



# BATTERY TECH EXPO

**26 March 2020**

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Silverstone, The Wing, Silverstone Circuit NN12 8TN



BATTERY TECH EXPO 26 MAR – Come visit us at stand 46/59!

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## WELCOME TO: Battery Tech Expo 2020



**David Reeks**  
Managing Director, 10Four Media

**Turn to page 12 & 13  
for the expo floor plan**

### Events Team:



Rebekah Ford      Helen Peden

The battery supply chain sector continues to develop at rapid pace with the industry investing heavily in the next generation of innovation. Today you'll have the chance to experience the latest technological developments across the battery technology and energy storage. In the main exhibition hall, you'll find leading exhibitors from across the UK and Europe showcasing the very latest innovations. During the day, industry experts will be presenting a variety of topics on the centre stage.

*D. Reeks*

David Reeks

### GOLD SPONSORS





# Speaker Agenda



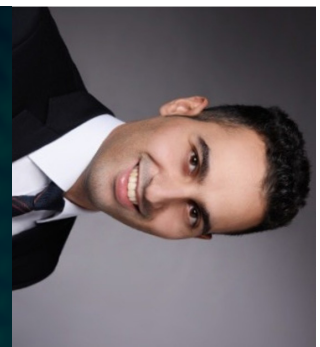
**09:10 - 09:30**

**Lukas Gadza**  
Business Development Director  
UK & Scandinavia

**COMPANY:** BMZ

**SUBJECT:** *BMZ Batteries in the Sustainable World*

Lukas is the Business Development Director UK & Scandinavia at BMZ Group – the leading European manufacturer in lithium-ion battery systems. He works for this corporation for over 7 years. Lukas holds the Master's degree in Economics and the Master of Business Administration degree. Lukas has extensive commercial experience he shares them with many companies across the industry.



**09:30 - 09:50**

**Andreas Alexandrou**  
Sales and Application Engineer

**COMPANY:** ZES ZIMMER

**SUBJECT:** *Measurements on Electric Drive Systems*

Andreas Alexandrou is a Sales and Application Engineer at ZES ZIMMER Electronic Systems GmbH. He supports the European market, providing mainly technical expertise for power measurements for the test and evaluation of systems including electric powertrains, batteries, AC&DC chargers for electromobility, transformers, solar inverters etc. Masters degree in Power Electronics, Machines and Drives



**09:55 - 10:15**

**Dr. Lucy Martin**  
Deputy Director,  
Cross Council Programmes

**COMPANY:** INNOVATE UK

**SUBJECT:** *Why Batteries are coming and how to get involved?*

Lucy Martin is Deputy Director Cross-Council Programmes within EPSRC alongside being Deputy Director within the Industrial Strategy Challenge Fund Faraday Battery Challenge within UK Research and Innovation. Lucy is responsible for strategic leadership and oversight of EPSRC's sustainability and decarbonisation research agenda working closely with colleagues across UK Research and Innovation and the external academic, business and policy communities.



**10:20 - 10:40**

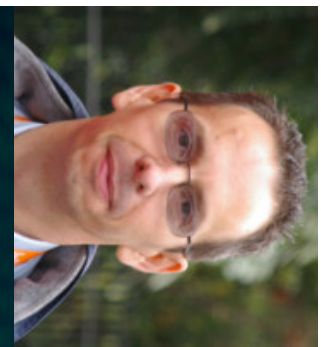
**Tony Wells**  
Managing Director, Merit

**COMPANY:** MERT

**SUBJECT:** *Constructing lithium-ion battery manufacturing facilities using an offsite modular and zero carbon approach*

Tony is the founder and Managing Director of Merit an award-winning design, engineering and construction company focussed on delivering complex, controlled and clean environments. With over 30 years' experience in the engineering industry, Tony has been the driving force in growing Merit to the £40m plus turnover business it is today. Tony has extensive technical knowledge in delivering facilities for global bluechip clients such as GSK, Rolls-Royce and Cell and Gene Therapy Catapult. Most recently, working in partnership with supplier Fisair, Merit has been appointed to deliver the clean and dry rooms for UK BIC's new Battery Lithium-Ion production facility in the UK - using innovative, offsite construction techniques.

# Speaker Agenda



**10:45 - 11:05**

**Nick Carpenter**  
Engineering Director

**COMPANY:** DELTA MOTORSPORT

**SUBJECT:** The Challenges of Engineering and Integrating High-power Battery Systems

Nick Carpenter is founder and Engineering Director of UK-based Delta Motorsport. After gaining a BSc in Automotive Engineering, he spent 4 years working in the automotive sector before joining racecar constructor Reynard as a design engineer in 1996, becoming Assistant Chief Designer in 2001. Nick then moved to a London-based consultancy as Chief Engineer, leading projects from racing motorcycles to a hydrogen fuel cell city car. Formed as a motorsport consultancy in 2005 Delta has, since 2007, broadened its capabilities significantly across the electric and hybrid sector, focusing now on three main product areas; an ultra-low-emissions range extender, vehicle "platform," engineering and control and battery systems. Delta is now applying these skills across a range of sectors, including automotive but also bus, off-highway, aviation and others.

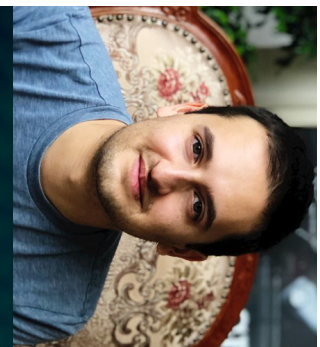
**COMPANY:** FRAZER-NASH CONSULTANCY LTD

**SUBJECT:** Finding the value in smart charging: exploring approaches to fleet optimisation of battery degradation and market performance

A control and electronics engineer with experience across the automotive and renewables sectors. Jon has designed battery management systems for new electrochemical cells and developed optimised system performance using machine learning strategies. He is also passionate about STEM learning initiatives and has received grant funding to develop miniature motion sensing units for STEM education.

**11:10 - 11:30**

**Jon Sowman**  
Consultant



**11:35 - 11:55**

**Jeff Kapp**  
Project Manager

**COMPANY:** 3M

**SUBJECT:** "The Challenge of Charge" Exploring how 3M Technologies can enable an optimised battery pack, through design, safety and manufacturing efficiencies.

Jeff is a project manager representing 3M technologies in the automotive electrification sector. With over 14 years at 3M he has performed roles within the automotive and aerospace sectors, having previously worked for a number of automotive brands where he focussed on launching new materials technology. With Masters degrees in Materials Engineering and Engineering Quality, Jeff has applied his knowledge to specialise in adhesive bonding, lightweighting, and is now enjoying the challenges presented by electrification in its many forms.

**COMPANY:** APC

**SUBJECT:** Supporting Innovation in the Automotive Industry

Dan is an Engineer with over 20 years of experience in the automotive and power generation industries. Beginning his career in project management and manufacturing at GEC ALSTOM, Dan has also held senior positions in production at Automotive Products and purchasing and supply chain supply at Delphi Diesel Systems. Prior to joining the Advanced Propulsion Centre, Dan was the Global Quality Manager at Delphi Automotive Aftermarket Division. At the APC, Dan was responsible for developing the Strategic Business Plan and is now working within the Business Development Team.

**12:00 - 12:20**

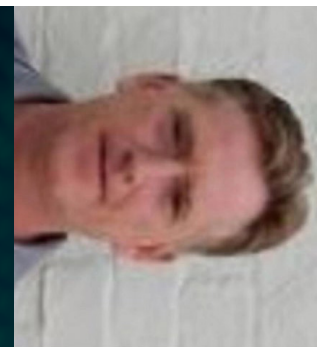
**Dan Bunting**  
Head of Business  
Development/Manager





# Speaker Agenda

**12:20 - 13:15**  
**LUNCH BREAK**



**13:15 - 13:35**  
**James Stratford**  
Technical Director

**COMPANY:** UNIVERSAL SCIENCE

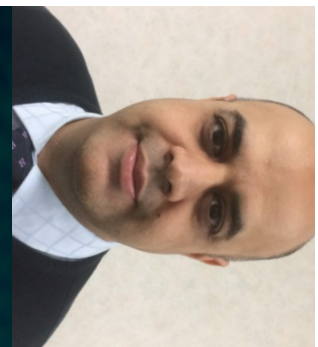
**SUBJECT:** Considerations when selecting Vehicle Battery Construction and Protection materials

James trained as an electro-mechanical design engineer with HMGCC. He then went on to run a high-technology company in micro-electronics in the USA's Silicon Valley during the 90's. He has over 30 years' experience of effective thermal management within semiconductors and their applications. Universal Science was established 18 years ago by James to help engineers overcome thermal problems in their electro-mechanical designs. He is passionate about new technologies which save energy including LED lighting, and Electric vehicles. Universal Science provides high quality materials for constructing battery packs whilst offering the ultimate in protecting the cells whilst in use.

**COMPANY:** STEATITE

**SUBJECT:** The use and development of Lithium batteries in emerging markets and extreme environments.

Khalid has extensive experience within the battery industry, an area in which he has worked for the last 9 years, covering a range of battery chemistries. Khalid is currently focused on the introduction and development of battery technologies into harsh and critical environments.



**13:40 - 14:00**  
**Khalid Khan**  
Business Development Manager

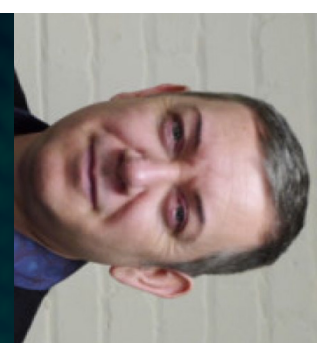


**14:05 - 14:25**  
**Dr. Royston Jones**  
Managing Director

**COMPANY:** ALTAIR

**SUBJECT:** Optimising Battery Performance at the Cell, Module & Pack Levels

Dr. Royston Jones is the Global CTO of Altair and Managing Director of Altair's operation in the United Kingdom & Ireland. For over twenty-five years, Dr. Jones has been involved in the application of CAE methods to produce design innovation. One of his many passions is leading the development of cutting-edge solutions for e-mobility, including methodologies to significantly reduce vehicle weight, create more efficient e-motors and creating batteries optimised for performance at the cell, module and pack levels.



**14:30 - 14:50**  
**Paul Smethurst**  
CEO

**COMPANY:** HILSTONE LOADBANKS

**SUBJECT:** Pioneering Battery Maintenance 4.0

Creating a not for profit battery foundation is an exciting STEM project with origins taken from 120 years of experience from the industrial battery industry sector. The obvious synergies between traditional and new evolving battery technologies allows this presentation at Battery Tech Expo to announce how The Battery Maintenance 4.0 Foundation can deliver training, research and support in to Battery Electric Vehicles

# Speaker Agenda



**14:55 - 15:15**

**Denis Pasero**  
Product Commercialisation  
Manager

**COMPANY:** ILIKA

**SUBJECT:** Everything you need to know about Solid State Batteries!

Denis Pasero joined Ilika Technologies in 2008, as a scientist specializing in battery technology, to manage commercial lithium ion projects. He became part of the Ilika team to apply his strong academic knowledge to commercial applications and saw the potential to be part of the development and success story of an enterprising smaller company with exciting technology and novel product ideas. Today, as Product Commercialization Manager, Denis interfaces between customers and technical teams.

**COMPANY:** BRILL POWER

**SUBJECT:** Brains for Batteries

Christoph BirkI is the CEO and co-founder of Brill Power, based in Oxford, UK. He earned a M.Sc. in Sustainable Energy Engineering at the Technical University of Denmark, and a PhD in Engineering Science at the University of Oxford, UK. Christoph gained more than five years of experience in energy technology research in his PhD and postdoc position at Oxford University, where he developed novel methods to detect and predict degradation in lithium-ion batteries. Christoph is a lifetime member of the Royal Academy of Engineering's Enterprise Hub and has been leading Brill Power as CEO since 2016.



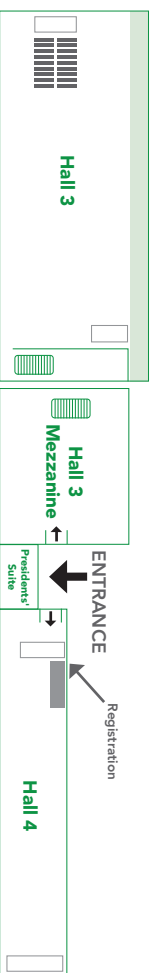
**15:20 - 15:40**

**Christoph BirkI**  
CEO & Co-founder

Notes

# Floor Plan & Exhibitors

## GRAND PLAN

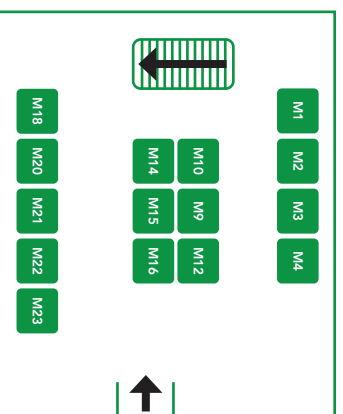


Silverstone International Race Track

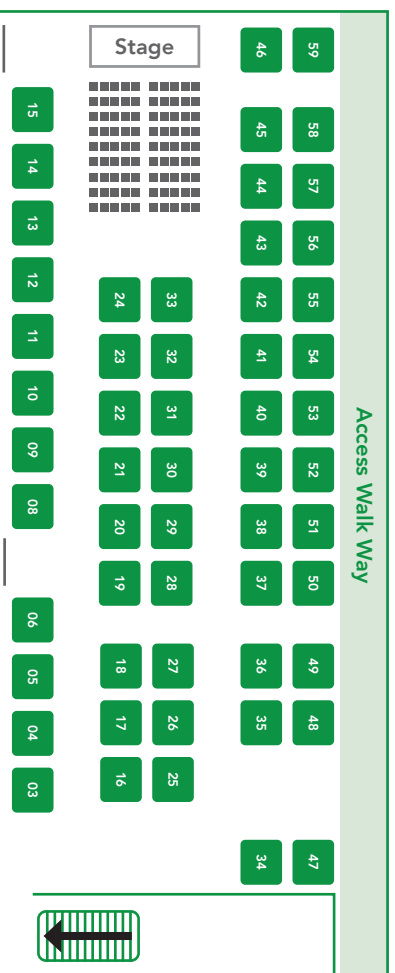
### Stand Number Exhibitor

03	Nynas
04	GYS
05	MEP Technologies
06	Steatite
08	Caltest Instruments Ltd.
09	Advanced Test Equipment Rentals
10	Delta Motorsport
11	Accutronics
12	Technotrans
13	Samuel Taylor
14 & 15	Huber
16	Aceleron
17	ZES Zimmer/AR UK
18	Accelonix
19 & 20	Unitemp Ltd.

## Hall 3 Mezzanine



## Hall 3



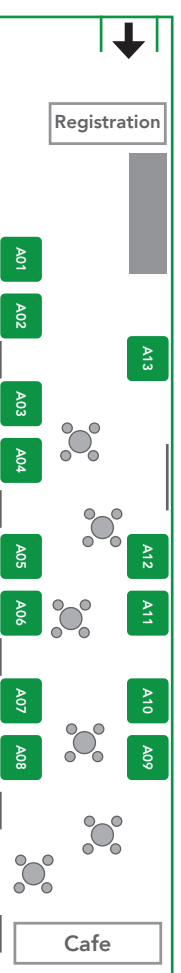
### Stand Number Exhibitor

21	Alvatek
22 & 23	Telonic Instruments Ltd.
24	Enix Power Solutions
25	Stantronic
26	Reneas
27	Humidity Solutions
28 & 29	Nordson ELECTRONICS SOLUTIONS
30 & 31	TR Fastenings
32	MDL
33	Strainsense
34 & 47	BINDER
35	Schaltbau Machine Electrics
36	Lincad
37	Indestructable Paint Limited
38	Hidden Analytical
39	Littlefuse IXYS
40	Altair
41 & 42	Munters
43	Carbolite Geo/Retsch UK
44	Thermal Hazard Technology
45	Julabo
46 & 59	Fraser Technologies
48	a1-envirosciences GmbH
49	Acal Bfi UK Ltd
50	Kratzer Automation
51 & 52	Fisair & Merit
53	Analog Devices
54	Chasestead Ltd.
55	Hillstone Loadbanks

### Stand Number Exhibitor

56 & 57	Connect 2 Cleanrooms Ltd
58	DEWEsoft UK
M1 & M2	3M
M3	UL
M4	Yokogawa UK Limited
M9	Energus PS
M10	ETPS
M12	Ascos Limited
M14	m+p international
M15	Universal Science
M16	Lauda
M18	Vector GB Limited
M20	RML Group
M21	AMS Technologies
M22	ACOTA
M23	Advanced Propulsion Centre
A01	Kelite LLP
A02	Inseto (UK) Limited
A03	Gipfel EDS Ltd.
A04	PPM
A05	Pickering Interfaces
A06	Data Physics UK Ltd.
A07	Ttd
A08	Power Capacitors
A09	SITEST Ltd.
A10	Tektronix
A11	The IET
A12	Thermal Issues Limited
A13	Fire Pro UK

## Hall 4





# Exhibitors



Visit us on stand: M1 & M2

**3M**

3M Centre

[www.3m.co.uk/oem-and-tier](http://www.3m.co.uk/oem-and-tier)

At 3M's Transportation and Electronics business group, we are using the entire breadth of 3M technologies to improve automotive electrification and vehicle energy ecosystems. We leverage more than 100 years of automotive industry experience and combine this with extensive consumer electronics technologies, advanced materials technologies and energy industry expertise. All brought together to create custom solutions to help you envision the future of automotive electronics and build the most advanced and capable vehicles and roadways. From head-up displays to maximising Electric Vehicle (EV) battery range and performance, we're working directly with you to minimise the development cycle and create fully integrated and immersive solutions.

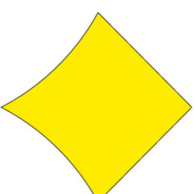


Visit us on stand: M3

**UL**

Unit 1 - 3 Horizon, Wade  
Road, Kingsland Business Park,  
Basingstoke, RG24 8AH  
[www.ul.com](http://www.ul.com)

UL helps create a better world by applying science to solve safety, security and sustainability challenges. We empower trust by enabling the safe adoption of innovative new products and technologies. Everyone at UL shares a passion to make the world a safer place. All of our work, from independent research and standards development, to testing and certification, to providing analytical and digital solutions, helps improve global well-being. Businesses, industries, governments, regulatory authorities and the public put their trust in us so they can make smarter decisions. To learn more, visit [UL.com](http://UL.com).



**YOKOGAWA**

Visit us on stand: M4

**Yokogawa UK Ltd.**

Stuart Road, Manor Park,  
Runcorn WA7 1TR  
[tmi.yokogawa.com/uk](http://tmi.yokogawa.com/uk)

Precision Precision Precision. As the market leader in Power Analysis Yokogawa stand as the only manufacturer that can fully prove the complete specifications that we advertise. Our product portfolio includes Oscilloscopes, DAQ systems and hybrid test instruments too. Visit us to find out more.



**ENERGIUS**  
INTELLIGENT ENERGY SOLUTIONS

Visit us on stand: M9

**Energius Power  
Solutions**

Vilkipėdės g. 4, LT-03151  
Vilnius, Lithuania  
[www.energiusps.com](http://www.energiusps.com)

Since 2014, Energius Power Solutions strives to deliver lightweight, high density power storage for engineering teams within automotive, air, defence, utility and other industries. Thanks to our focus and competence grown, we enable our clients to deliver prototyping and later phase projects within incredible speed. Ask us for more info about this.



# Exhibitors



## ELECTRONIC TEST & POWER SYSTEMS

ETPS specialise in new and rental programmable power systems. Our problem solving skills provide the spark of innovation to some of the world's leading technology brands. We offer a wide selection of products which cater for almost any power, voltage or current requirement. Specific ranges include programmable AC & DC sources, battery/capacitor emulators, bidirectional PSUs, chargers, four quadrant grid simulators, electronic loads, battery/capacitor cyclers and drive cycle test equipment. This year the team will be previewing their new range of bidirectional DC power systems which feature high dynamics, 3 x autorangeing and voltages up to 3000V.

**Visit us on stand: M10**

### ETPS Ltd - Electronic Test & Power Systems

Unit 14, The Bridge, Beresford Way, Chesterfield, S41 9FG

[www.etps.co.uk](http://www.etps.co.uk)



assecos Ltd, are the leading manufacturer of highly-insulated hazardous material storage cabinets. For over 25 years assecos has been actively involved in international associations and working groups to develop innovative and sustainable products to meet the challenges of storing hazardous materials in 21st century laboratories and industrial facilities. We are delighted to be showcasing our new ION-line range of lithium battery storage / charging cabinets. Manufactured and certified to EN1470-1 and EN1363-1, these cabinets offer 90-minutes fire protection from the outside-in and inside-out. Our team of experts will be on hand to advise and guide you through this exciting storage development.

**Visit us on stand: M12**

### assecos Ltd.

16 Eastgate Business Centre,  
Eastern Avenue, Burton on  
Trent, Staffordshire, DE13 0AT

[www.assecos.com](http://www.assecos.com)



m+p international develops and manufactures test and measurement systems for vibration testing, dynamic signal analysis, data acquisition, process monitoring and test stand engineering. Our state-of-the-art products meet the highest demands on quality and reliability and enjoy significant popularity in numerous key industries worldwide – everywhere where maximum efficiency and shortest time to market are crucial.

By working closely with our customers, we understand their applications from an engineer's point of view and this is apparent in our products. A policy of continuous research and development, which has led to many pioneering solutions, ensures that our products demonstrate superior performance and quality.

**Visit us on stand: M14**

### m+p international UK Ltd.

Mead House, Bentley,  
Hampshire, GU10 5HY  
[www.mpilhome.com](http://www.mpilhome.com)



Universal Science has been involved for over 5 years in supplying the electric race car manufacturers with all things surrounding Li-ion batteries. They have more recently been supplying the mass production market of EV's with similar technology. Their online division "Materials Direct" offers custom cut pads, gaskets, TIM, films, foams and foils using RFI, tapes, adhesives, vibration absorbing and light weighting materials for the protection of electronics and the construction of Li-ion battery packs and LED lighting. Materials Direct's online offering is smart, slick and best of all there is no tooling charge or minimum order quantities.

**Visit us on stand: M15**

### Universal Science & Materials Direct

Unit 26 Walker Avenue, Milton  
Keynes, MK12 5TW  
[www.universal-science.com](http://www.universal-science.com)

# Exhibitors



LAUDA is a solution provider for process cooling, thermal management and viscosity measurement to the automotive and aerospace industry. Our products are supported by the knowledge gained through many successful projects from the cooling of dynamometer engine test beds to the precise viscosity measurement of lubricants, oils and fuels. Over the years we have successfully fulfilled the needs of many research establishments, providing both cooling and heating solutions, covering a range of -100°C to 320°C for a wide range of test apparatus

**Visit us on stand: M16**

## **LAUDA Technology Limited**

Unit 12, Tinwell Business Park, Steadfold Lane, Tinwell, Stamford, PE9 3UN  
[www.lauda-technology.co.uk](http://www.lauda-technology.co.uk)



Vector has been supplying OEMs and suppliers of automotive and related industries with a professional platform of tools, software components and services for developing embedded systems for over 30 years.

Our demonstrators will include measurement hardware used in the safe testing of EV systems and components, and software used to log these values. Data rates up to 1MS/s can be logged per channel and signals such as energy and power parameters can be calculated in real time. This enables the user to test and report on the efficiency and capability of the HV system under test.

**Visit us on stand: M18**

## **Vector GB Limited**

1320 Solihull Parkway,  
Birmingham Business Park,  
B37 7YB  
[www.vector.com](http://www.vector.com)



RML Group is a leading high performance engineering company delivering world-class solutions in motorsport and automotive. We also specialise in EV technology for road and race applications utilising our state of the art energy storage design and manufacturing facility. With a multi award winning racing pedigree, we have applied this success to developing high performance road car derivatives and advanced automotive technology for OEMs.

**Visit us on stand: M20**

## **RML Group**

6-10 Whittle Close, Park Farm Industrial Estate, Wellingborough, NN8 6TY  
[www.rmlgroup.com](http://www.rmlgroup.com)



**Visit us on stand: M21**

## **AMS Technologies Ltd.**

Nene House, Drayton Way,  
Daventry, NN11 8EA  
[www.amstechnologies.com](http://www.amstechnologies.com)

AMS Technologies Ltd is already working with key players in the automotive industry in the fast-moving development of battery powered vehicles, advising on battery cooling and thermal analysis. Our technical sales team will be available to answer questions and discuss your requirements. In addition to our thermal capabilities we will also be exhibiting an example of a Sensuron fiber optic sensing platform that enables engineers to collect and analyze thermal and structural data based on minute changes in thousands of points of light in order to measure the integrity of materials and improve the performance of engineering innovations.



# Exhibitors



Specialty material solutions

Acota supplies thermal management and dielectric fluids for improved battery performance. We offer a range of chemically inert, clear, colourless, stable non-flammable fluids with low environmental impact and high thermal stability, as used in Formula E cars. Acota is the sole, authorised UK distribution channel of 3M™ Novec™ Engineered Fluids and 3M™ Nextel™ brands.

**Visit us on stand: M22**

## Acota

Centrepoint, Knights Way,  
Battfield Enterprise Park,  
Shrewsbury, SY1 3BF  
[www.acota.co.uk](http://www.acota.co.uk)



**Visit us on stand: M23**

## Advanced Propulsion Centre UK

The Advanced Propulsion Centre UK Ltd, IIPSI Building, University Road, University of Warwick, Coventry, CV4 7AL  
[www.apcuk.co.uk](http://www.apcuk.co.uk)

Our job is to ensure the UK remains competitive in the research, development and production of low carbon automotive technologies, anchoring and growing UK capabilities. The Advanced Propulsion Centre funds a wide range of technologies. The key focus areas are: Thermal Propulsion Systems, Energy Storage & Energy Management, Electric Machine & Power Electronics, Lightweight Vehicle & Powertrain Structures. Born out of the collaboration between UK Government and industry, our organisation aims to save 50 million tonnes of CO<sub>2</sub>, safeguard or create 30,000 jobs in the UK and make £1 billion of match funding, committed by industry and government, available to research and develop low carbon automotive technologies in the UK.



**Visit us on stand: 03**

## NYNAS

Linetorpsvägen 7,  
121 63 Johanneshov,  
004686021200  
[www.nynas.com](http://www.nynas.com)

Nynas is a different kind of oil company – we want to use oil, not burn it. With around 1000 employees, production facilities in Europe and offices in over 30 countries, Nynas is dedicated to researching, producing and supplying specialty naphthenic oils and bitumen for a growing global market. Together with our customers, we have the know-how to find new applications and meet new challenges that can help shape society. We take oil further to bring value to customers and the world we live in.



**INVEST IN THE FUTURE**

**Visit us on stand: 04**

## GYS

Unit 3 Great Central Way,  
Rugby, Warwickshire CV21 3XH  
[www.gys-welding.com](http://www.gys-welding.com)

GYS are a major European manufacturer of battery charging equipment. Topping their range is a powerful 120A programmable charger, suitable for Lithium and Lead-acid batteries. Connected Technology facilitates software updates, and bespoke charging curves to be programmed and uploaded. Printers, keyboards, and bar code scanners can be connected to suit a wide range of applications.

Battery evolution, requires equipment to support new technologies, to evolve similarly. Based in France, GYS are constantly investing in research and development, keeping them at the forefront of this technology, enabling them to provide equipment meeting the requirements of the latest vehicles.

# Exhibitors



Battery Systems & Support

A UK company providing leading edge design and manufacture of battery packs and systems for automotive and non-automotive applications.

With extensive expertise in the design and development of lithium-based battery packs and full systems, MEP Technologies can offer a complete development solution to support a variety of applications, from small high power battery packs to energy storage systems and automotive traction batteries.

Visit us on stand: 05

## MEP Technologies Ltd.

Balgray Works, Balgray Place,  
Dundee DD3 8SH  
[www.meptec.co.uk](http://www.meptec.co.uk)



COMPUTING - POWER - COMMUNICATIONS  
A Solid State Group Company

Visit us on stand: 06

## MEP Steatite Ltd.

Balgarnah Wood Road, Ballyhenry, Ballybride,  
Bundoran Road, Ballybride,  
Warrinstown, Co. Wick  
[www.steatite.co.uk](http://www.steatite.co.uk)



**CALTEST**  
**Instruments Ltd**  
Specialists in power  
and instrumentation

Sales • Rentals • Service • UKAS Calibration

Caltest Instruments offer high level technical/ applications support, an extensive range of sale, demo and rental equipment and a comprehensive service/ UKAS calibration department.

Caltest proudly represent a number of industry leading manufacturers.

Visit us on stand: 08

## Caltest Instruments Ltd.

Unit 2 Viceroy Court, Bedford  
Road, Petersfield, Hampshire  
GU32 3LJ  
[www.caltest.co.uk](http://www.caltest.co.uk)



*The Knowledge. The Equipment. The Solution.*

Advanced Test Equipment Rentals is a leading rental provider of battery testing equipment, environmental chambers, and other specialized test equipment. Rent from the largest selection of in stock test equipment and get industry leading technology capable of meeting the latest specs.

Visit us on stand: 09

## Advanced Test Equipment Rentals

10401 Roselle Street,  
San Diego CA 92121  
[www.atecorp.com](http://www.atecorp.com)



# Exhibitors



## Visit us on stand: 10

Delta is an innovative and creative engineering business, based at Silverstone Circuit, in the heart of the UK's high-performance technology cluster.

Delta has three main development streams: battery systems, its catalytic generator and platform master control. Each is approached with the same robust but lightweight methodology, honed through decades spent in the high-pressure motorsport sector.

Wrapped around these three streams is also a vehicle engineering and integration capability that has seen Delta deliver many whole vehicle projects, for start-ups and OEMs alike.

**Delta Motorsport Limited**  
Unit 9 Silverstone Tech Park,  
Silverstone Circuit, Silverstone,  
NN12 8GX

[www.delta-motorsport.com](http://www.delta-motorsport.com)

**accutronics**  
AN ULTRALIFE COMPANY

## Visit us on stand: 11

**Accutronics Ltd**  
(an Ultralife company)

Unit 20 Loomer Road,  
Chesterston, Newcastle-under-  
Lyne, Staffordshire, ST5 7LB  
[www.accutronics.com](http://www.accutronics.com)

Accutronics is a leader in the design, development and manufacture of portable power solutions for Medical, Defence & Security, Test & Instrumentation, Robotics and other Industrial applications where failure is not an option. Together with our parent company, Ultralife Corporation, we create high quality, high performance power solutions that meet demanding application requirements. OEMs worldwide depend on us to be a valued partner delivering both custom and pre-engineered batteries and chargers that are differentiated by innovation, time to market, performance, reliability and safety.

**technotrans**

## Visit us on stand: 12

Technotrans understands that the temperature of modern lithium-ion batteries is an essential factor for the correct operation and service life of high-performance batteries. Optimum operating temperature of vehicle batteries and stationary energy storage devices can be ensured by a range of our powerful cooling systems. Technotrans offers a wide range of cooling concepts for fast-charging stations. These include compact designs of active as well as passively cooled charging cable cooling modules, suitable for easy integration into the charging stations.

## Technotrans

Axis One, Brunel Way,  
Colchester, CO4 9DX  
[www.technotrans.com/en](http://www.technotrans.com/en)



## Visit us on stand: 13

**Samuel Taylor Limited**

Arthur Street Central, Lakeside,  
Redditch, B98 8JY  
[www.samuelstaylor.co.uk](http://www.samuelstaylor.co.uk)

Samuel Taylor Ltd (STL) manufactures precision stamped components and assemblies, specialising in the sophisticated bonding of bi-metals. With over 120 years of manufacturing history, and an in-depth understanding of metal stamping, STL has successfully transferred its expertise in busbar technology for smart metering, into the development of busbars for electric vehicles. STL's full in-house design and tool build capability supports new and existing project developments from prototype samples to mass-production of presswork components and assemblies.

# Exhibitors



Inspired by **temperature**

Our company was first established in 2017 as Huber UK and Ireland by Dr Patrick Delaney. In January 2019 our company name was changed to Huber UK Temperature Control Ltd and Huber Ireland Temperature Control Ltd these two companies are some of the many subsidiaries and trading partners of Peter Huber Kältemaschinenbau. Therefore we are a pioneer in the field of ecological and sustainable temperature control.

**Visit us on stand: 14 & 15**

## Huber UK Temperature Control Ltd.

Unit 7 Heritage Business Centre,  
Derby Rd, Belper, DE56 1SW  
[www.huber-online.com/en/](http://www.huber-online.com/en/)



**Visit us on stand: 16**

## Aceleron Ltd.

22 Gas Street, Birmingham,  
B1 2JT, UK  
[www.acceleronenergy.com](http://www.acceleronenergy.com)

Aceleron is a lithium-ion battery manufacturer using patented battery assembly technology to manufacture advanced circular economy batteries that are serviceable, upgradeable and recyclable. Our revolutionary battery technology has re-imagined the way batteries should be assembled and enables the total care of battery packs from testing, manufacture, through to reuse and repurposing. Aceleron offers this technology in three core battery products; Solaron 12V 12Ah – suitable for energy demands of households in emerging markets; Essential 12V 100Ah - a lead-acid battery replacement for scalable energy storage use (e.g. data centres, telecoms, UPS) and; Offgen 8 kWh – residential/commercial energy storage. It can be utilised for many applications, due to the design being both modular and cell chemistry agnostic which facilitates the flexibility of packs to be developed for both high power and high energy applications



**Visit us on stand: 17**

## AR UK Ltd.

Unit 8 Madingley Court,  
Chippenham Drive, Kingston  
[www.arukltd.co.uk](http://www.arukltd.co.uk)

The company was formed in 1990, providing UK sales and service for Amplifier Research (AR). We soon became a major UK distributor for specialist companies in the field of Electrical & Electronic Engineering, RF and EMC have since established ourselves as a market leader with an enviable reputation in our industry. We have developed a very strong customer base in a wide range of electronic/electrical business sectors covering communications, military, commercial, medical, automotive, aerospace, product compliance testing, research and educational markets. AR United Kingdom Ltd forms part of the global AR organisation playing a key role in the European distribution and service network.



**Visit us on stand: 17**

## ZES ZIMMER Electronic Systems GmbH

Pfeiffstraße 12, 61440  
Oberursel, Germany  
[www.zes.com](http://www.zes.com)

ZES ZIMMER Electronic Systems GmbH is the sole high-tech company world-wide exclusively dedicated to high-precision power analysis. For more than three decades, power analyzers have been devised, developed, manufactured and sold to customers around the globe from ZES ZIMMER's corporate headquarter in Oberursel (Frankfurt)/Germany. ZES ZIMMER's focus lies on broadband single-/three-phase precision power analyzers. The electric and electronics industry uses them in R&D and for quality assurance, test labs employ them to guarantee compliance with standards, and universities rely on them to train future generations of engineers and scientists.



# Exhibitors



Accelonix is a group of companies operating across Western Europe serving the electronics industry with specialist sales and support. Experts in electronics manufacturing, we offer a range of technologies perfectly suited to Battery Pack and Power Electronics manufacturing. This year, we will be showcasing two technology partners. Hesse GmbH Ultrasonic Wire Bonding and Smart Welding platforms providing next generation technologies for the industrialisation of electrical interconnection. Scheugenpflug AG Dispensing & Material handling, perfectly suited to the industrial dispensing of materials ranging from conformal coatings to highly viscous, abrasive pastes such as those used for thermal management.

**Visit us on stand: 18**

## Accelonix Ltd.

Unit 2 McClintock Building,  
Granta Park, Great Abington,  
CB21 6GP

[www.accelonix.co.uk](http://www.accelonix.co.uk)



The UK is at the forefront of the development & testing of the latest battery chemistries and technologies, choosing the right test chambers is paramount.

Unitemp supplies the Espec range of test chambers for battery cell evaluation and abuse testing, including NIMH, lead-acid and lithium-ion batteries from small battery cells & modules to large battery packs.

All Espec Test Chambers are manufactured to UL, IEC, SAE and EU CAR 1-6 standards, enabling risk-free testing of the safety, performance, and reliability of battery cells. Built-in safety features reduce the chance of an explosion and minimise the damaging effects of a spark-induced explosion.

The Espec range will take a battery through all environmental conditions likely to be encountered by the product during its lifetime.

**Visit us on stand: 19 & 20**

## Unitemp Ltd.

Unit 14, Treadaway Technical  
Centre, Treadaway Hill,  
Loudwater, High Wycombe,  
Bucks, HP10 9RS  
[www.unitemp.co.uk](http://www.unitemp.co.uk)



Alvatek distributes and supports a range of electrochemistry research equipment including test, research and manufacturing equipment for battery and energy storage applications. By providing our customers with expert advice and timely high-quality support, our aim is to ensure that our customers are happy to recommend Alvatek to their peers. At Power Electronics Expo Alvatek will be taking the opportunity to launch a new line of AC power sources from N4L. These sources are perfect for applications including testing and research of renewable energy products. Leading brands represented include Ivium Technologies, BaSyTec, Scribner Associates, N4L, Novonix, Hohsen, PalmSens, BASi, EL-Cell, and more.

**Visit us on stand: 21**

## Alvatek Ltd.

Unit 48, Basepoint Business  
Centre, Abbey Park Industrial  
Estate, Premier Way, Romsey,  
Hampshire, SO51 9AQ

[www.alvatek.co.uk](http://www.alvatek.co.uk)



Telonic a specialist in test instruments and power supplies will have on show Delta Elektronika's new range of programmable dc power supplies which run from 30w to 900kW including a new range of grid tied regenerative sink source units.

Also on show will be Kikusui's range of DC electronic loads for battery testing and kikusui's DC bench power supplies with built in variable impedance setting.

**Visit us on stand: 22 & 23**

## Telonic Instruments Limited

Unit 5, The Business Centre,  
Molly Millar's Lane, Wokingham,  
Berkshire, RG41 2OZ  
[www.telonic.co.uk](http://www.telonic.co.uk)

# Exhibitors



With over 30 years of experience in the manufacturing and distribution of batteries, Enix Power Solutions has diversified into new areas of technology. Our global aim is to become a complete battery solution provider. Our in house design technicians are on hand to find the best solution to meet clients specific product requirements across all chemistries and design constraints. Whether client's needs are simple or complex we can design a custom battery pack that is fit for purpose and commercially beneficial. We identify the correct battery technology and configurations to ensure the battery is physically and electrically suitable, with appropriate safety and electronic circuits.

**Visit us on stand: 24**

## Enix Power Solutions

Unit 2 Focus Park,  
Ashbourne Way, Solihull,  
West Midlands, B90 4QU  
[www.enix-power-solutions.co.uk](http://www.enix-power-solutions.co.uk)



Stantronic Instruments offers a wide range of electronic Test & Measurement solutions for battery, power and energy applications.

Many products will be on show including battery testers, AC and DC power supplies, electronic loads, battery chargers, power meters, plus general-purpose test equipment. We also offer bespoke custom test solutions and systems.

All of our products offer outstanding performance and quality at competitive prices. We provide advice to help you choose the right equipment for your needs and comprehensive technical support once delivered.

**Visit us on stand: 25**

## Stantronic Instruments

53A High Street,  
Northampton NN17 3PG  
[www.stantronic.co.uk](http://www.stantronic.co.uk)



Renesas Electronics Corporation delivers trusted embedded design innovation with complete semiconductor solutions that enable billions of connected, intelligent devices to enhance the way people work and live. A global leader in microcontrollers, analog, power, and SoC products, Renesas provides comprehensive solutions for a broad range of automotive, industrial, home electronics, office automation, and information communication technology applications that help shape a limitless future.

**Visit us on stand: 26**

## Renesas / Anglia

Sandall Road, Wisbech,  
Cambs, PE13 2PS  
[www.anglia.com](http://www.anglia.com)

## HUMIDITY SOLUTIONS

Independently better

Humidity Solutions is the UK's leading independent specialist in humidity control. Our highly experienced and knowledgeable team can design a bespoke solution for each unique application, and supply, install and maintain the equipment throughout its life. The manufacture of lithium-ion cells requires that air in the dry rooms is kept at dew points far lower than in the ambient air. Target levels of -60°C and relative humidities of 0.5% are common. Humidity Solutions' range of desiccant dehumidifiers are specially designed and configured to make this possible, with the remarkable levels of reliability essential in lithium-ion battery manufacture and assembly.

**Visit us on stand: 27**

## Humidity Solutions Ltd.

Humidity House, 1140a Axis,  
Cleeve Road, Leatherhead,  
Surrey KT22 7ND  
[www.humiditysolutions.co.uk](http://www.humiditysolutions.co.uk)



# Exhibitors



DAGE, MATRIX and SONOSCAN, part of Nordson ELECTRONICS SOLUTIONS, market leaders in the Electronics industry, have a wide variety of Bondtest, X-ray and AMI systems for testing and failure analysis of battery components. DAGE's 4600 Battery Bondtester can be automatically configured to quantify the strength of connections using most standard test methods. Heavy gauge wire bonds or battery tab welds typically involve forces of 20-100kg. We offer custom solutions specific to these applications, with shear and pull testing modes of 100kg pull and 200kg shear. Our head-extension mainframe delivers the ideal, large working area, universal battery testing platform.

**Visit us on stand: 28 & 29**

## Nordson ELECTRONICS SOLUTIONS

25 Faraday Road, Aylesbury,  
Buckinghamshire HP19 8RY  
[www.nordsondage.com](http://www.nordsondage.com)



TR Fastenings Ltd (TR) is part of Trifast plc and is an international specialist in the design, engineering, manufacture and distribution of high quality industrial and Cat C fastenings principally to major global assembly industries.

**Visit us on stand: 30 & 31**

## TR Fastenings Ltd.

Trifast House, Bellbrook Park,  
Uckfield, East Sussex,  
TN22 1QW  
[www.trfastenings.com](http://www.trfastenings.com)



**Visit us on stand: 32**

## MDL Technologies Limited

Unit 11, Devonshire Business  
Centre, Works Road,  
Letchworth, Herts, SG6 1GJ  
[www.mdltechnologies.co.uk](http://www.mdltechnologies.co.uk)

Battery / Power Electronic Test Solutions MDL Technologies provides specialist electronic test equipment, test facilities and consultancy to the UK and Ireland, working in partnership with market leading global manufacturers such as Chroma ATE Inc., Hioki E.E. Corporation, Bolab, Toelner & Typhoon Hill. The rapidly expanding automotive and green energy industry is driving the demand for high power electronic components, batteries and sub-assemblies requiring the latest test equipment solutions. Contact MDL Technologies to find out how we can help with your test & measurement requirements.



**Visit us on stand: 33**

## Strainsense

Old Stratford Business Park,  
Falcon Drive, Old Stratford,  
Milton Keynes, MK19 6FG, UK  
[www.strainsense.co.uk](http://www.strainsense.co.uk)

Strainsense has been a trusted and reliable supplier of specialist sensors and instrumentation products. We supply quality sensors for Vibration, Acceleration, Shock, Strain, Pressure, Position, Force, Instrumentation, Inertial, Tilt/Inclination, Torque and Current for both static and dynamic applications.

We also supply the latest high accuracy power analysis and data acquisition equipment, enabling you to satisfy all your measurement requirements in one place. We have a wealth of experience in the Automotive, Crash Test, Flight Test & Military, Aerospace, Space & Satellite, Subsea, Rail, General Test & Measurement and Education markets and we supply both off the shelf and bespoke products.

# Exhibitors



**Best conditions for your success**

BINDER temperature, climate, and environmental simulation chambers are the centerpieces of modern laboratories. Designed to meet the highest demands in scientific and industrial fields, they enable the accurate simulation of biological, chemical, and physical environmental conditions. With cutting-edge technology and pioneering innovations, BINDER develops products that provide real added value for the customer. We apply our expertise and feel for the requirements of dynamic, day-to-day work in research facilities to support the widest range of projects and processes in an optimum way. After all, our aim is nothing less than making a contribution to the health, quality of life, and safety of people.

**Visit us on stand: 34 & 47**

## **BINDER GmbH**

Im Mittleren Oesch 5, 78532  
Tuttingen, Germany  
[www.binder-world.com](http://www.binder-world.com)



Schaltbau manufacture DC Contactors for E-Mobility, Energy Storage, Charging and Isolation. The new C310 range offers up to 1000V 500A Bi-Directional DC operation. The CP range offers up to 3000V 2000A DC operation with pre-charge, multipole and Normally Closed options. Schaltbau also manufacture Charging Connectors and Snap Action Switches.

Schaltbau Machine Electrics also manufacture Power Switching Sub-assemblies and cable harnesses.

Based in Cwmbran, South Wales, Schaltbau Machine Electrics are both a manufacturing plant and distribution point for the Schaltbau product range, and specialists in DC Power Switching. Happy to discuss any requirements you have.

**Visit us on stand: 35**

## **Schaltbau Machine**

### **Electrics**

335/336 Springvale Industrial  
Estate, Cwmbran NP44 5BR  
[www.schaltbau-me.com](http://www.schaltbau-me.com)



**Visit us on stand: 36**

## **Lincad Ltd.**

331 Lysons Avenue,  
Ash vale, GU12 5QF  
[www.lincad.co.uk](http://www.lincad.co.uk)

Lincad is a leading expert in the design and manufacture of lithium-ion batteries, chargers and associated products for a range of applications across a number of different sectors. With a heritage spanning more than three decades in the defence and security sectors, Lincad has particular expertise in the development of reliable, ruggedised product with high environmental, thermal and electromagnetic performance. With a dedicated team of engineers, all product is designed and manufactured in-house at our facility in Ash Vale, Surrey. Lincad is ISO 9001 and TickITplus accredited and works closely with its customers to meet their power management needs.



**Visit us on stand: 37**

## **Indestructible Paint Ltd.**

16-25 Pentos Drive,  
Birmingham, B11 3TA  
[www.indestructible.co.uk](http://www.indestructible.co.uk)

Indestructible Paint Ltd are manufacturers and suppliers of high-performance coatings for use within the aerospace, defence and allied industries, particularly the aero engine, aero engineering and ancillary sectors. Our coatings are engineered to meet the very exacting standards in corrosion protection and chemical resistance required in these industry sectors.



# Exhibitors



For more than 35 years, Hidden Analytical has been a global leader in the design and manufacture of scientific instruments for research, development and production applications. In vacuum, gas, surface and plasma processes our quadrupole mass spectrometers have gained worldwide recognition for their precision and outstanding performance. Our product range for Fuel Cell Studies includes:

- Solutions for Dissolved Gas Analysis and Off-gas Analysis in Electrochemistry
- Mass Spectrometer Gas Analysers with Real-time Gas/Vapour Analysis for Reaction Studies
- Membrane Inlet Mass Spectrometers
- SIMS Surface Analysis for Characterisation of Active Surfaces
- UHV TPD Workstation System for Studying Adsorption/Desorption Mechanisms

**Visit us on stand: 38**

## Hidden Analytical Ltd.

420 Europa Boulevard,  
Warrington, WA5 7UN, UK  
[www.hiddenanalytical.com](http://www.hiddenanalytical.com)



Littelfuse is a global manufacturer of leading technologies in circuit protection, power control, and sensing. IXYS, now part of Littelfuse has gained a worldwide reputation as a premier power semiconductor manufacturer. It's diversified product base of specialized power semiconductors, integrated circuits and RF power. Serving over 100,000 end customers, our products are found in automotive & commercial vehicles, industrial applications, data & telecommunications, medical devices, consumer electronics, and appliances.

**Visit us on stand: 39**

## Ixys / Anglia

Sandall Road, Wisbech,  
Cambs, PE13 2PS  
[www.anglia.com](http://www.anglia.com)



# Altair

## Altair

Altair, Imperial House, Holly Walk,  
Royal Leamington Spa,  
Warwickshire, CV32 4JG  
[www.uk.altair.com](http://www.uk.altair.com)

**Visit us on stand: 40**

Altair is a leading provider of enterprise-class engineering software enabling innovation, reduced development times, and lower costs from concept design to in-service operation. Our simulation-driven approach to innovation is powered by our integrated suite of software which optimizes design performance across multiple disciplines encompassing structures, motion, fluids, thermal management, electromagnetics, system modelling and embedded systems. Altair's simulation solutions for batteries can analyse and optimise thermal management at the individual cell, module and full pack levels; as well as assess the pack for a full range of crash and impact scenarios to enable the development of safer products.



Your Perfect Climate

**Visit us on stand: 41 & 42**

## Munters Ltd.

Knowledge Centre,  
Wyboston Lakes, Wyboston,  
Bedfordshire, MK44 3BY  
[www.munters.co.uk/  
batterydryrooms](http://www.munters.co.uk/batterydryrooms)

Munters, global leaders in energy efficient climate control, are experts in the design, manufacture, supply and installation of turnkey battery dry room systems to achieve ultra-low dew points of less than 1% humidity ( $\leq -40^{\circ}\text{C}$  Dew-point). Specifically designed for advanced battery manufacturers' requirement for precise and low dew point control, while consuming less energy. Over 40 years' experience with proven global installations for manufacturing, and R&D for battery technology, automotive and advanced manufacturing. Munters low dew-point heat recovery system "Green Power Purge" is capable of reducing reactivation heater power by up to 30-50% without compromising on performance, helping reduce clients' OPEX.

# Exhibitors



RETSCH is the leading solution provider for neutral-to-analysis sample preparation and characterization of solids. Based on a century of experience RETSCH develops size reduction, sieving equipment and particle characterization solutions which have outstanding performance, are simple to use and deliver a high Return On Investment based on their quality & longevity.

**Visit us on stand: 43**

## Retsch UK

Parsons Lane, Hope,  
Derbyshire, S33 6RB  
[www.retsch.com](http://www.retsch.com)



## THERMAL HAZARD TECHNOLOGY

Thermal Hazard Technology (THT) is one of the leading suppliers of lithium battery safety testing equipment. ARC provides an adiabatic testing environment typically leading to full thermal runaway. Thermal abuse, overcharge, controlled-speed nail penetration and short circuit can be carried in the ARC. IBC Isothermal Battery Calorimeters (IBC) for high precision heat measurement and heat capacity determination. ICP maintains isothermal conditions of an entire battery with minimal internal thermal gradients during cell cycling. As well as instrumentation, THT offer a commercial sample testing service from their UK laboratory.

**Visit us on stand: 44**

## Thermal Hazard Technology

1 North House, Bond Avenue,  
Bletchley, MK1 1SW  
[www.thtuk.com](http://www.thtuk.com)



THE TEMPERATURE CONTROL COMPANY

TEMPERATURE CONTROL EXPERT IN THE AUTOMOTIVE AND SPACE INDUSTRIES - The professional and solution-oriented JULABO team focuses on custom applications. The comprehensive accessory program offers suitable complete solutions and supplements for every customer-specific requirement: CUSTOM SOLUTIONS AND OPTIMUM SUPPORT - Fast and accurate temperature control is crucial in the research and development for the automotive industry and aerospace. JULABO offers high-performance and reliable instruments for the tests under realistic conditions as well as test simulations. To ensure reproducible temperatures, manufacturers and suppliers require premium instruments supporting more than standard applications.

**Visit us on stand: 45**

## JULABO UK Ltd.

Unit 7, Casterton Road  
Business Park, Old Great  
North Road, Little Casterton,  
Stamford PE9 4EJ  
[www.julabo.com](http://www.julabo.com)



**Visit us on stand: 46 & 59**

## Fraser Technologies

24 Grange Road, Houstoun  
Industrial Estate, Livingston  
EH54 5DE  
[www.frasertech.co.uk](http://www.frasertech.co.uk)

Fraser Technologies are proud to have supported the cleaning and specialty fluid industry for last 50 years. We continue to offer technological advances, adapt to legislative changes and embrace environmental challenges and are now considered one of the leaders within the Precision Cleaning industry. We offer a wide range of new generation chemistries, including replacements solutions for the likes of Trike and nPB and a large variety of solvent and aqueous cleaning systems. Companies from the aerospace, electronics and automotive industries have chosen to work with us because of our expert knowledge, superior trial facilities and our first class after sales service.

We are very excited to launch our new specialty products into the Battery Industry. The Opteon™ range of specialty products are well known for their thermal management and dielectric capabilities and have been constantly adapted to meet industry demand, including ultra-low environmental impact, extremely safe, non-flammable, no health risks and proven replacements solutions for HFCs, PFCs and HFEs. Please come and visit us on stand 46/59 to find out more about our revolutionary products.



# Exhibitors



a1-envirosciences have been at the forefront of the supply and support of instruments for chemical analysis for over 50 years. With a UK office and demo laboratory, we can offer the best levels of customer service.

- Unmatched technical expertise
- UK based technical support
- Development and support with applications
- Product demonstration and technical seminars

Strategic partnerships with premium companies Mitsubishi, Nippon, and Gilson ensure we attract and retain customers spanning a wide variety of market sectors and maintain a unique portfolio of products covering:

- Elemental Analysers (*Sulphur, Nitrogen and Halogens*)
- Mercury Analysers
- Karl Fischer & Auto-Titration
- Bespoke laboratory automation

[www.a1-envirosciences.co.uk](http://www.a1-envirosciences.co.uk)

## a1-envirosciences

Arms Eventyne House, Quay  
Rd, Blyth, Northumberland,  
NE24 2AS

**Visit us on stand: 48**



Acal Bfi design, manufacture and supply customised electronic and electromechanical solutions utilising highly differentiated products and world leading partners in our key technology areas. Using our Consult, Design and Integrate strategy we work with leading OEM's in the EV market solving their design challenges in Sensing, Power Supplies, Magnetics, IOT and interconnect solutions in applications such as EV charging, battery temperature monitoring, IGBT modules, emissions monitoring and inverters. Our technical experts will be on hand to discuss all your design challenges be it a new design or existing product improvements.

**Visit us on stand: 49**

## Acal Bfi UK Limited

3 The Business Centre, Molly  
Millars Lane, Wokingham,  
Berkshire. RG41 2EY  
[www.acalbfi.co.uk](http://www.acalbfi.co.uk)

**kratzer**  
AUTOMATION

KRATZER AUTOMATION provides testing software and integrated test bench solutions for the mobility of tomorrow. We offer modular and open solutions for the automotive industry, such as the development, realization, and supervision of entire test facilities, the installation of turnkey test benches or the modernization of existing systems.

Our battery test systems offer solutions from the individual test stand to the test field and a wide range of applications such as automotive batteries, battery modules, and single cells. The automation system Patools TX with battery test application and web-based test field management offers scalable possibilities for automated test field management.

## KRATZER AUTOMATION AG

Gutenbergsstrasse 5, 85716  
Unterschleissheim  
[www.kratzer-automation.com/  
testsystems/en/](http://www.kratzer-automation.com/testsystems/en/)

**Visit us on stand: 50**



Merit uses innovation and knowledge to deliver complex, controlled and clean environments for clients such as UKBIC, CGT, GSK and Rolls-Royce. Through offsite construction techniques, we can offer clients reduced carbon footprint, improved safety, cost savings and schedule reductions. Merit's partnership with strategic suppliers provides a truly expert solution. Our collaboration with Fisair, who manufacture humidity control equipment and components for the worldwide market, represents a highly skilled and dedicated international team. Visit stands 51 and 52 to hear how Merit and Fisair are applying innovative solutions to build the clean and dry rooms for UKBIC's new Lithium-ion battery production facility.

**Visit us on stand: 51 & 52**

## Merit & Fisair

3 Silverton Court,  
Northumberland Business Park,  
Cramlington, Northumberland  
NE23 7RY  
[www.merit.co.uk](http://www.merit.co.uk)

# Exhibitors



**anglia**

Analog Devices' Power by Linear power management ICs provide high performance solutions for power conversion applications in the automotive, telecommunications, industrial, medical, computing, military, and high end consumer markets. Our ICs provide unmatched power densities, reliability, and software design tools, along with the customer support to provide fast and accurate power supply designs. Analog Devices is exhibiting together with our UK distributor Anglia.

**Visit us on stand: 53**

## **Analog Devices/ Anglia**

Sandall Road, Wisbech,  
Cambs, PE13 2PS  
[www.anglia.com](http://www.anglia.com)

**CHASESTEAD**

world class prototype engineers

**Visit us on stand: 54**

## **Chasestead World Class Prototype Engineering**

Icknield Way, Letchworth,  
Herts, SG6 1JX  
[www.chasestead.co.uk](http://www.chasestead.co.uk)

We specialise in low volume pressed metal parts and fabrications. We have served a wide range of industry sectors that includes automotive, aerospace and defence for nearly 60 years. We produce our own low-cost tooling inhouse and have state of the art 5 axis lasers for cutting final parts. We are currently engaged in a number of electric vehicle programs working directly for the OEMs. Parts include pressed battery covers and components, fabricated extrusions and pressings for the battery area and light-weight chassis parts for the conversion form IC to EV. We have recently invested in a new fibre laser that will enable us to develop and manufacture copper busbars from prototype to production at extremely competitive rates. One-offs to substantial projects are all accommodated and managed in a professional manner from our Hertfordshire site. We have both AS9100D and BS EN ISO 9001:2015 accreditation and all parts are backed by our comprehensive guarantee for both quality and delivery.

**Hillstone**  
PRODUCTS

**Visit us on stand: 55**

## **Hillstone Loadbanks**

Unit 1&2, Freetown Business  
Park, Hudcar Lane, Bury,  
Lancashire, BL9 6HD  
[www.hillstone.co.uk](http://www.hillstone.co.uk)

Hillstone have manufactured loadbanks for the past 30 years for testing batteries such as industrial standby Lead Acid & Nickel Cadmium and EV lithium types. Our experience in BEV spans a generation of load banks manufacture & design from our UK factories including the prototype Ford fuel cell (450V DC 80A) in 2004 to the present day JLR formula e i-pace (450V 75A) battery pack which are discharged in the pit lanes with Hillstone loadbanks. Hillstone are also a founding corporate sponsor of the new not for profit 'The Battery Maintenance 4.0 Foundation' [www.bm40.org](http://www.bm40.org)

**Cleanrooms**

**Visit us on stand: 56 & 57**

## **Connect 2 Cleanrooms Ltd.**

Riverside House, Forge Lane,  
Halton, Lancaster UK LA2 6RH  
[www.connect2cleanrooms.com](http://www.connect2cleanrooms.com)

Connect 2 Cleanrooms is an award winning industry leader, supporting the cleanroom lifecycle both in the UK and internationally across all sectors. Established in 2002, the company designs and manufacture in-house, as well as providing cleanroom validation and cleanroom training services. Tight specifications are applied for temperature and humidity control environments enabling precision, sensitive product production and operator comfort. Its consumables division, [Cleanroomshop.com](http://Cleanroomshop.com), supplies a full range of consumables, equipment and furniture including ESD and anti-static control to the cleanroom industry worldwide. Protecting critical environments whilst creating a journey of development. Stand 56 & 57



# Exhibitors



DEWESoft manufactures a wide range of measurement solutions covering measurement applications across all industries. DEWESoft provides flexible, modular and rugged Data Acquisition systems combined with a versatile turn key software package for Data Recording and Analysis serving applications such as E-Mobility and Power Analysis, Road Load Data recording, ADAS Testing, Combustion Analysis, NVH, Flight Test, Frequency Analysis and many more.

**Visit us on stand: 58**

## **DEWESoft UK**

1 Appley Court, Appley Wood  
Corner, Haynes, Bedfordshire  
MK45 3QQ  
[www.dewesoft.com](http://www.dewesoft.com)

# Keltie

**Visit us on stand: A01**

## **Keltie LLP**

1 London Bridge,  
London, SE1 9BA  
[www.keltie.com](http://www.keltie.com)

Keltie is an intellectual property firm with a unique personality. A firm renowned for excellence, earned by putting talented, energetic and principled people at its heart. We specialise in IP law and management. Our clients benefit from an extraordinarily experienced and multi-faceted group of IP experts including patent, trade mark and design attorneys who work on every technology in all commercial fields. The essence of Keltie goes far beyond what we do. It's about how we do it - with an unparalleled spirit of togetherness, fairness and enjoyment. We want that spirit to embrace the clients we're proud to serve.

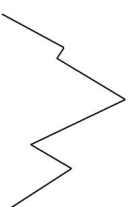


**Visit us on stand: A02**

## **Inseto (UK) Limited**

Unit 25 Focus Way,  
Andover SP10 5NY  
[www.inseto.co.uk](http://www.inseto.co.uk)

Inseto provides battery interconnection equipment for ultrasonic bonding, torsional welding and mechanical testing of welds, plus adhesives for bonding and sealing and wire bonding consumable products. Ultrasonic wedge bonding is carried out at room temperature and provides flexibility to form loops in different shapes and geometries. It has the ability to compensate for changes in surface heights, thus not needing to hold devices in planarity. The bonding process does not alter the surface physically allowing for rework when needed. Ease of automation, real-time process control and testing of the wire bonds are major advantages for wire bonded battery interconnects.



## **Gipfel EDS**

**Visit us on stand: A03**

## **Gipfel EDS Ltd.**

19 The Square,  
Retford, DN22 6DQ  
[www.gipfel.tech](http://www.gipfel.tech)

Gipfel EDS Ltd provides a highly professional power electronics design and intermittent support service. We can offer flexible electronics design and troubleshooting expertise at short notice and with competitive prices. Whether it be a simple design review, EMC debugging, PCB design, or becoming a design partner, we are always happy to help. Our design team has many years of experience designing high efficiency power converters of all topologies, inverters, battery chargers and battery management units in the consumer and automotive industries.

# Exhibitors



PPM Power curates and supplies specialist high voltage and pulsed power components, systems and software from around the world. We have a range of technologies to realise high performance inverter and power converter design. From the latest SiC MOSFET technology offering 500kHz switching frequencies, IGBT modules for advanced topologies and passive components enabling high power-density converters. We also supply high voltage power supplies, switches, connectors and resistors to support high voltage, pulse power and analytical instruments applications.

**Visit us on stand: A04**

## PPM Power

Unit 65 Shrivvenham  
Hundred Business Park  
[www.ppmpower.co.uk](http://www.ppmpower.co.uk)



Pickering Interfaces designs and manufactures modular signal switching and simulation products for use in electronic test and verification. UK headquartered, we provide flexible, scalable solutions in a range of platform formats (PXI, LXI, USB, PCI) to global electronics industries including automotive, aerospace & defence, energy, industrial, communications, medical and semiconductor. Our battery related products include modular switching from low-level signals up to 40A or 1000V, multi-channel battery simulators for battery stack emulation, thermocouple simulators, and a wide range of programmable resistors for simulating temperature sensors and loads.

**Visit us on stand: A05**

## Pickering Interfaces

Stephenson Road, Clacton on  
Sea, Essex CO15 4NL  
[www.pickeringtest.com](http://www.pickeringtest.com)



Data Physics are one of the World leaders in Control systems & Vibration testing. It is based in Sussex (UK) and California (USA), and is part of the NVT Group. Data Physics specialise in Electro-dynamic Vibration and have recently completed 3 large vertical shakers upto 2.5 x 1.5m for a European Car Manufacturer and a test laboratory. Team Corporation and Lamson are also part of NVT group and provide hydraulic shakers and shock and vibration testing. Data Physics look forward to meeting you at the show

**Visit us on stand: A06**

## Data Physics UK Ltd.

South Road, Hailsham,  
Sussex, BN27 3JJ  
[www.dataphysics.com](http://www.dataphysics.com)



**Visit us on stand: A07**

## TTid (Thurlby Thandar Instrument Distribution)

Glebe Road, Huntingdon,  
Cambridgeshire, PE29 7DR  
[www.ttid.co.uk](http://www.ttid.co.uk)

TTid (Thurlby Thandar instrument distribution) is the UK sales division of TTI Ltd and is one of the largest distributors of test and measurement equipment in the UK, representing many leading American, European, Japanese and Far Eastern manufacturers, including Rohde & Schwarz, ITECH Electronics, Chroma, AMETEK Programmable Power (Sorensen, California Instruments, ASTERION, Amrel), Magna Power, Yokogawa, Vitrek, amongst others. Offering a wide range of general and specialised T&M; AC/DC sources and loads (including regenerative & bidirectional), complete systems power solutions, battery test solutions, oscilloscopes, generators, analysers, DMMs, DAQ.



# Exhibitors



Power Capacitors Ltd has over 45 years of experience both as a leading specialist distributor of Power Electronics Capacitors, and also in the design, application, manufacture, installation, commissioning and maintenance of Power Quality Solutions.

Capacitors for almost every Power Electronics application are available, and there will be examples of many styles and technologies on display. Applications include Solar/WindPower Inverters, Battery Storage System Inverters, and Traction Main/Auxiliary drives.

Also on show will be an example of a 50A Active Harmonic Filter, capable of real-time harmonic current mitigation and reactive power compensation of any non-linear load.

**Visit us on stand: A08**

## **Power Capacitors Ltd.**

30 Redfern Road, Tyseley,  
Birmingham, B11 2BH  
[www.powercapacitors.co.uk](http://www.powercapacitors.co.uk)



SiTEST are pleased to show their exciting new product 'The F&K M17 Laserbonder', producing the highest quality connections in batteries that can be achieved by current technology. Easily coping with different height busbars and impervious to contaminants that affect Ultrasonic wirebonders. Also on show is a smart BMS module system by Mersen, combined with the F&K Laserbonder gives the highest possible throughput in manufacture whilst giving the highest quality connections for Production environments. If you are manufacturing Anodes, Cathodes and Separators, then ask about our Dr Schenk Inspection systems that help you improve your yield and produce quality battery materials.

**Visit us on stand: A09**

## **SiTEST Ltd.**

10 Minster Park, Collingwood  
Rd, West Moors, Wimborne,  
Dorset, BH216QF  
[www.sitestest.co.uk](http://www.sitestest.co.uk)



As technology invites complexity, advanced applications are pressed to reflect simplicity. Visit us at stand A10 to see some of the ways Tek experts are supporting the customer, with understanding for the way you work, and innovation to make life easier. We look forward to seeing you.

**Visit us on stand: A10**

## **Tektronix UK Ltd.**

Capitol, Oldbury,  
Bracknell, RG12 8FZ  
[uk.tek.com](http://uk.tek.com)



The IET inspires, informs and influences the global engineering community to engineer a better world. On our stand today are Alex and Tom, happy to talk about membership, professional qualifications e.g. chartered & incorporated engineer, technical professional networks, upcoming events, STEM projects, learning resources, government policy, engineering partnerships, and commercial & marketing opportunities - anything connected with your battery technology ambitions. The IET is the UK's oldest and largest multi-disciplinary engineering institution with 168,000 members.

**Visit us on stand: A11**

## **The Institution of Engineering and Technology**

Michael Faraday House, Six  
Hills Way, Stevenage, SG1 2AY  
[www.theiet.org](http://www.theiet.org)

# Exhibitors



Visit us on stand: A12

## Thermal Issues Ltd.

Unit H, Welland Court, Riverside  
Industrial Estate, Market  
Harborough, Leics LE16 7PT  
[www.titld.eu](http://www.titld.eu)

As power densities increase and battery management systems become increasingly more complex, the need for combined thermal management and electrical isolation increases. Our production process makes use of digital data created directly from CAD drawings. This eliminates the need for costly tooling, and shortens lead-time from weeks to days. Changes to a drawing can be made instantaneously giving a seamless transition from prototype to production. Samples can be supplied next day for fit/form/functional testing. All parts are batch traceable and date controlled. The company also operates a managed inventory system, allowing for fluctuations in a scheduled demand. Flexibility in Response.

## FirePro. UK & IRELAND

Visit us on stand: A13

## FirePro UK Ltd.

St Albans House, St Albans Rd,  
Kingston, Surrey KT2 5HH UK  
[www.fireprouk.com](http://www.fireprouk.com)

FirePro UK are the distributor for UK & Ireland for FirePro fire suppression systems. We specialise in a range of innovative, environmentally friendly, fire engineering products to rapidly detect, alert, and suppress fire in numerous battery storage environments. With over 30 years direct fire systems engineering experience, we provide simple, straight forward, technical & sales support to a network of over 40 trained installers throughout UK & Ireland. As well as showing success videos on lithium-ion fires, we are also live demonstrating FirePro fire suppression, an LPCB certificated fire suppression product, for which we fully support our growing network of trained specialist installers that can design, install, commission and provide after sales support, for land, marine and offshore, applications. We look forward to seeing you at the Battery Tech Expo, come and say hello.

## Notes



Visit us on Stand  
**30 & 31**

Global specialist in the design, engineering, manufacture and distribution of industrial fastenings and Cat C products

TR is a major component supplier to the automotive sector. Our aim is to be seen as the vendor of choice for the Tier 1's who support global OEM's, with our comprehensive product offering.



Sealing



Interior Trim



Lighting Clusters



Chassis & BW



Braking & Steering Systems



Safety Systems



Powertrain

Special Parts | Marriage Bolts | Airbag Fasteners | Spring Steel Clips | Washers | Rubber Bumpstops | Damper Grommets | Bushings | Spring Staples | Hog Rings | Plastic Clips & Rivets | Plastic Components



Contact us: +44 (0) 8454 811 800 | [sales@trfastenings.com](mailto:sales@trfastenings.com) | [www.trfastenings.com](http://www.trfastenings.com)



SAVE  
THE DATE



BATTERY  
TECH EXPO 2021

THURSDAY 25<sup>TH</sup> MARCH 2021, SILVERSTONE

