



Battery Technology

Advancing technology, leading
the power revolution

QINETIQ

QinetiQ Battery Technology Services

Battery technology is advancing rapidly, and new challenges constantly arise. Through its technology and expertise, QinetiQ is leading the power revolution to ensure our customers have the commercial advantage.

With more than 25 years' experience of delivering through-life battery technology services and solutions, we are a valued and trusted independent advisor. We offer leading expert advice and services, such as Test and Evaluation, and innovative technology-based products.

Operating in a highly secure workplace, our position in the forefront of the power revolution is enhanced by our many commercial, defence and academic networks, including collaboration with organisations such as Johnson Matthey, Fraunhofer Institute, DLR (Germany), Centrosolar, and SINTEF.

QinetiQ's all-encompassing bespoke packages are tailored to our customers' requirements, including, but not limited to:

- Identifying optimal power sources
 - Enhancing and boosting battery performance
 - Identifying suppliers and partners
 - Understanding how power impacts on performance
 - Developing technical specifications
 - Investigating battery failure
 - Identifying safety regulations and requirements
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Our people

A highly-skilled team of battery experts possesses deep knowledge built on decades of experience. Our understanding of electrochemical power sources and energy storage devices, such as batteries and fuel cells, is based on working with a diverse range of customers and markets, including the UK Ministry of Defence, the European Space Agency, InnovateUK, Olympus, European Union, Ricardo, and many others.

Our unique understanding of materials science, applied electrochemistry, and electronic and electrical systems, combined with extensive application experience and engineering capabilities, enables us to solve the most demanding battery related challenges in a wide range of applications and markets.

Our security cleared team includes electrochemists, materials scientists, ink technologists, electrical and electronics engineers, control and instrumentation specialists, and mechanical engineers. We also have access to hundreds of QinetiQ experts in related fields, including failure analysis, finance and procurement.

Through a collaborative approach, we offer optimal solutions to our customers, whilst also remaining secure; our extensive controls and firewall procedures mean we are trusted to operate in multiple areas for the UK MOD.

About our facilities

Our high-tech purpose built facilities and equipment include:

- Dry room with 100 m² of floor space containing pilot manufacturing equipment, including pouch and cylindrical cell production, robotic cell stacker and a pilot line manufacturing process capable of managing moisture sensitive materials
- Secure laboratories dedicated to electrochemical characterisation and testing, with over 450 channels that enable constant voltage, power and resistance testing, high current test equipment for super capacitors, and high voltage/current test equipment for battery packs
- A specialised hazard test facility enables dynamic environmental, mechanical and battery hazard testing, impedance testing and evaluation systems for fuel cells and renewables
- Electrical and electronic development workshop
- 3D printing and rapid prototyping facilities

To meet demands of emerging technologies and support new product development, additional capabilities that include:

- Lithium ion and lithium primary cell design and performance modelling
- Battery pack performance modelling
- Thermal modelling of cells and batteries
- Bespoke on-board data logging solutions





Our solutions

As the world evolves towards the power revolution, QinetiQ is at the forefront of innovation, pushing boundaries and exploring exciting areas across the entire batteries spectrum. We offer solutions to our customers across four key areas:

1. Battery supply
2. Technical consultancy
3. Research and development
4. Test and evaluation

Battery supply

Collaborating across industries globally, and through a number of specialist partnerships with chosen suppliers, QinetiQ offers a broad spectrum of battery products. These range from coin cells all the way to large lead acid batteries. To accompany these, we have associated items to suit customer needs, including chargers and solar cell modules.

Through our partnerships we can provide additional solutions to meet customers' specialist requirements, such as bespoke lithium ion battery packs from 5 to 150 kWh, and a number of specialist military products. Expert advice from our technical consultants is available to ensure any bespoke solution meets customer needs.

Technical consultancy

We offer a wide range of services, globally, from advising on the best power source for a specific application or environment, through to investigating causes of failure and providing marketing analysis. In this fast-paced world, our technical consultants work with enterprise and agility to ensure our knowledge is cutting edge and constantly pushing forward.

Decades of experience with security across both commercial and military markets, combined with our extensive controls and firewall processes, makes us an independent and trusted partner our customers can rely on.

Research and development

QinetiQ is pushing forward to shape tomorrow, supporting research in a number of ways. We combine outstanding facilities, specially-equipped laboratories and dry rooms, with a rich heritage and experience in forward-thinking R&D. Our extensive work ranges from assisting in the evaluation of advanced lithium-ion materials, through to cell prototype development and testing, and facilitating demonstrations of innovative battery packs and modules.

Test and evaluation

Test and evaluation (T&E) is fundamental to embracing new technologies and retaining the edge in the battery world. QinetiQ helps customers through the challenges that battery test and evaluation presents.

We offer a comprehensive range of electrical, physical and environmental testing, alongside leading expertise and consultancy that enables customers to understand the implications of results and make informed decisions. We test and evaluate anything from simple electrical discharge, through to thermal shock, all the way up to destructive hazard and abusive testing.

In addition to determining and understanding the performance of technologies, we enhance research and development and support certification, as well as meeting international dangerous goods shipping regulations.

Contact us

As we advance technologies and lead the power revolution, we continue to use innovation and collaborative partnerships to provide customers with the advantage in this fast-paced environment. Get in touch to see how QinetiQ can help you.

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