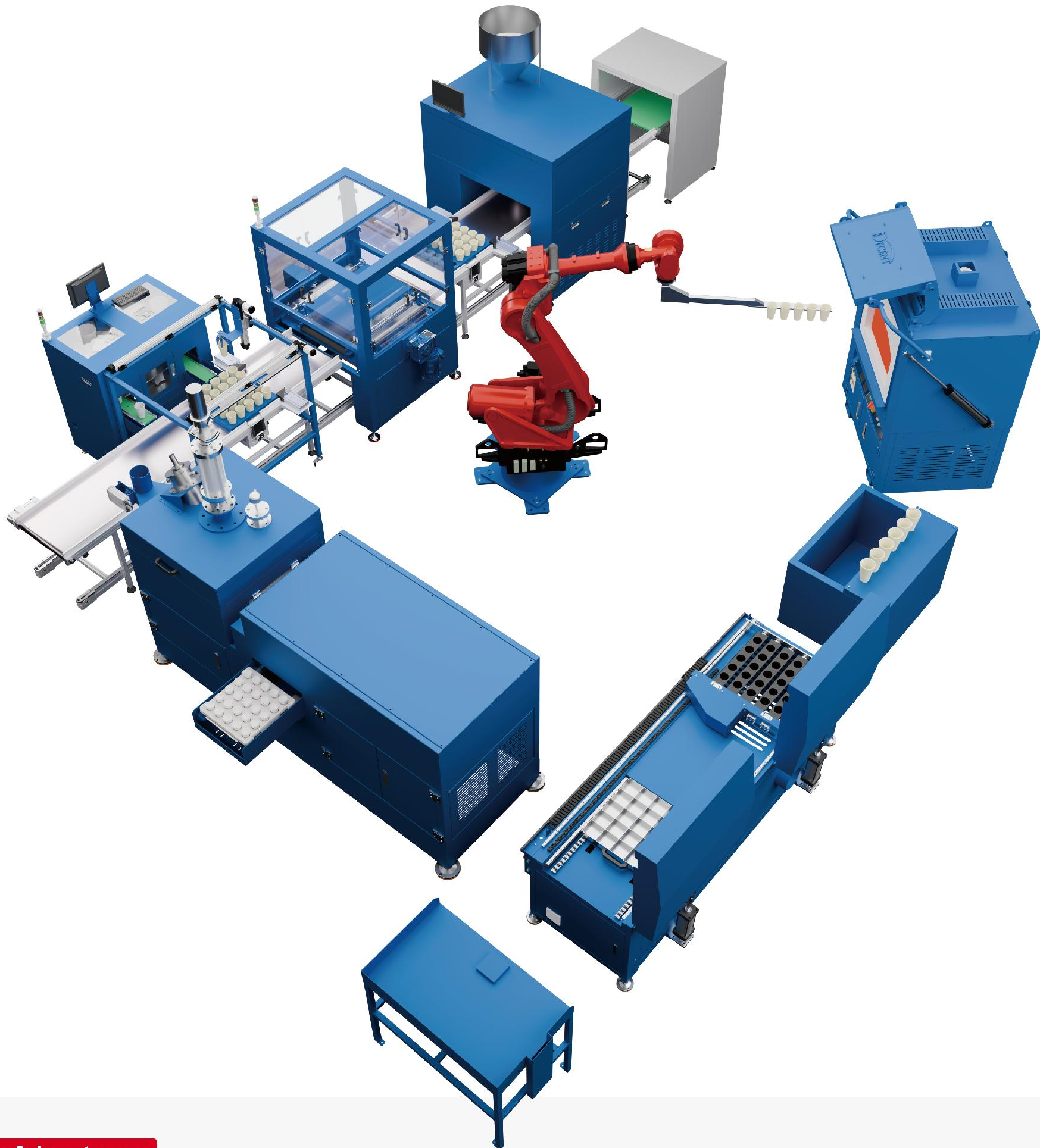Fire Assay
AUTOMATED FIRE ASSAY SYSTEM

Key Advantages

- **Full Automation:** Integrates automatic batching, mixing, flux addition, smelting, casting and cupellation.
- **Data traceability:** Each sample generates an independent electronic file for full-process data traceability.
- **Precision Batching:** Compatible with 6 fluxes, featuring cross-contamination prevention design and uniform flux mixing.
- **Smart Cupellation:** Features patented endpoint recognition and individual cupel retrieval to prevent silver loss.
- **Energy-Saving:** Achieve 40% lower energy consumption compared to traditional smelting processes.
- **Intelligent Diagnostics:** 18 key process parameters monitored with real-time anomaly alerts.

① Automatic Flux Batcher

Receives process formulas via upper computer upon robotic arm crucible placement. Uses rotating silos and weighing modules for sequential feeding, then conveys crucibles to the next station.

② Crucible Mixer

Receives crucible trays via conveyor; after photoelectric positioning, films secure trays for reciprocating inversion mixing.

③ Covering Agent Applicator

Utilizes screw quantitative injection for precise and uniform addition of covering agent to ore samples.

④ Intelligent Fusion Furnace

Robotic arm places crucibles into the furnace, achieving complete ore melting at 1200℃ in 70 mins.

⑤ Automatic Steel Mold Turner

The robotic arm pours the molten sample into the steel mold, which then automatically inverts to transfer the slag and lead button into the lead button tray.

⑥ Cupellation Furnace

Cupels enter modular chambers; endoscopes detect cupellation endpoints and retrieve finished cupels individually.