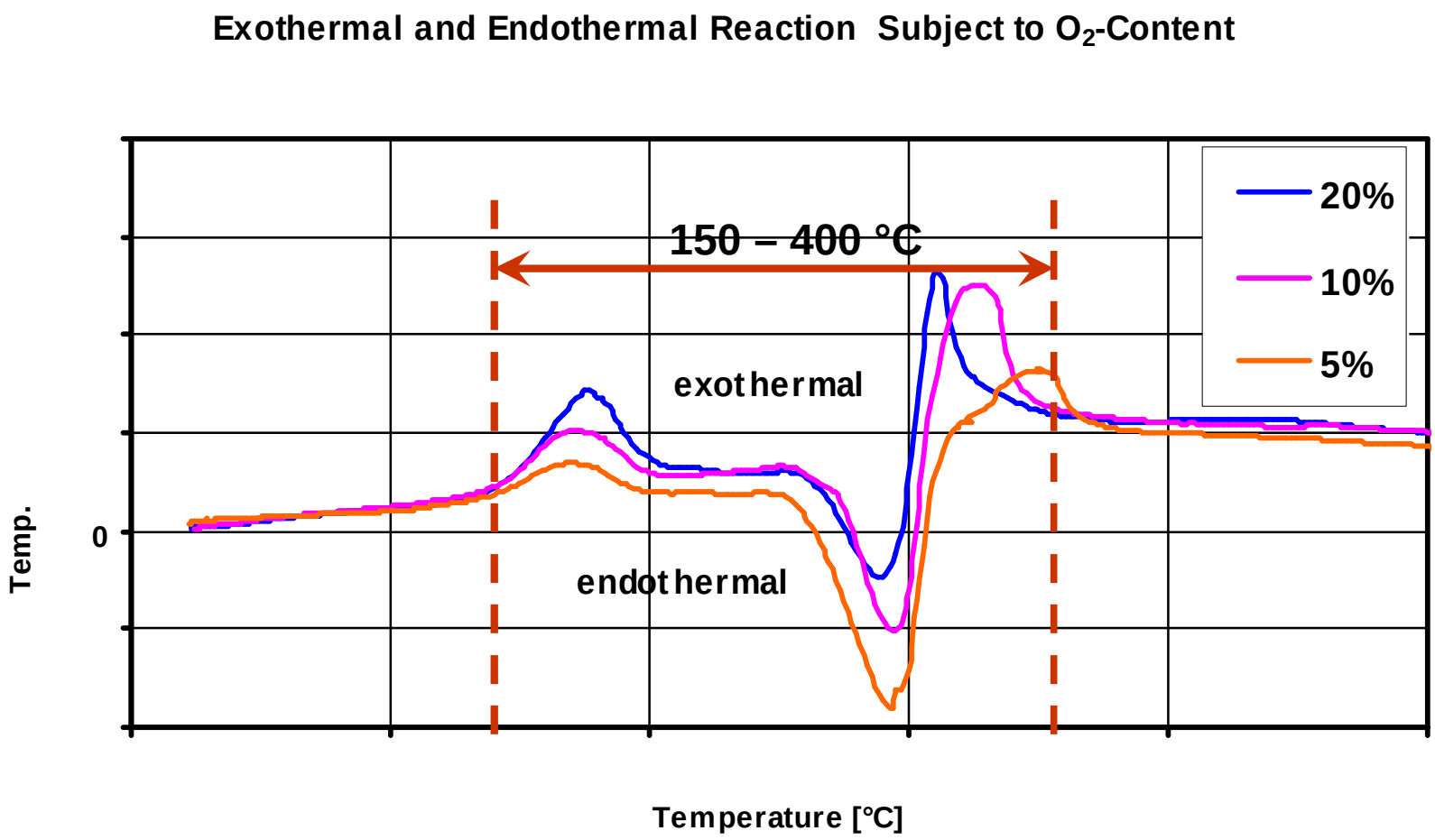
The strongest reactions run between 150 °C and 400 °C



Discontinuously operated kiln plant with „Low O2“ Technology

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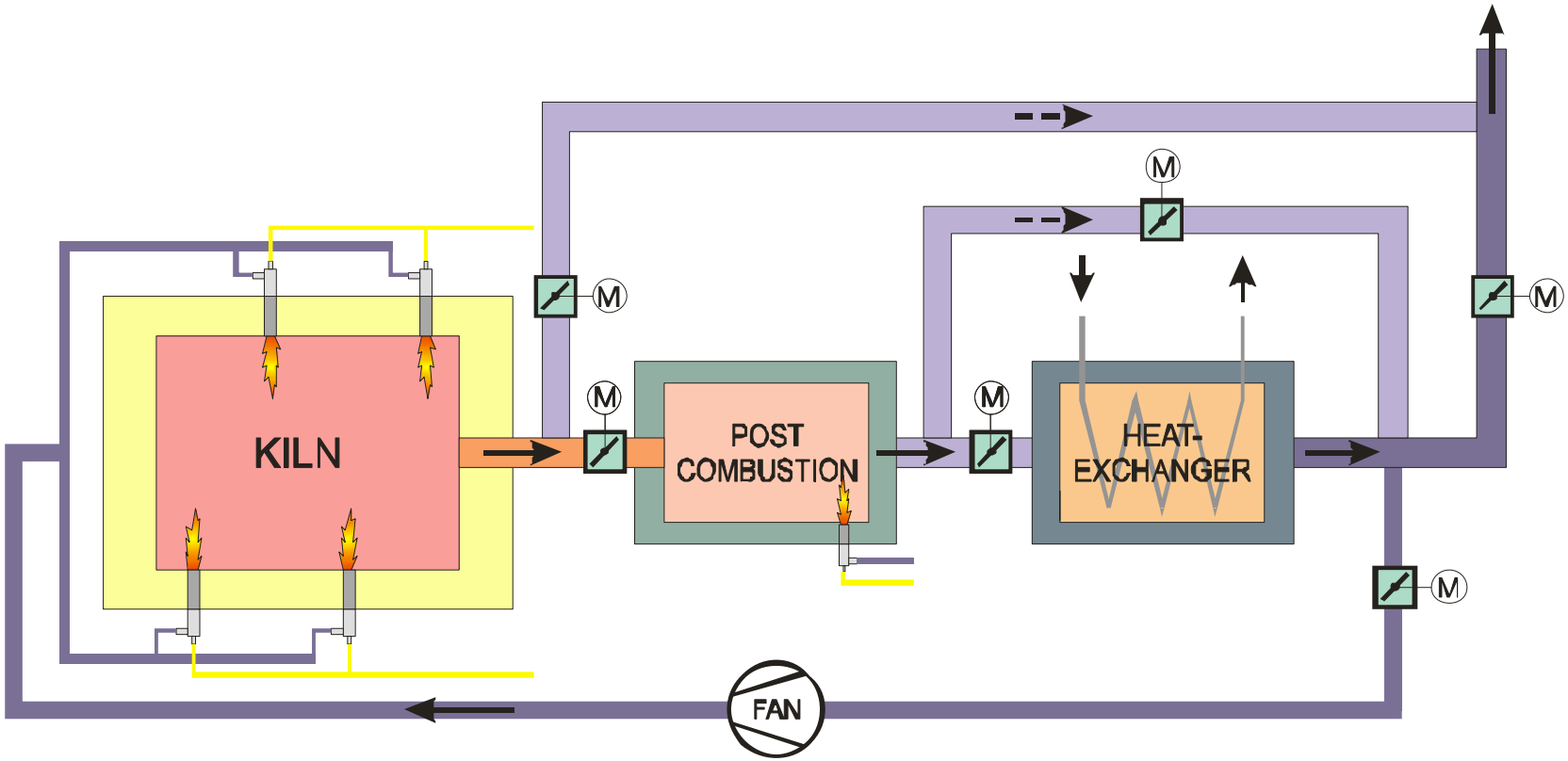
The „Low O2“ technology principle for discontinuous firing



Discontinuously operated kiln plant with „Low O_2“ Technology

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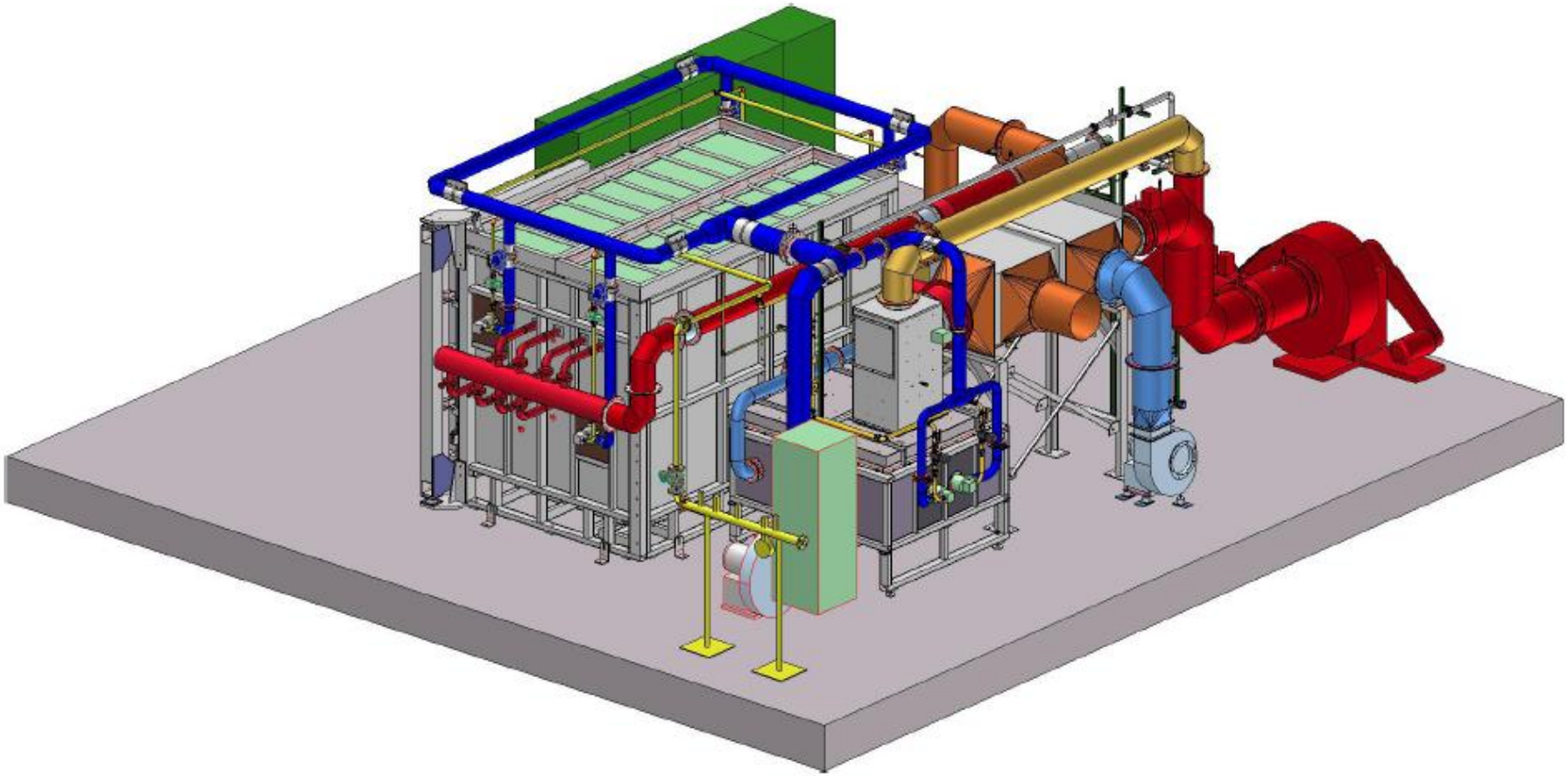
Shuttle kiln with „Low O_2“ technology



Continuously operated kiln plant with „Low O2“ Technology

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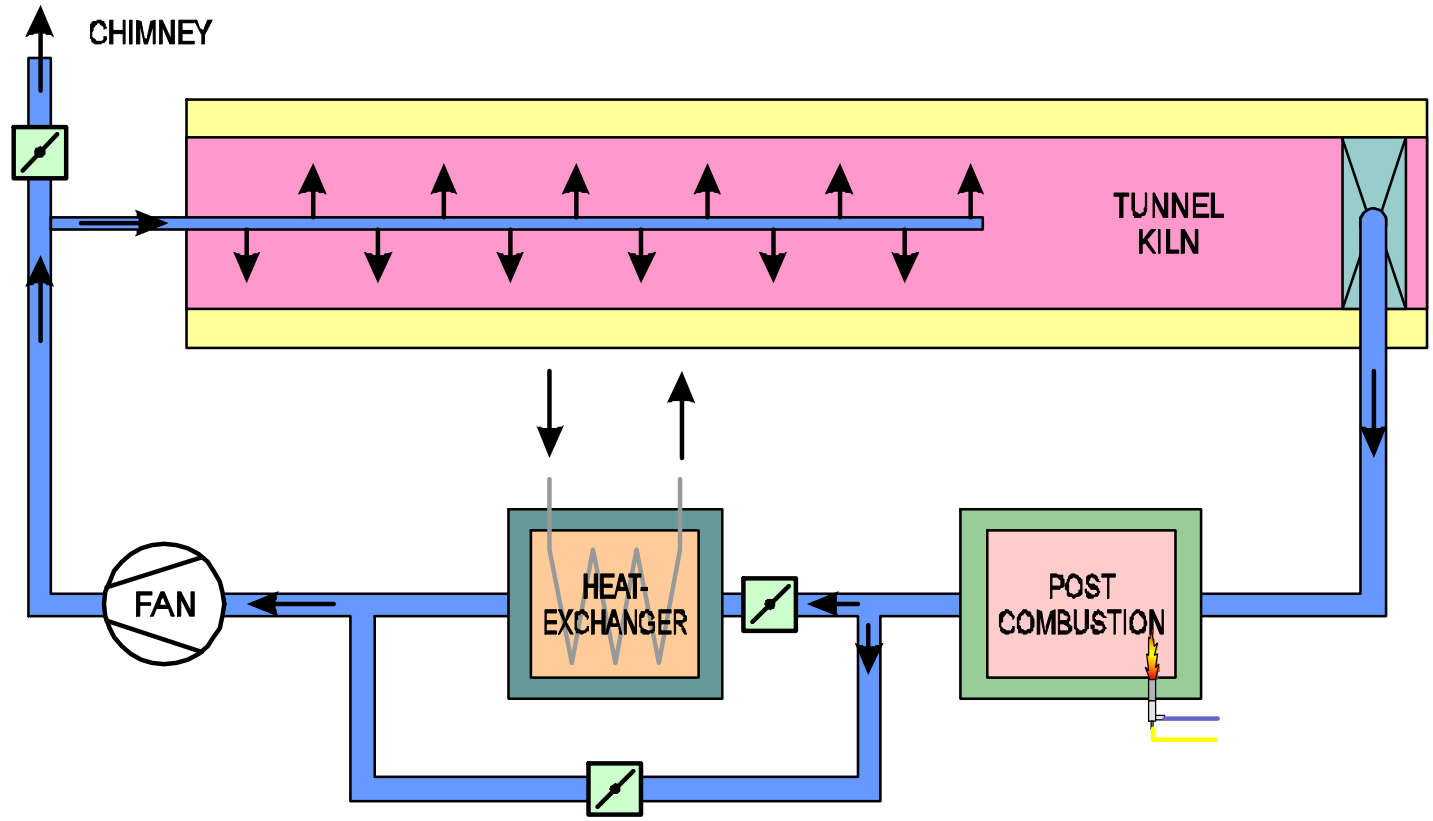
The „Low O2“ technology principle for continuous firing



Continuously operated kiln plant with „Low O_2“ Technology

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Debindering kiln

Gas-tight sintering kiln

Continuously operated kiln plant with „Low O_2“ Technology

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Debindering zone of the tunnel kiln with following components:

Air-water heat exchanger

Thermal post-combustion

Continuously operated kiln plant with „Low O_2“ Technology

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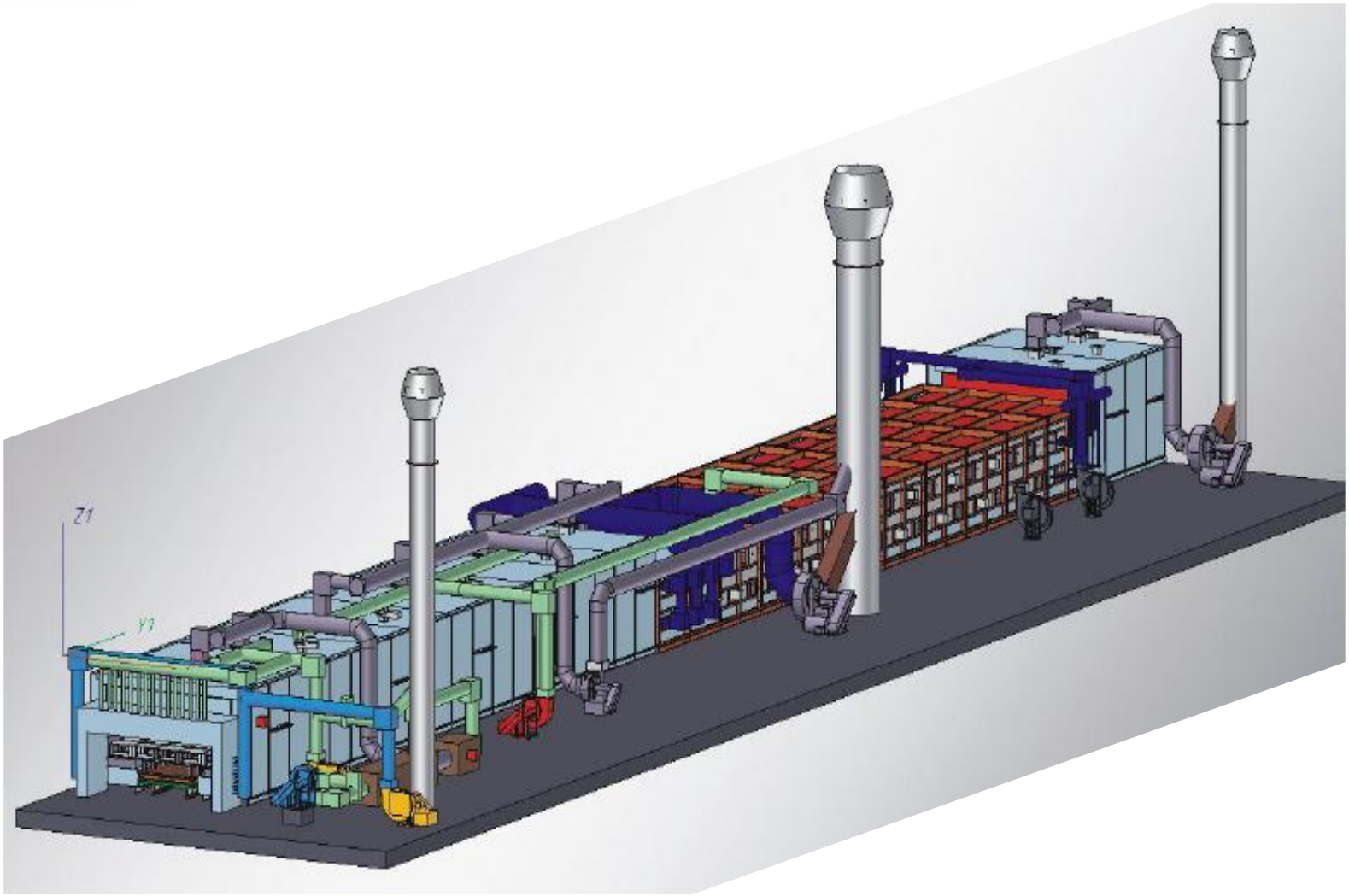
Tunnel kiln with „Low O_2“ Technology



Result

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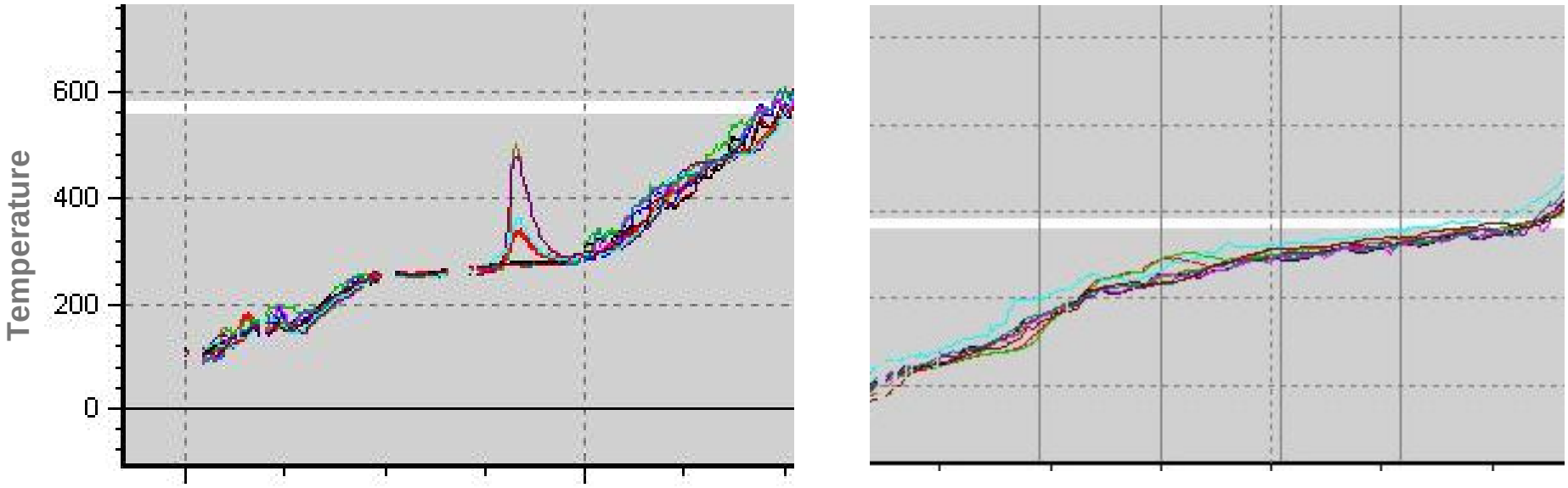
With „Low O_2“ technology firing time can be radically shortened

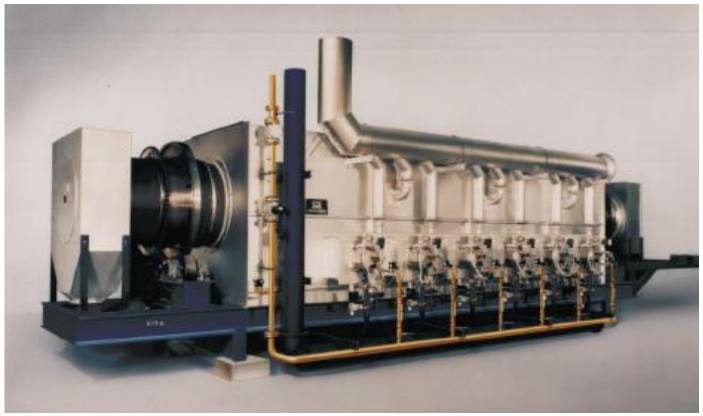
without „Low O2“

with „Low O2“



State of the Technology

Thermal treatment with „Low O_2“



Indirectly heated rotary kiln

Pit furnace for baking carbon

Gas-tight top hat kiln

Innovation

Heat treatment of ceramics with a regulated kiln atmosphere is the stand of the art (e. g. hard porcelain)

Regulation of the oxygen content in a gas-heated kiln in a low temperature area is a real innovation with following advantages:

- „Low O_2“ è „O_2 control“ regulation of the kiln atmosphere in a wide area
- low investment cost
- low required space
- low energy consumption
  - Ø short duration of the process
  - Ø recirculation of waste gas
- Applicable für continuously and discontinuously operated firing processes
- Debindering and sintering in one firing cycle