

Harnessing AI for Real World Impact

Wen Jie Ong

Principal Product
Manager - *ALCHEMI*,
NVIDIA

Julie Edgar

CTO, *Lubrizol*

Sean Ammirati

CEO & Co-founder,
Growth Signals

(Moderator)

IRI 2026

**INNOVATORS
SUMMIT**



Lubrizol Confidential

Embedding digital and AI in our workflows



Autonomous Experimentation

Robotics & AI-Driven Experimentation
High-Throughput Parallelisation
Data-Rich Processes
Closed-Loop Agentic Execution



Data/Decision Science

Physics-based Modelling & Cheminformatics
Predictive/Prescriptive Machine Learning
Agentic AI Frameworks & Platforms



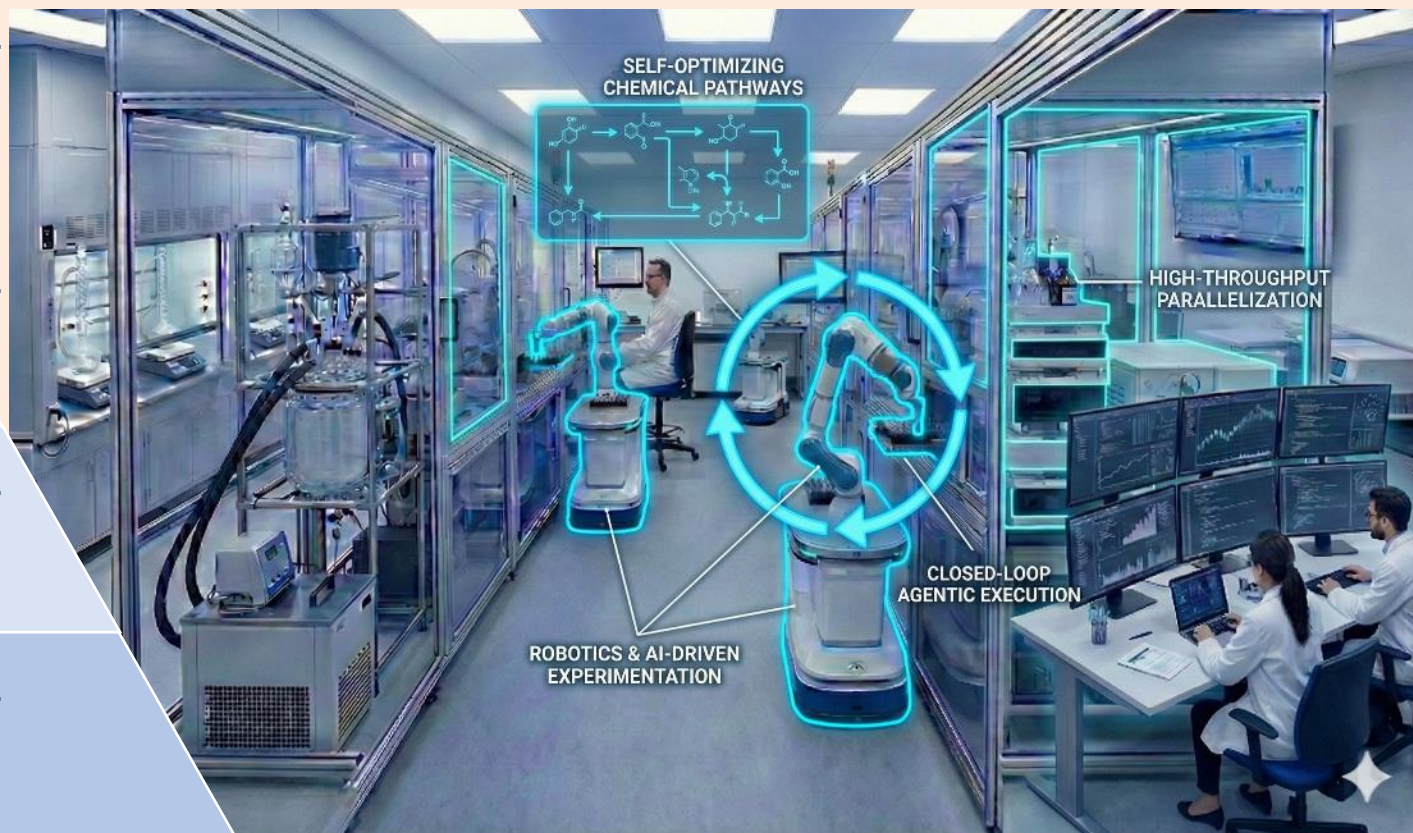
Connected Ecosystem

IoT-Enabled Lab Equipment
Automated Data Capture & Streaming
Real-time Instrument Monitoring



Data Foundation

Cloud based infrastructure
Electronic Lab Notebooks (ELN)
Laboratory infosystems (LIMS)



IRI 2026

**INNOVATORS
SUMMIT**

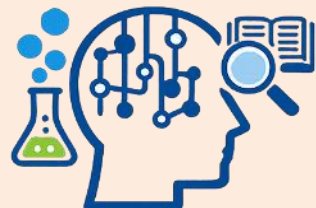
Digital Lab Foundations Enable Automated Data-Driven Chemistry



Lubrizol Confidential

Linking activities & workflows

Develop a generalizable AI scientist architecture for specialty chemicals R&D, comprising an orchestrator agent and specialized agents for each stage



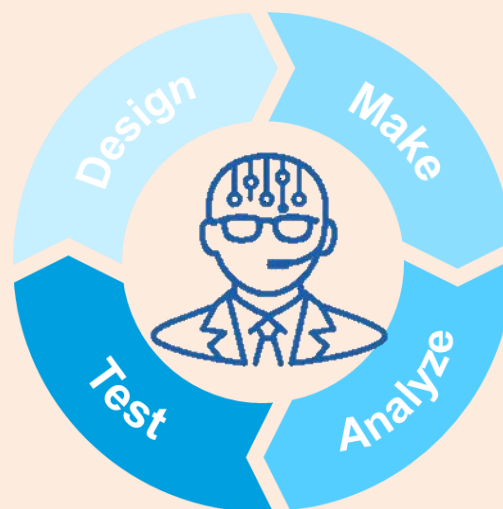
Design Agent: digest inputs from literature & modelling to design new chemistry.

- Bayesian Optimization
- Cheminformatics & Physics-based modelling



Test Agent: Use automatable miniaturised testing to match chemistry to performance.

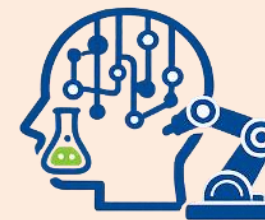
- HTP Formulating & other techniques



Orchestrator Agent: Receive human inputs and drive autonomous execution throughout the cycle.

Synthesis agent: take inputs from **Design** to safely conduct automated synthesis in batch or flow.

- Closed Loop Flow Synthesis



Analysis Agent: sample reactions and conduct **multi-technique** structure verification for **complex mixtures**.

- HTP analysis methods
- Automated data interpretation
- Automated structure verification



IRI 2026

**INNOVATORS
SUMMIT**

Understanding capabilities at each step is key – different solutions for different steps



Lubrizol Confidential

95%

of generative AI pilots
at companies are failing

Source: MIT State of AI in Business 2025 report

3 Key Points

- Data is probably slightly overstated
- Even 60% is too high
- Need to pick the right kinds of projects



95%

of generative AI pilots
at companies are failing

Source: MIT State of AI in Business 2025 report

Lighthouse Projects Projects

Pilot Project

An early and small-scale initiative designed as a trial run or test case for a larger version of the project.

Lighthouse Project

An early and small-scale initiative designed to produce information or results that could light the way towards something transformational.



Doing Lighthouse Projects Right

- 1 **Multistakeholder**
- 2 **Transformative**
- 3 **Future Oriented**
- 4 **Supported by Leadership**
- 5 **Potential for Growth
and/or Replication**