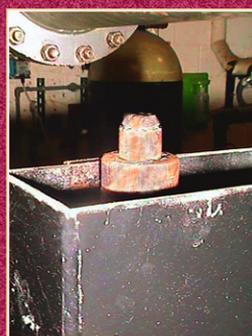
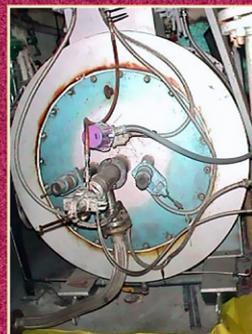
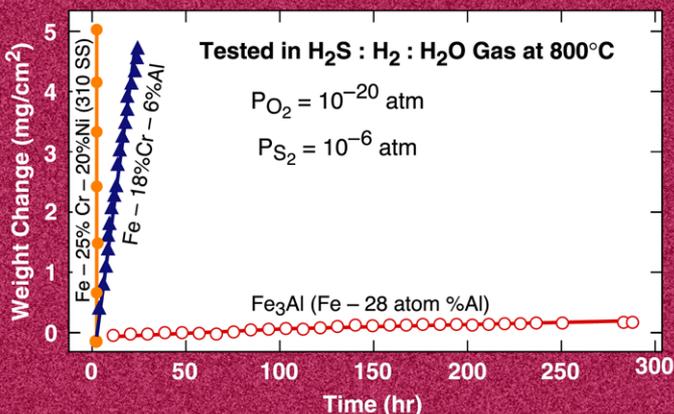


Development of High-Temperature, Corrosion-Resistant Iron Aluminide Alloys

Alloys based on iron aluminide (Fe_3Al) have many attractive properties, particularly high-temperature oxidation/corrosion resistance

Corrosion studies have played a key role in the development of iron aluminides for service in high-temperature, hostile environments

Iron aluminide burner nozzles have improved the operating performance of a nuclear/toxic waste incinerator



Fe_3Al alloys with >28 at. % Al show exceptional sulfidation resistance in coal-gasification environments

Iron Aluminide Filters Are a Major Success



ORNL's iron aluminide alloy is used in Pall Corporation's commercial hot-gas filter systems for coal combustion and coal gasification. These filters have demonstrated outstanding performance and have solved the hot-gas-particulate problems in these systems

Burner nozzles made of Alloy 230 were degraded beyond use after a few hours to a few weeks of operating time



ORNL and Pall Corporation are engaged in a CRADA project to improve iron aluminide filters and to reduce their cost



Iron aluminide burner nozzles have dramatically increased operating times. Service life of the nozzles has been extended from a few weeks to several months



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OAK RIDGE NATIONAL LABORATORY

