

Electric process gas heater for preheating of hydrogen and natural gas mixtures in DRI or BF plants

Supplementary information – Kanthal (08/10/2025)

Figure 1 shows excellent oxidation properties of Kanthal® APM compared to other common high-temperature alloys with very low gross mass gain due to oxidation at 1 200°C in the air,

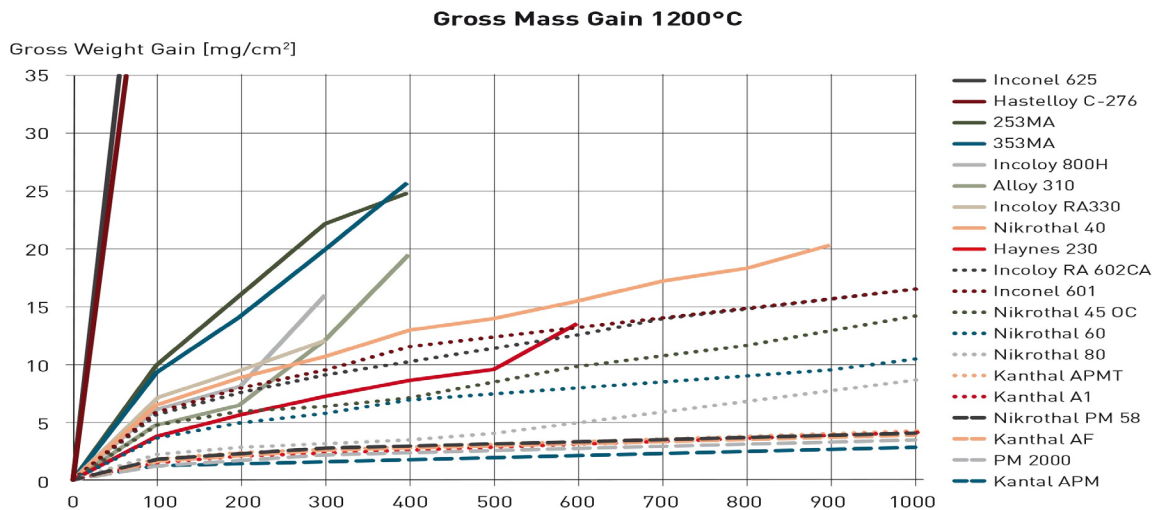


Figure 1: Gross mass gain due to oxidation at 1,200°C (2192°F) in the air for Kanthal®APM and other high-temperature alloys.

Figure 2 provides a schematic of the electric gas heater that was tested at the HYBRIT DRI pilot plant and **Figure 3** shows the pilot heater of 140 kW that will be supplied to the HYDRA project in Italy.

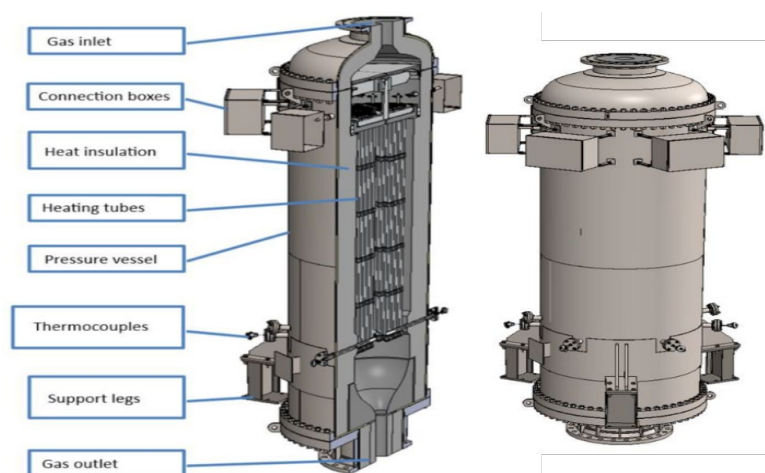


Figure 2: Schematic of the electric gas heater tested at the HYBRIT DRI pilot plant (Luleå, Sweden)



Figure 3: Pilot electric heater for the HYDRA IT06 project (Castel Romano, Italy)

Figure 4 summarises the joint development and industrialisation of the E-PGH-technology for application in DRI Energiron plants.

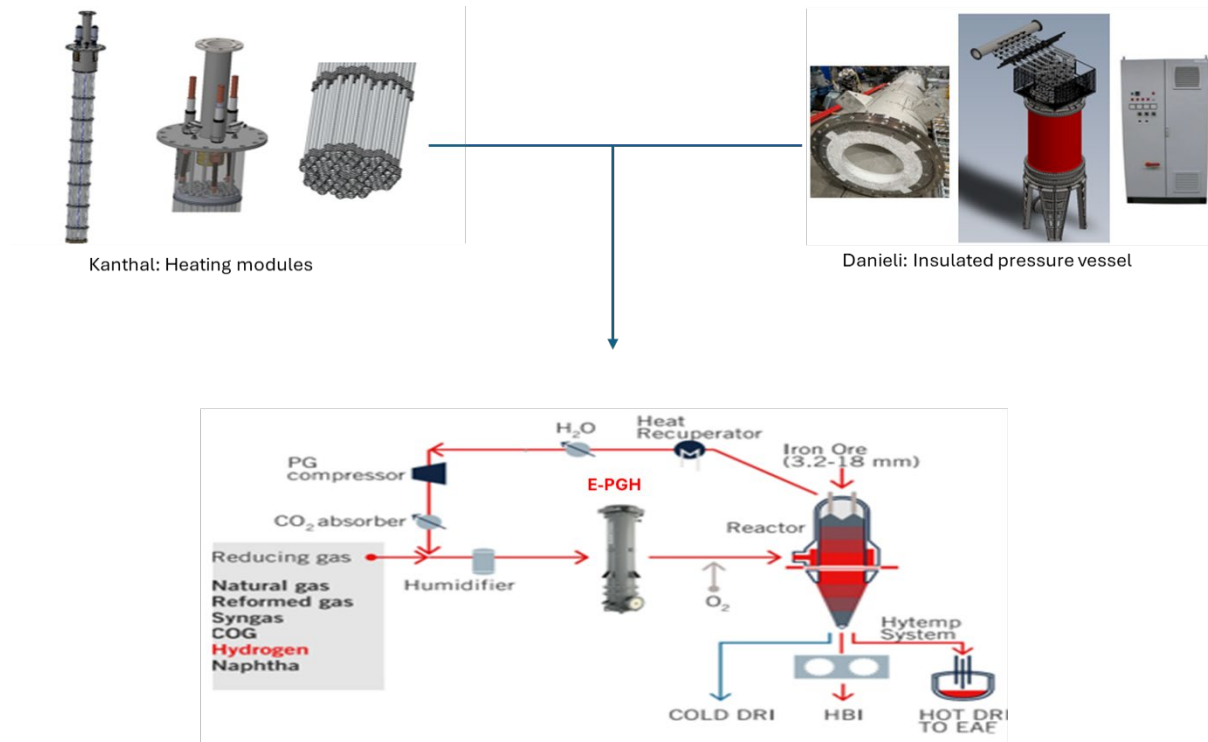


Figure 4: Joint development and industrialisation of E-PGH-technology for DRI application (Kanthal and Danieli)