Melting iron powder to form pucks for analysis

Objective  To heat a sample of iron powder for a melting application; the client manufactures metal powders

Material
- Iron powder
- Ceramic crucible

Temperature  2800 °F (1538 °C)

Frequency  352 kHz

Equipment
- Ambrell EASYHEAT™ 6 kW, 150-400 kHz induction heating system equipped with a remote workhead
- A single position, four turn helical induction heating coil designed and developed specifically for this application

Process  With an EASYHEAT 6 kW induction heating system and the specially designed coil from THE LAB at Ambrell, 45 grams (0.1 lbs.) of iron powder heated to temperature in less than 75 seconds. This achieved the client’s requirements for the melting application.

Results/Benefits
- Speed: With a 6 kW EASYHEAT, heating occurred within 75 seconds
- Footprint: The EASYHEAT, which is a modestly sized induction heating system, easily fit within the client’s manufacturing footprint
- Repeatability: Induction is a highly repeatable heating method, so the client can expect the same result in the same time period every time
- Expertise from THE LAB: The applications engineers at Ambrell delivered a tailored solution that met their requirements
The iron powder in a ceramic crucible during heating.