

Clusters 4 Future - HyInnoBurn

Enabling Industries Through Gas Burner Design Optimization for Hydrogen Combustion



Motivation and Relevance

- **Hydrogen** as energy medium has great potential for a **climate-neutral future**
- Demand for **fuel flexibility** (H₂ and NG) in industrial gas burners
- **Optimization** of conventional gas burners for **safe operation** with hydrogen

Approach

- **Simulative and experimental** analysis of industrial gas burners
- **Inverse design** for optimization of the burners based on analysis
- Use of additive manufacturing for **complex variant flexible burners**

Results

- **Material selection, process development and DfAM**
- **Development of numerical models** for the simulation of turbulent fluid mechanics
- Design and manufacturing of **optimized scalable gas burners**

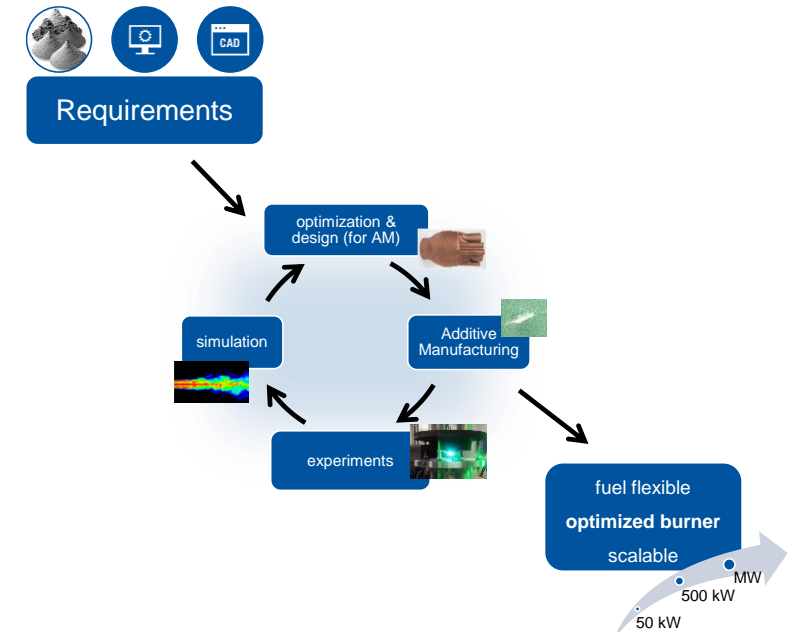
Research Area

- Hydrogen Combustion
- Design for Additive Manufacturing

Partners



Picture



Contact



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