



SPIRE Pre-Brokerage event

21 September 2017

***PROCESSING OF MATERIAL FEEDSTOCK
USING NON-CONVENTIONAL ENERGY
SOURCES (CE-SPIRE-02-2018)***

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- › Private, non-profit making institute for applied research and development
- › Located in Düsseldorf, Germany
- › Leading provider of application-focused R&D in the **Iron & Steel industry**
- › Short and medium term research originated by industrial production topics
- › Large national and European network (research and industry)
- › Staff of 100 people with very high academic degree



Deep understanding of production processes



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CONTRIBUTION TO PROJECTS

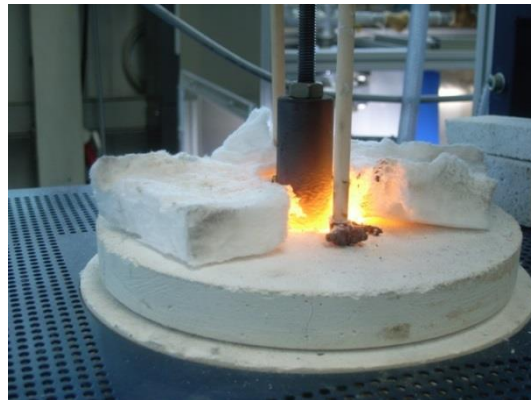
CE-SPIRE-02-2018: Processing of material feedstock using non-conventional energy sources

1. Inductive heated methane pyrolysis for production of hydrogen and fixed carbon (alternative technology to hydrogen production by steam reforming process)
2. Agglomeration and pre-reduction of iron ores in a microwave heated continuous process (alternative technology to carbon heated sintering belts)
3. Inductive heated DRI plant for reduction of iron ores in mixture with iron oxide bearing residues using hydrogen containing process gases as reducing agent
4. Inductive heated activation of carbon for exhaust gas cleaning and water purification

EXPECTED IMPACT

(CE-SPIRE-02-2018)

- Utilization of non-conventional energy sources
 - microwave heated processes
 - inductive heated processes
- Improvement of process performance by utilization of non-conventional energy sources for the benefit of energy efficiency
- High potential for integration in a renewable electricity grid



EXISTING PROJECT CONSORTIUM

Iron & Steel industry is interested to contribute.
Ongoing discussions with industry partners.

LOOKING FOR PARTNERS

Partners complying with the project ideas and scopes are welcome.

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