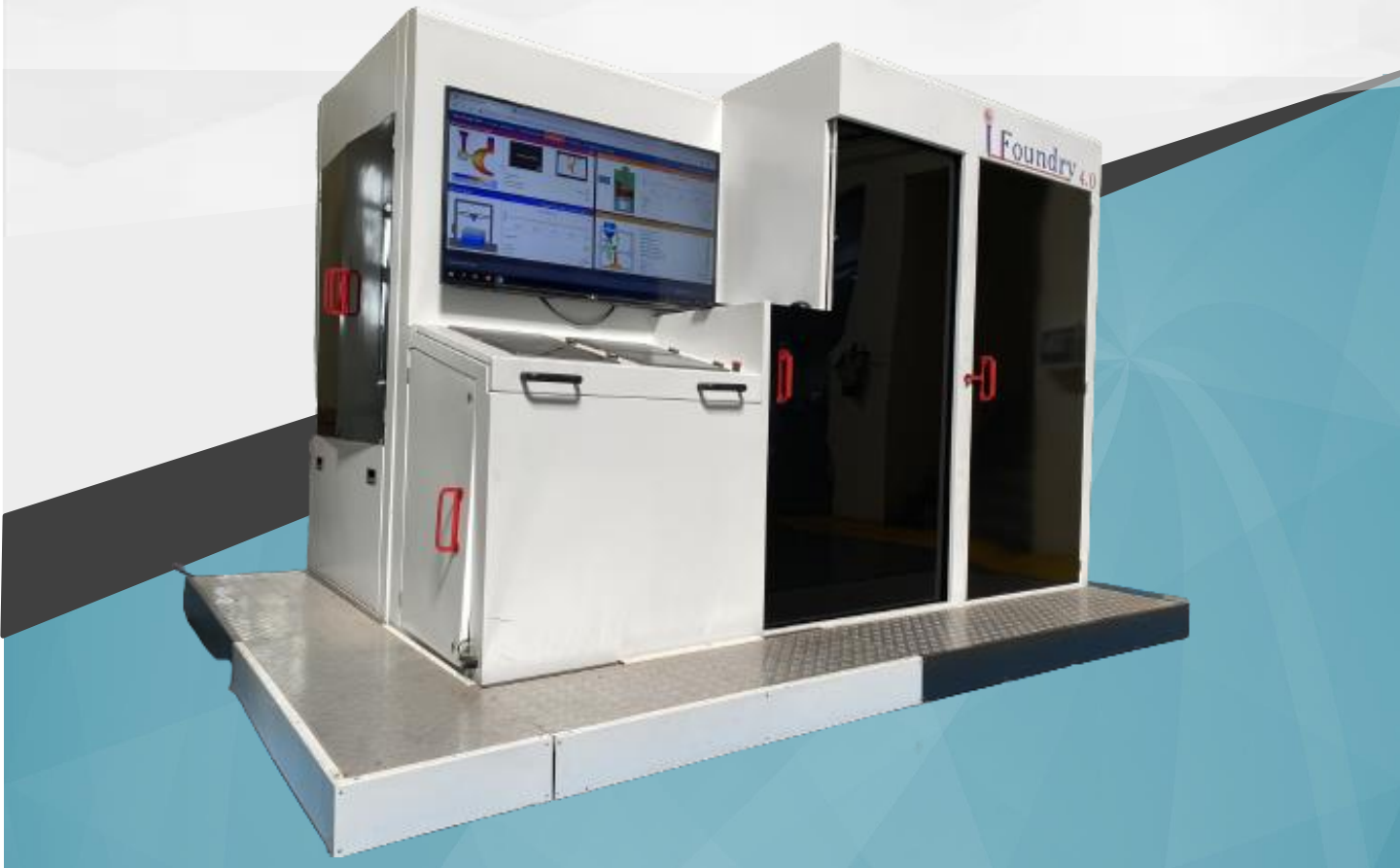
iFoundry 4.0

An Integrated Smart Foundry System



CMTI has developed a Integrated smart foundry system that can produce a small intricate metal components with better quality. The system comprises of 3D printer, Sand Mixing and Moulding machine, Automatic melting &pouring unit powered and controlled by IIOT enabled controller. The technology primarily address the need for rapid manufacture of small parts required in small quantities, which is not economical for conventional foundries

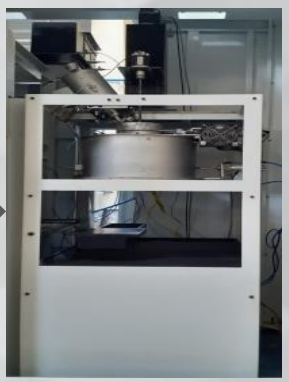
Process Steps

3D Printer

Pattern 3D Printed

No-Bake sand Moulding

Sand Mould



Melting and Pouring

Casted Part

Technical Specification

3D Printer Specifications

- **Type:** Fusion Deposition Modelling
- **Build Volume :** 300x300x300mm
- **Platform Leveling:** Auto Bed Level Compensation
- **Print Head Travel Speed:**300mm/s or More
- **Minimum Wall Thickness:** 1.2mm
- **Part Accuracy:** ± 0.2 mm or better

Sand Mixer and Mould Making Unit

Sand Mixer

- It can mix Sand with resin, hardener and catalyst
- Capacity of sand container: **28 Kg**
- Capacity of Resin, catalyst & hardener container: **6 ltrs.**
- Mixing motor Operating Speed: **150 rpm**

Mould making unit

- Max. mould size: **200 mm(L) x 200 mm(B) x 90 mm(H)**
- Total capacity of sand container: is approximately **8 Kg**
- Maximum applicable force for mold preparation: **1000N**

Melting and Pouring Unit

- Maximum furnace temperature **900˚C**
- Time duration: **30 minutes**
- Material that can be casted: **Aluminum and its alloys**
- Max. weight of the component that can be casted: **4Kg**

IIOT enabled control panel

- Dashboard for condition monitoring of the entire process and the system
- Cloud-based energy analytics and OEE of the system
- Per part manufacturing- energy cost estimation
- Anomaly detection and auto cutoff
- Mobile-based cloud printing of 3D parts and monitoring

For Details Contact

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