

Quantum Technology for Automotive and Manufacturing

Quantum Technology

A four-hour course on quantum technology for vehicle makers, suppliers and manufacturers. We cover battery and materials simulation, production scheduling, quantum sensing and navigation, with the status of each use case and what to prepare now.

Duration

4 hours

Short professional course

Level

Executive

No prerequisites

On-demand fee

US\$399

Online on-demand

Judge the evidence. Prepare the right pilots.

What you will learn

- ✓ Explain what quantum computing, sensing and networking can and cannot do for automotive and manufacturing today
- ✓ Read a battery resource estimate and judge when it becomes feasible
- ✓ Test a scheduling or routing claim against the best classical solver
- ✓ Assess quantum navigation and battery sensors by their field data
- ✓ Identify the battery, materials and catalyst problems worth tracking
- ✓ Plan partnerships, pilots and post-quantum migration for vehicles and plants

Who should attend

Executives, R&D and innovation leads, manufacturing and supply-chain program managers, and battery, materials, engineering and data teams at vehicle makers, suppliers and manufacturers. Also useful for aerospace manufacturers, and for investors who assess mobility technology.

Prerequisites

None. No technical background is assumed.

Why Quantum Academy

Quantum Academy teaches from *Quantum Systems Integration*, written by the course author, and faculty experience with quantum engineering and integration teams. Hardware results, announcements and resource estimates are clearly distinguished.

What you will study

5 modules · 4 hours · No exam

01 Judging Quantum Claims – 45 minutes

Separate hardware results, announcements and estimates; distinguish physical from logical qubits. Test manufacturing claims against strong classical baselines and separate roadmap commitments from targets.

02 Quantum Computing for Batteries, Materials and Production – 75 minutes

Cover battery spectra, electrolytes, catalysts and gate budgets. Published estimates put the first simulations of the cathode spectra that explain battery degradation at 100 to 414 logical qubits, and we expect them around 2029–2032. We expect scheduling and logistics to stay with classical solvers and AI through at least 2035, and quantum sensing for navigation and battery monitoring is the nearest to deployment.

03 Quantum Sensing and Secure Connectivity – 45 minutes

Assess navigation trials, diamond magnetometers and manufacturing inspection. Examine why quantum radar does not suit vehicles, and why connected vehicles and over-the-air updates need post-quantum cryptography rather than QKD.

04 What Vehicle Makers and Manufacturers Are Doing – 30 minutes

Review Ford Otosan, Volkswagen, Mercedes-Benz, BMW, Airbus, Hyundai, Toyota and Bosch programs. Distinguish production use, hardware results, announcements and estimates.

05 Preparing Now – 45 minutes

Track battery and materials problems, benchmark optimization pilots, and plan partnerships and sensor trials. Cover post-quantum migration for long-lived vehicles. Draft a one-page quantum brief for leadership.

Formats and fees

Online on-demand	US\$399
Live online	US\$599
In person	US\$799
Private team training	Custom quote

What is included

- Course handbook: full material with written instructor notes.
- Use-case table with sources and results labelled as demonstrated, announced or estimated.
- PDF copy of *Quantum Systems Integration*, written by the course author.
- 180 days of access to the online on-demand course.

Upon completion, you receive a Quantum Academy certificate of completion. It confirms that you completed the course and is separate from Quantum Academy's professional certifications.

Explore the course

See dates and enroll on the [course page](#).

quantumacademy.com/courses/quantum-technology-automotive-manufacturing/



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