TGA

- Mass change measurement in inert, reducing and/or oxidating atmosphere up to 1500°C.
- Atmosphere can be dynamically varied during the test.
- Furnace tube inner diameter 28mm
- Available gases includes CO, CO_2, H_2, H_2O, N_2, O_2, CH_4, Ar & Air
- Sample size may varies between 1-200 g and with maximum diameter 24mm and 30mm
- Have used for reduction and oxidation (scale formation of steels) tests

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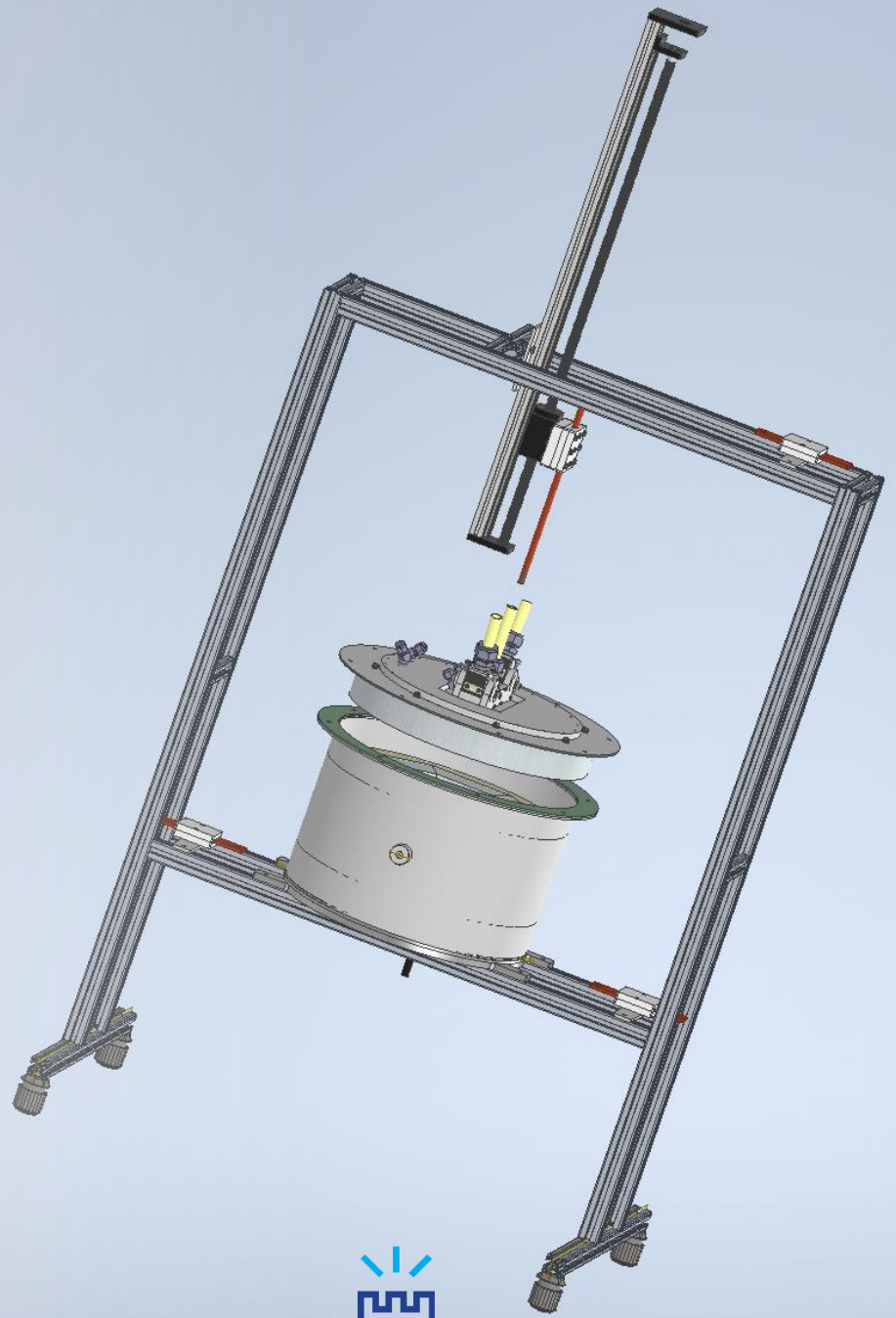
EAF simulator

- Melting of steel scrap with slag in controlled circumstances
- DC power supply with bottom electrode
- Logging of electrical parameters and crucible temperature
- Allows addition of material and injection of gases (Ar, N_2) during heating
- Coupling for optical measurement equipment, for example OES probe
- Crucible inner diameter 105 mm and heigh 95mm
- Will be used for simulation of EAF phenomena (scrap melting, slag foaming, behaviour of arc, etc.)



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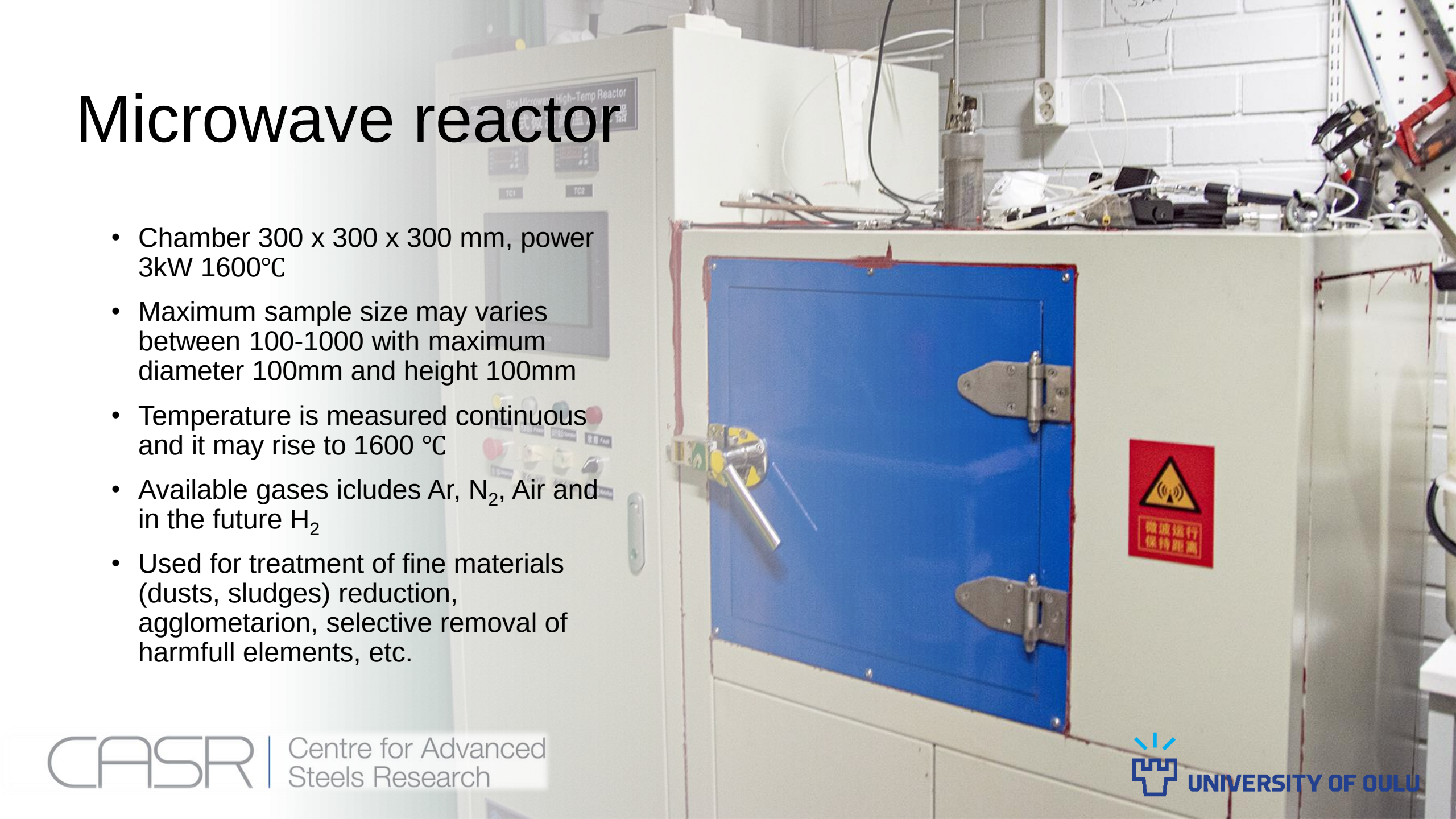
BFS

Blast furnace gas phase simulation with Entech furnace

- Mass change measurement in inert, reducing and/or oxidating atmosphere up to 1100°C.
- Atmosphere can be dynamically varied during test.
- Available gases CO, CO_2, H_2, H_2O, N_2, S and K.
- Sample size may varies between 50-1000g with maximum diameter 70mm and height 70mm
- Optional observation of dimensional changes via camera.
- Used for simulations of pellets, sinter and brigeuttes reducibility, swelling, cracking, etc

Microwave reactor

- Chamber 300 x 300 x 300 mm, power 3kW 1600℃
- Maximum sample size may varies between 100-1000 with maximum diameter 100mm and height 100mm
- Temperature is measured continuous and it may rise to 1600 ℃
- Available gases icludes Ar, N_2, Air and in the future H_2
- Used for treatment of fine materials (dusts, sludges) reduction, agglometarion, selective removal of harmfull elements, etc.



Pyrolysis / coking reactor

- Pyrolysis of organic material up to 1000°C or coking up to 1200°C with recovery of tar and other volatile compounds.
- Maximum sample size is 1-3kg with maximum diameter 200mm and height 400mm for pyrolysis.
- Gas atmosphere can be controlled.
- Sample temperature is continuously measured in selected positions.
- Used for pyrolysis of bio-based materials for biochar production, cokemaking using biomass, development of biochar properties for metallurgical purposes.

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Direct reduction reactor

- Device is using Fray-Farthing-Chen Cambridge electro-reduction process on mixed chromium oxide and iron oxide in molten $CaCl_2$ at 800°C.
- Atmosphere is controlled by Ar and N_2.
- Sample size: multiple pellets
- Current flow is constinuous measured during the tests.
- Can be used direct reduction studies of chromite.

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