



## A concept of microwave furnace for steel making in industry scale

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### Abstract

Highly pure pig irons were produced in a multimode microwave reactor from powdered iron ores with carbon as a reducing agent in the nitrogen atmosphere. A new philosophy of steel making for the 21 century with the microwave furnace system is proposed. It can provide Medium size, High quality product and Flex operations against the existing mass production system that comes to the dead end of being bigger and bigger objecting to the higher and higher efficiencies both for economically and for thermodynamically.

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often held in a furnace before being poured or injected into molds to allow for a continuous supply of molten metal from the melting furnace with consistent composition and quality. Microwave furnace technology can now be beneficially utilized for advanced material processing on a commercial scale. Trust Harper's years of industry leadership for the careful design of microwave equipment based on your material's unique properties to yield a superior product. Is Microwave a fit? Overcome the challenges of conventional heating. Let Harper be your guide to discover if your advanced material is suitable for microwave systems. Our capabilities cover a range of applications such as drying, sintering, activation, controlled pyrolysis, oxidation, and carbonization for products such as Insights from industry. Microwave Furnace Technology for Advanced Material Processing. Download PDF Copy. View Supplier Profile. Harper International is a well-recognized world leader in building thermochemical processing systems for making carbon fibre, battery materials, activated carbon, and other chemical, metal and ceramic products. The new feature offered by Harper through its collaboration with Ferrite Microwave Technologies LLC (FMT) is processing systems based on microwave energy for heating. Steel making Furnaces. To produce steel, facilities use one of two processes: the basic oxygen furnace (BOF) or the electric arc furnace (EAF). Electric Furnace (EAF) Another steelmaking process widely used today is the electric furnace. The furnace charge is generally 100 percent scrap, and an electric arc is used as the heat source for the refining process. Continuous Casting The continuous casting process transforms the molten steel in the ladle into a slab in one continuous operation. Molten steel is poured from the ladle into a tundish, or a holding vessel, at the top of the continuous caster. Of steel making through induction furnaces by steel fast engineers. Introduction. The different sorts of Induction Furnaces. There are a few explanations behind the fame of Induction Melting Furnaces for making steel. They expend less power contrasting EAFs. Consumption on terminal is nil. They utilize lesser amount of stubborn. Introductory speculation is less on plant and hardware. Accordingly, there are financial points of interest in making steel through Induction Furnaces course. The main tangle is that at present mass amount steel can't be delivered through Induction Furnace course. May be that in future it might be conceivable to do as such. Smaller than normal. Coordinated steel plant idea.