# Sintering of Large Grinding Wheels using Microwave Technology - A Case Study

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ABSTRACT

In the last few years, industrial processes requiring drying and heating have undergone tremendous changes worldwide. This change has been brought about to meet the need for lower energy costs, faster processing time and a concern for environment. The driving force for this transformation has been accomplished through the introduction of microwave based systems for drying and heating including for high temperature processes such as in ceramics and refractories. In India too, the awareness about this technology has been rapid and many companies have benefited immensely by incorporating this technology for R&D and production.

In this paper, we discuss the sintering furnace designed for manufacturing grinding wheels as a case study. The requirements to be met are uniform heating, accurate control of temperature, efficient thermal management and safety features among other basic requirements of the customer. The maximum temperature desired was 1100 °C with an effective heating zone of size 600(Width) x 970(Height) x 600(Depth) mm. The system can sinter large grinding wheels of dimension 200 x 35 (Dia and height). The advantages of the system vis- a - vis conventional process is brought about by comparing critical

process parameters including processing time and energy costs without compromising on quality.

Enerzi Microwave Systems Pvt. Ltd. is a leading manufacturer of microwave based equipment for industrial processes with applications in ceramics, metallurgy, plastics and rubber, food products, waste management and many others. The company has capability to design, manufacture and commission systems for its esteemed customers.