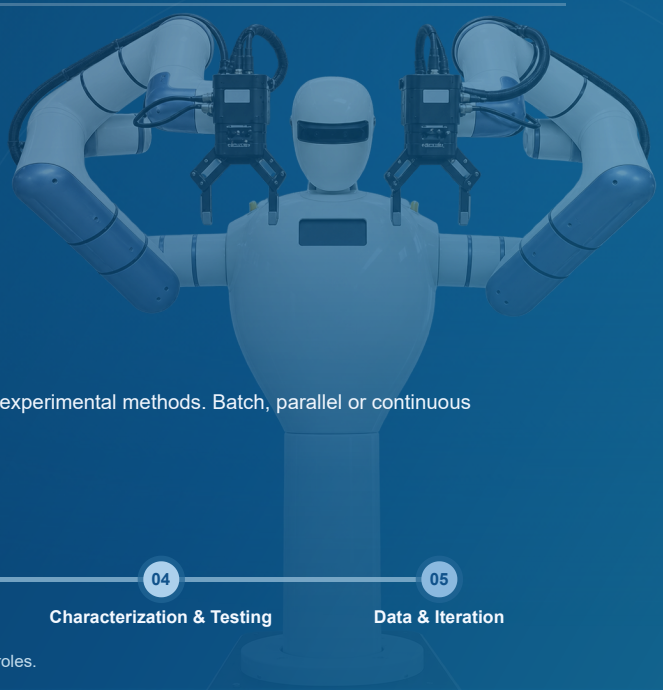
LabFlux
Intelligence Ltd

Intelligent Flow for Scientific Discovery

MATERIALS R&D · LAB AUTOMATION

Flexible High-Throughput Lab Automation



For Materials R&D · Integrated Platforms & Phased Deployment

We integrate proven instruments, robotic operations and workflow software around your experimental methods. Batch, parallel or continuous workflows support formulation screening, materials preparation and analysis.

Connecting Material Preparation, Testing and Analysis

01 Dosing & Preparation
02 Sampling & Transfer
03 Sample Pretreatment
04 Characterization & Testing
05 Data & Iteration

Select the steps your experiments require, and coordinate equipment, sample transfers and human–robot roles.

01 Our Products and Services

Build in phases to suit your R&D plans, from a single process workstation to a complete high-throughput automation platform.

01 Reagent Preparation

Automated powder and liquid dosing, mixing and synthesis, with recipe-based material handling and data recording.

02 Sample Processing

Mixing, centrifugation, pipetting, decapping and film removal, integrated with existing equipment.

03 High-Throughput Reactions

Batch and parallel reactions for screening formulations and process conditions.

04 Sampling & Characterization

Scheduled sampling and aliquoting, sample transfer/storage, preparation and loading for testing.

02 End-to-End High-Throughput Automation

Integrate the process workstations into a complete laboratory system, from material preparation through testing and analysis.

Equipment & Layout
Instrument selection, adaptation and workstation layout

Robotic Operations
Tools, fixtures and operations for your labware

Workflow & Data
Task scheduling, device coordination and sample-linked data records

Integration & Testing
System assembly, on-site commissioning and acceptance testing

Training & Handover
Operator training, documentation and operational support

03 Built Around Your Experiments

✓ **Integrate Proven Instruments**
Connect existing or new instruments through interfaces, fixtures, end effectors and targeted modifications.

✓ **Human–Robot Collaboration**
Robots handle repetitive tasks; researchers adjust methods, replenish or change materials, and make key decisions.

✓ **Adapt and Expand**
Workflow software coordinates instruments and human handoffs. Adapt configurations as recipes, labware and steps change.

Your workflow defines the scope of the platform.

Engineering Capability in Practice

Laboratory automation for research collaborations, with engineering solutions for dosing, sampling and testing.

Materials R&D Collaborations

Team contributions to laboratory automation



MARS | Microcapsule Materials Discovery

19 LLM agents + heterogeneous robots

Matter · Cell Press | Research: Xuefeng Yu's team, SIAT, CAS

Agentic hierarchical cooperation for materials discovery



AP-LAB | Autonomous Magnetic Microsphere Pilot Platform

12 parallel channels · 10–100 g pilot scale

Advanced Science · Wiley | Research: Xuefeng Yu and Wenhua Zhou's teams, SIAT, CAS

AI-Driven Autonomous Pilot Platform for New Materials

The team contributed to automation development. Research results belong to the respective research teams; figures describe the platforms' configurations and scale.

Experimental Workflows & Key Operations

Engineering solutions / layouts and mechanisms



Flexible Multi-Material Dosing

5 powders + 6 liquids

Dual arms and dedicated tools handle material sorting, powder and liquid dosing, staged weighing and mixing, with actual dose and batch records.



Culture Media Preparation & Sampling

16 × 10 L vessels · 140 bottle positions

Link preparation, sterilization, transfer, sampling via tubing and refrigeration, with robotic handling of Luer fittings, flexible tubing and syringes.



Sample Pretreatment & PCR

Two stations: pretreatment + extraction/PCR

Decapping, film removal, pipetting and shuttle transfer link mixing, centrifugation, nucleic acid extraction, PCR reagent preparation and instrument loading/unloading.

Engineering scope and proposed configurations are shown above.

In-House Developed Process Instruments

In-house instruments improve precision and reduce setup costs

High-Precision Powder Dispenser

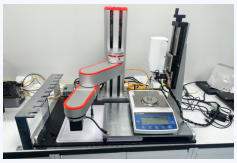
Balance feedback controls coarse dosing, fine dosing and final top-ups. Adaptable to customer powders and containers for integration into the platform's material preparation workflow.



Benchtop Configuration



Robot-Held Configuration



DIY Configuration



Island Configuration

An Experienced R&D Team

Expertise in robotics, industrial software and advanced hardware supports application adaptation, workflow control and system integration.

20+ years

Robotics & Equipment

Industrial and laboratory automation
Custom equipment · embodied robotics

10+ years

Industrial Software

PLC · HMI · SCADA · DCS
Supervisory control and PC-based software

10+ years

Advanced Hardware

FPGA · high-precision data acquisition cards
Timing control cards · image processing cards

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