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DEPARTMENT OF MECHANICAL ENGINEERING

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Report of Industrial Visit to "Fluidtherm Pvt. Ltd. Ambattur, Chennai"

Department of Mechanical Engineering organized 02 days Industrial Visit on 06th and 07th December 2019. The Visit was arranged for a project group of final year mechanical students. Total 04 students and 01 faculty have taken part in the Industrial visit. The visit was at Fluidtherm Pvt. Ltd. Ambattur, Chennai.

The company 'Fluidtherm Pvt. Ltd. Ambattur, Chennai' associated to manufacturing of different types of furnaces for powder metallurgy and heat treatment. In addition to that company facilities for plant design, Research and development, procurement, manufacture, start-up and after service. Company also providing a versatile thermal processing test facility where process & product development and client services like failure analysis, process selection / optimization, trouble shooting and contract R&D are carried out. The main products of the company are continuous conveyor belt furnace, Roller hearth furnace, Fluidized bed furnace, shaker hearth furnace, walking beam furnace, Retort furnaces like other types of furnaces and powder metallurgy furnace.

Main purpose of visit to gain knowledge about fluidized bed furnace. Fluidized bed have many applications such as drying, Titanium making and for the heat treatment of metal equipments. Fluidized bed furnaces have enormous advantages over salt bath furnaces. Because salt bath furnaces dealing with the environment pollution in greater extent. Salt bath furnace is required cyanide for heat treatment. Cyanide in solid form or in fumes is highly poisonous. But Fluidized bed furnace needs environment friendly solid insulation material as bed for heat treatment purpose.

Fluidized bed furnace contains aluminum oxide (100 micron) as bed material. Heating coils are arranged around the bed pipe for constant heat transfer. LPG, Nitrogen and Nitrogen oxide gases passed from bottom of furnace. Pressure and flow of the gases maintained and its sufficient for the fluidizing the aluminum oxide bed. Temperature of bed reached to 900⁰C within 15-20 minutes. It provides uniform heat treatment of material without any failure or distortion.

H.O.D
Prof. B.A. Patil

First day of visit we meet with Mr. Gopinathan owner of the company and Mr. Raghunathan director of the company. During first day Mr. Raghunathan give us knowledge about metallurgy concepts, heat treatment processes and detailed knowledge about the fluidized bed furnace. After that we visited fabrication plant for watching demo model of fluidized bed.

During second day of visit we along with Mr. Raghunathan visited R&D section of the company. He has given information about heat treatment processes introduced and patented by the company. After that students did experiments on heat treatment process of some metal pieces in fluidized bed furnace and furnace without fluidized bed.

From Department, HoD Mr. B.A Patil guided for the Industrial Visit to be successful. Prof. A. D. Chaudhari attended the Industrial Visit.



Presenting gift to Mr. Gopinathan.

