

Project idea/ Field of expertise:

Analysis and design of energy-efficient industrial thermal processes

Organisation Name:

Fraunhofer Institute ISC,
Center for High-Temperature Materials and Design **HTL**

Adressed challenge(s)/ PPP(s):

- Advanced manufacturing and processing
- Factories of the Future (FoF)
- Sustainable process industries (SPIRE)

Adressed topic(s) in Work Programme:

- **DT-FOF-09-2020: Energy-efficient manufacturing system management**
- LC-SPIRE-08-2020: Novel high performance materials and components



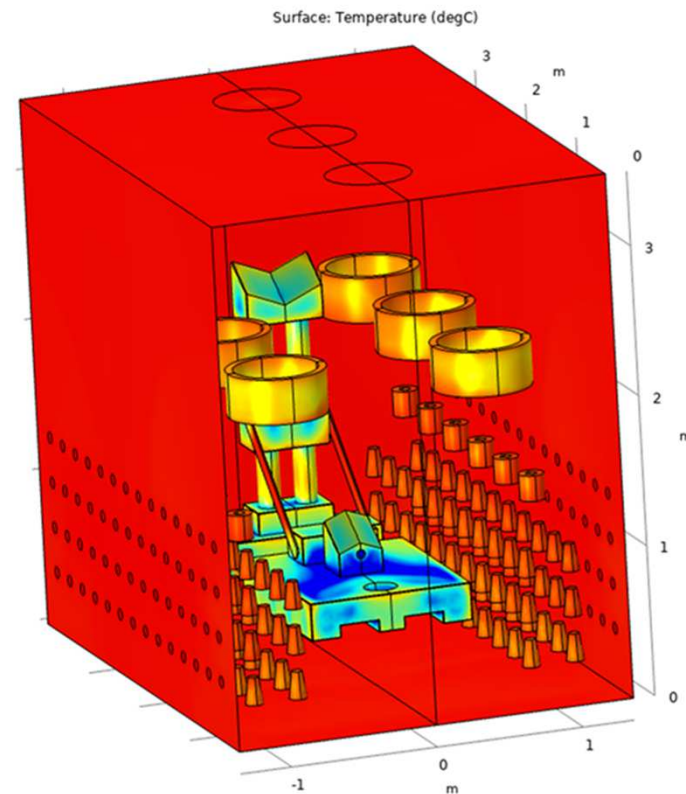
ISC / Center HTL

- Non-profit research center, application-oriented research
- Expertise and skills:
 - Analysis, simulation and optimization (energy efficiency) of industrial high temperature processes
 - Development of (in-situ) measuring equipment and sensors for high-temperature material properties
 - Design and manufacturing of high temperature materials (ceramics incl. fibers and CMC, metal-ceramic composites)
 - special skills for materials design: microstructure-property simulation; additive manufacturing; textile technologies
- EU-funded projects: currently part of “FUDIPO” (SPIRE), www.fudipo.eu 10/16 - 09/20



Project Idea: Digital Furnace Twin

- Development of digital twin for furnace control based on real-time simulation of material behavior under thermal treatment (core competence of Fraunhofer HTL)
- Goal: continuous optimization of process conditions for energy efficiency, yield and product quality
- Enabling of demand side management for fluctuating (regenerative) energy supply



Consortium

Known partners

Name	Type	Country	Role in the project
Fraunhofer HTL	R&D	Germany	Research partner, <i>optional coordinator</i>
Fraunhofer ITWM	R&D	Germany	Research partner

Partner search

Profile	Type	Country	Role in the project
furnace producer	industry	tbd	development of furnace control
furnace user	industry	tbd	use cases, innovation partner
software producer	industry	tbd	development of digital twin
sensor producer	industry	tbd	develop specific furnace sensors
university or institute	R&D / university	tbd	research partner and coordinator

Contact details

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